High school blended learning courses: teacher beliefs, perceptions of experiences, and recommendations

Pamela Culbertson
University at Albany, State University of New York, pamelaculbertson14@gmail.com

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HIGH SCHOOL BLENDED LEARNING COURSES:
TEACHER BELIEFS, PERCEPTIONS OF EXPERIENCES, AND RECOMMENDATIONS

by

Pamela A. Culbertson

A Dissertation

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High School Blended Learning Courses:
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ABSTRACT

Increasingly, more high school teachers are providing instruction using blended learning. This provides benefits to students such as having more time flexibility in their learning as well as the ability to work through assignments at their own pace (Oliver & Kellogg, 2015). However, this also involves student challenges, such as the need for self-motivation and time management.

The purpose of this qualitative study is to gain insight regarding teacher perceptions, experiences, and recommendations regarding transitioning from teaching in a face-to-face classroom environment to blended learning. The theoretical frameworks that form the basis for this research include the Community of Inquiry (CoI), Technology Acceptance Model (TAM), Concerns Based Adoption Model (CBAM), and Disruptive Innovation Theory. Hence, this research is based on diverse frameworks to incorporate those that focus on the change process along with frameworks that address online learning for instruction. Through administering background surveys, in-depth participant interviews, review of course design, and time-ordered matrices of syllabi, triangulation of data was used to provide “convergence of evidence” (Yin, 2009, p. 117).

The research focus on in-depth interviews yielded the opportunity to learn details of the blended course teachers’ experiences from their point of view. By shedding light on teacher perceptions and experiences while transitioning to blended learning, this study sought to inform how teachers may approach this journey and how districts/Board of Cooperative Educational Services (BOCES) may better assist them. Ultimately, this may inform educators of research-based approaches to provide effective blended learning instruction regarding academic, personal, and social skills.
This study showed that high school blended learning teachers enjoyed having the opportunity to meet with their peers to share their ideas and learning strategies. They take pride in coming up with new and improved ways to assist their students in learning. Hence, this will provide more student engagement opportunities.

Furthermore, high school blended learning teachers may gain additional ideas from attending conferences and workshops. Although this does cost money and result in reduced teacher time in the classroom, based on teacher willingness and perceptions, the benefits in attending are very valuable. The teachers are able to learn about diverse areas of blended learning through attending sessions and networking. Ultimately, this will provide greater options for student learning in blended learning environments.
This dissertation is dedicated in memory of my father, Anthony Mazzacua, who always encouraged me to pursue my interests and believe in myself.
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CHAPTER 1: INTRODUCTION

1.1 Background of the Problem

Although there has been an initiative in schools to move to blended learning in order to better meet the individual needs of students, more needs to be learned about how to best provide this instructional format. While enrollment is quickly growing in blended and online learning courses, there is a “great diversity in the effectiveness of courses and content available today” (INACOL, 2013). INACOL (2013) states that blended learning courses provide an opportunity for instruction to be more tailored to students and therefore, keep K-12 students more engaged. Christensen, Horn, and Johnson (2017) report that while there has been strong investment in computers in schools, overall these are not being used to a great extent. Furthermore, computers are mainly being used as a way to supplement traditional teaching methods rather than as a primary teaching method for “student-centered learning and project-based teaching practices” (Christensen et al., 2017, p. 83). Hence, teachers tend to use computers to “sustain their existing practices and pedagogies rather than displace them” (Christensen et al., 2017, p. 84).

1.1.1 High School Graduation Rate Needs Improvement

When students are engaged in school, they will be more likely to earn their high school diploma. Although graduation rates have been slightly increasing over the past several years, many students are still not graduating (Balfanz, Bridgeland, Fox, DePaoli, Ingram, Maushard, 2014). Status dropout rates are especially pronounced for students with disabilities, students in lower income households, and African American and Hispanic males (Chapman, Laird, Ifill, & KewalRamani, 2011). Chapman et al. state that status dropout rates are based on the percentage of people between the ages of 16 and 24 who are not enrolled in school and have not earned a
high school diploma or equivalency credential. English language learners also have lower rates of graduation than the overall population (Balfanz et al., 2014).

Compared to 2006, graduation rates for African American students have increased 15% and 9% for Hispanic students (Balfanz et al., p. 4). Although these increases are greater than the overall graduation rate increases, Balfanz et al. state these populations of students are also the ones with the lowest aggregate high school graduation rates. Hispanic students who were born in the United States were found to have a lower dropout rate than Hispanic students who immigrated to the United States of America (Chapman et al., 2011).

High school credit recovery courses are offered for students to earn credit for courses required for graduation that they did not pass with earlier attempts (Picciano, Seaman, & Day, 2011). Credit recovery options provide opportunities to increase high school graduation rates in the United States. Noor (2016) discovered in his survey of Oregon school districts that the top views on what is best practice of increasing graduation rates from the district perspective involved offering credit recovery and alternative educational offerings. The third reported view of best practice was having “effective and engaging teachers and curriculum” (Noor, p. 15).

1.1.2 Course Offering Limitations in Rural and Small Schools

Furthermore, smaller schools have fewer teachers, resources, and students which presents challenges to offer a wide variety of courses for students at all levels. Because of funding limitations, rural schools tend to not be able to offer as lucrative salaries and benefits as schools in more prosperous regions. Additionally, urban schools, especially those in lower income areas, have more challenges with hiring highly qualified teachers (Christensen et al., 2017). Online and blended courses may offer alternatives for more students to attend classes that would not otherwise be offered, such as advanced level courses.
Online learning courses are offered over the Internet and led by teachers. Teachers and students are in different geographic locations. These are offered using online instructional delivery systems and may be retrieved either within or outside of school buildings (Watson, Pape, Murin, Germin, & Vashaw, 2014). Online courses increase accessibility for students seeking to graduate.

While some online learning programs are offered fully over the Internet, those incorporating an in-person component are referred to as blended learning courses. Blended learning courses provide the combined format of classroom as well as online instruction and offer the potential for personalized learning opportunities (Patrick, Kennedy, & Powell, 2013). When Picciano et al. (2011) surveyed high school principals to share their beliefs of the importance of offering online or blended courses, giving students an opportunity to retake courses they had failed rated the highest at 74% (p. 11).

As depicted in Figure 1 below, Staker and Horn (2012) define blended learning as a combination of an education program in which online instruction is provided in combination with students being supervised in a location aside from their home. Staker and Horn cite they derived the first portion of the definition from Evergreen Education Group and INACOL (2011) and specify the second portion to differentiate from “technology-rich instruction” (p. 3). The authors define technology-rich instruction to either not involve the Internet or incorporate student control of “time, place, path and/or pace” (Staker & Horn, 2012, p. 6). The second part of the definition also delineates the instruction is supervised by someone other than a parent/guardian and takes place in a setting that is not accessible to the general public, such as a public library (Staker & Horn, 2012).
1.1.3 Limitations in Offering Credit Recovery and Advanced Placement Courses

Other reasons Picciano et al. (p. 12) found principals believed important for offering online learning courses included providing courses that would only be available if offered online (72%), offering Advanced Placement courses (60%), and meeting the needs for specific students (58%). The national responses were very similar with credit recovery being ranked second in importance; however, over 70% of respondents ranked these courses with the highest rating (Picciano et al., p. 12). Picciano et al. state that Illinois principals as well as principals in the national study offer online credit recovery courses more than any other type.

As of 2011, the Organization for Economic Co-operation and Development (OECD) reports that 77% of United States students receive a high school diploma with the rate being 74% for males and 81% for females. The average secondary graduation rate for all OECD countries is 83% and nine of these countries have a secondary graduation rate of at least 90% (OECD, 2013). Hence, there are still many students in the United States who do not achieve a high
school diploma. This demonstrates opportunities to increase the percentage of students graduating.

### 1.1.4 Student and Societal Costs of Lower High School Graduation Rates

High school students who leave school prior to graduation tend to have lower incomes, higher incarceration rates, and experience more health issues as compared to the average high school graduate. They pay lower taxes; have a higher dependence on Medicaid, Medicare, and welfare; and are more likely to commit crimes (Levin & Belfield, 2007, as cited in Chapman, Laird, Ifill, & KewalRamani, 2011). As cited in Western and Pettit (2010), state prisoners average grade 10 to be their highest level of education and approximately 70% of all state prisoners have not completed high school (Western, 2006; Harlow, 2003). Hence, students who do not complete high school exert a much higher societal cost compared to graduates.

Students who have recently dropped out have a 16% unemployment rate and 32% live below the poverty threshold (Messacar & Oreopoulos, 2013, p. 55). Messacar and Oreopoulos report this trend tends to continue throughout these individuals’ lives. Based on the General Social Survey from 2005-2010, 32% of high school dropouts reported being “unhealthy” (Messacar & Oreopoulos, p. 55).

Furthermore, Freudenberg and Ruglis (2007) state that “education is one of the strongest predictors of health” (p. 1) with a positive correlation between good health and higher levels of education. Lantz, House, Lepkowski, Williams, Mero, and Chen (as cited in Freudenberg & Ruglis, 2007) found that people lacking a high school diploma tend to engage in higher health risk behaviors such as smoking, being overweight, and not being as physically active. Hence, communities as well as non-completers are adversely impacted when a larger percentage of students do not graduate by having higher crime rates and lower community participation.
1.1.5 Reasons Students Leave High School Prior to Graduation

School disengagement entails students having low levels of school bonding and academic achievement as well as high unexcused absenteeism (Henry, Knight, & Thornberry, 2012). School disengagement is highly correlated with the likelihood of students leaving school prior to graduation (Henry et al., 2012; Messacar & Oreopoulos, 2013). Many students report not feeling able to connect with teachers as well as not having the motivation to continue or the ability to be successful (Messacar & Oreopoulos, 2013).

Noor (2016) presents findings from the survey the Oregon Department of Education (ODE) conducted in December 2015. Out of the 197 Oregon school districts, representatives from 81 districts responded to the portion of the survey asking districts what they believed to be the top three reasons leading to students dropping out. Based on district personnel observations, academic disengagement was listed as the second leading cause of students not completing high school. This was proceeded by absenteeism and followed by family issues or responsibilities. Therefore, solutions must be explored and implemented to reduce the number of students leaving school early.

1.1.6 Online/Blended Learning as an Alternative to the Traditional Classroom

One growing alternative to the traditional classroom is online/blended learning. During the 2009-2010 school year, enrollment in K-12 distance learning courses was estimated at being over 1,800,000 of which almost all are online learning courses. Over 60% of this enrollment was comprised of high school credit recovery students (INACOL, 2013). This is a new form of teaching and learning that high school teachers encounter when transitioning their teaching to an online/blended format. Another option of distance learning that is not implemented as often as online learning is video conferencing.
There are a variety of ways teachers may modify their teaching to meet the needs of online credit recovery students both from the technological and pedagogical perspectives. Oliver and Kellogg (2015) reference placing credit recovery students in front of a computer without monitoring or support as “a recipe for failure” (p. 214). Credit recovery students are assisted by “connected, responsive teaching” (Oliver & Kellogg, 2015, p. 214). In addition to receiving regular feedback and differentiated schoolwork, Oliver and Kellogg (2015) found that high school online credit recovery students benefit from having assistance with factors that have been found to be beneficial for students to succeed in online courses, including goal-setting and time management.

Similarly, Shea & Bidjerano (2010) have found in their research that student self-regulation is important for student success in virtual courses. Self-regulation includes managing time and setting goals (Shea & Bidjerano, 2010). Shea and Bidjerano (2010) state that in order for students to have self-regulation, they must have a strong self-efficacy, a belief they are able to succeed. In this way, students have ‘learning presence’.

Oliver and Kellogg (2015) studied how online credit recovery courses may help struggling students to a greater extent than traditional offerings. In the study, students in the online credit recovery classes were guided by their teachers in developing self-regulated learning and time management skills. Additionally, the credit recovery students responded well to frequent feedback from teachers along with “differentiated content and assignments” (Oliver & Kellogg, 2015, p. 214) and receiving advice on success strategies. The participant teachers and students preferred the online credit recovery courses to the face-to-face classes. However, the authors noted two-thirds of the teachers and students in credit recovery courses found synchronous discussions to contribute to student success (Oliver & Kellogg, 2015).
Additionally, over three-fourths of the teachers in Oliver and Kellogg’s (2015) study reported their students were performing well in online credit recovery courses.

Hughes, Zhou, and Petscher (2015) found in their study that aside from English language learner students, Florida online credit recovery students had greater success in passing than their peers in face-to-face classes. The increase varied from 36% higher in grade 9 to 4% higher in grade 12 (Hughes et al., 2015, p. 12). This study was based on 20 of the most common online courses students were enrolled (Hughes et al., 2015, p. 4).

A virtual setting may be a better environment for some students to learn rather than a traditional face-to-face class. When students take online courses, they do not have the distractions from other students as they do in traditional instruction (Oliver & Kellogg, 2015). The student in Barbour and Siko’s (2012) case study engaged well during synchronous virtual class time. However, there are challenges students may have such as motivation and sufficient access to technology at home (Barbour & Siko, 2012; Oliver & Kellogg, 2015).

Online teaching presence is one of the three areas identified by Garrison, Anderson, and Archer (2000) in the Community of Inquiry with the other two areas being social presence and cognitive presence. According to Kupczynski et al. (2010), online teaching presence is composed of “instructional design and organization, facilitation of discourse, and direct instruction” (p. 24). Online teaching presence may assist with supporting students in self-regulating their learning and improving their time management skills (Shea & Bidjerano, 2010). For this to occur, teachers need to be knowledgeable in strategies for effectively engaging and motivating online learners.

Yazzie-Mintz (2010) administered a survey to high school students and discovered a high desire from students to have instruction that is engaging and opportunities to interact with their
teachers. Students primarily reported the reason they had considered dropping out of school came from not seeing the value in the work they were doing. Furthermore, students who acknowledged being bored in school explained this was because of uninteresting content, irrelevant material, and a lack of interaction with their instructor. Likewise, in a case study Barbour and Siko (2012) conducted, an “at-risk” (p. 1) student’s productivity was found to be influenced by how engaging the teacher was during instruction. Hence, optimal online/blended learning courses incorporate engaging and interactive educational opportunities.

1.1.7 Benefits of Student Self-regulated Learning

Self-regulated learning involves individual students taking an active part in their own learning process. Inclusive in self-regulated learning is the ability to work toward goals (Cleary & Zimmerman, 2001; Pintrich & De Groot, 1990; Zimmerman, 2008). Cleary and Zimmerman describe the phases of self-regulated learning to be forethought, performance, and self-reflection. The phases are shown in Figure 2.

Goal setting, strategy choice, and self-efficacy make up the forethought phase. In addition to setting goals, this includes strategic planning and believing in one’s ability to succeed. Following this is the performance phase. This phase is comprised of strategy use and self-monitoring. The final phase is self-reflection. Within this phase is self-evaluation, casual attributions, and self-satisfaction. Self-reflecting on attributions involves individuals considering the reasons they believe had an effect on their performance. The cyclical model presented in Figure 2 shows self-regulated learning moves back to the forethought phase after the self-evaluation phase (Cleary & Zimmerman, 2001).
Figure 2: Phases of Self-regulation


Cho and Shen (2013) state that self-regulated learning is a combination of student motivation and cognition. Students who self-regulate their learning engage in effective learning strategies, such as written interaction with peers and instructors. The authors concluded from their study that a combination of student individual variables such as goal-setting and the external variable of “instructor scaffolding for interaction” (Cho & Shen, 2013, p. 74) significantly contribute to effective student self-regulated learning. Hence, online instructors support student self-regulated learning when actively participating online and encouraging student interaction in the course.

Khalkhali, Sharifi, and Nikyar (2013) report findings from their study connecting students who drop out of school to have lower levels of motivation in addition to academic
challenges. Teachers must be supported in adjusting to teaching in an online, technological instructional environment. Cho and Shen (2013) concluded from their research that students perform better in online learning courses when having “intrinsic goal orientation, academic self-efficacy, and regulation for achievement” (p. 297). Hence, the authors recommend teachers increase student intrinsic goal orientation by implementing problem-based learning, be more present online, and monitor student online interactions to increase student self-regulated learning. Shea and Bidjerano (2010) state teacher presence that impacts student self-regulated learning includes course design and organization, facilitation, and direct instruction.

In Oliver and Kellogg’s (2015) study, credit recovery students reported the reasons they did not pass the course in a traditional setting the first time was mainly because of lack of self-regulated learning and secondarily, based on the teaching style. Most of the students stated their online credit recovery course helped in both of these areas. They enjoyed not having as much distraction from other students and a self-paced learning experience.

The students in Oliver and Kellogg’s (2015) research commented that the teachers were patient and allowed for extended deadlines and opportunities for students to revise and resubmit their work. Some students also stated they benefited from additional online learning sources teachers informed them about. Moreover, the teachers shared they were able to provide individual student attention through the online credit recovery courses and include interactive Internet educational tools to increase student engagement. Both the students and teachers emphasized the importance of teachers monitoring how students are performing during online credit recovery courses and helping students with setting course goals.
1.1.8 Demographic Background of Online Learning Students

Another consideration is the demographic background of students in online learning courses. Students in grades 9-11 who participated in online learning courses in Florida tended to be White more than Black or Hispanic and not as likely to be economically disadvantaged, have a disability, or be an English language learner (Hughes, Zhou, & Petscher, 2015). Likewise, the Community College Resource Center (CCRC, 2013) found online community college students apt to have a better academic background, be from more affluent neighborhoods, and to have English fluency. This emphasizes the importance of structuring an online credit recovery course to meet the needs of students who may have a variety of challenges.

1.1.9 Teacher Guidance in Online Learning

Students in Oliver and Kellogg’s (2015) research who were enrolled in online credit recovery courses sought and appreciated guidance from teachers in monitoring their educational progress and goal setting. Furthermore, at-risk students benefit from online teachers having an organized course design for them to follow (Barbour & Siko, 2012; Oliver & Kellogg, 2015). Oliver and Kellogg found the time flexibility and ability to work through assignments at an individual pace appeal to online credit recovery students. The students in their study emphasized the importance of receiving frequent teacher feedback and having teachers who were patient with helping them learn.

Teachers are highly instrumental regarding the outcome of implementing new technology-infused instruction to students (Hosman & Cvetanoska, 2013). Hence, I sought to learn approaches and experiences of high school teachers regarding transitioning to teaching blended learning courses. When teachers are able to create and conduct high school blended learning courses in ways that increase student engagement, self-regulated learning, and
perseverance, the possibility of these students graduating from high school is increased. I am seeking to address how high school blended learning teachers progress through the process of transitioning their instruction from traditional face-to-face methods to blended instructional models.

1.2 Statement of the Problem

Increasingly, blended learning courses are being offered in high schools throughout the United States. In order to better meet student individual needs, the vision is to move toward student-centered education (INACOL, 2013). Therefore, teachers must be creative and knowledgeable in teaching students. By having a greater understanding of teacher beliefs and perceptions of experiences regarding transitioning to teaching blended learning courses, school districts may adapt their implementation process accordingly. In my study, I sought to discover how high school blended learning teachers would report their perspectives of experiences regarding the comparisons between teaching full face-to-face courses and in blended learning settings.

Although existing research has compared face-to-face and online learning student experiences, the majority of this has been conducted in the university settings (Emelyanova & Voronina, 2014; Russell & Curtis, 2013; Suwantaratharip & Wichadee, 2014). This research shows how post-secondary students and instructors have perceived various approaches to teaching and learning in the virtual setting. I have referenced these studies to inform my research at the high school level in learning about teacher beliefs, perceptions of experiences, and recommendations regarding transitioning to blended learning.

A limited number of studies have looked at online learning in high school credit recovery courses, such as Oliver and Kellogg (2015) and Hughes et al. (2015). Much research has been
conducted regarding student and teacher perceptions about online learning for post-secondary coursework (Emelyanova & Voronina, 2014; Kear, Donelan, & Williams, 2014; Russell & Curtis, 2013). Although to not as great an extent, there has been research conducted regarding high school student and teacher experiences and perspectives in regards to online learning (Barbour & Hill, 2011; Kerr, 2011; Lewis, Whiteside, & Garrett Dikkers, 2014; and Murphy, Rodriguez-Manzaneres).

In my research, I have studied teacher beliefs, perceptions of experiences, and recommendations regarding credit recovery, credit accrual, and advanced placement blended learning courses. This provides insight into a variety of course types. Furthermore, my research involves learning how teachers perceive transitioning from teaching from a full face-to-face environment to a blended learning setting involving a combination of face-to-face and virtual teaching.

While many studies have taken into account student and teacher perspectives of university online learning, I focused my research on high school blended learning teacher perspectives of their experiences. Barbour and Siko (2012) state there is a “lack of knowledge about at-risk K-12 students engaged in virtual schooling” (p. 1). In the studies by Barbour and Siko (2012) and Russell and Curtis (2013), the researchers heard from the learners and teachers about their perceived importance of interactivity in the virtual learning environment. In Barbour and Hill’s (2011) study on student perspectives of virtual Canadian high school students, the students shared their high value of building a sense of community within their course through online synchronous time with each other.

Hence, I sought to discover more about teacher beliefs and perceptions of experiences in regards to pedagogical approaches in blended learning courses. I have studied how high school
blended learning teachers determine the pedagogical activities they believe assist students with their learning, such as in regards to student engagement, building a sense of community, and providing opportunities for students to learn collaboratively.

Lewis et al. (2014) studied perspectives of online high school students who were at risk of graduating. Although students reported they enjoyed having the opportunity to progress at their own pace in their online courses, they also stated challenges, such as self-motivation and time management. Therefore, in this study, I sought to learn about high school blended learning teacher perceptions of the special opportunities and/or challenges they found students bring in regards to blended learning.

Kerr (2011) conducted research to learn about experiences and varied approaches of three high school social studies teachers in the United States of America. On the other hand, Murphy et al. (2011) focused on the perspectives of online high school teachers in Canada. Kerr (2011) found in all cases that the technological tools used, along with additional ones, could be applied for more in-depth learning. Kerr stated that research on student and teacher perceptions of online learning would be helpful in learning more about methods of offering virtual courses.

Murphy et al. (2011) suggested that professional development regarding the use of synchronous tools may assist teachers with offering more opportunities for real-time interaction. Both studies reported tools in online learning could be used to a greater extent and level to assist student learning. Therefore, I researched facilitators, barriers, and constraints high school blended learning teachers have encountered in transitioning to blended learning courses, such as their access to professional development.
1.3 Purpose of the Study

In this dissertation, I explored how high school teachers perceive and progress in their journey toward teaching high school credit accrual, credit recovery, and advanced placement courses in blended learning settings, a combination of an online and related face-to-face environment. Aspects of these experiences that I studied included how the high school blended learning teachers compared and contrasted face-to-face and blended learning pedagogical methods and how they perceived their experiences regarding integrating student engagement, community building, collaborative learning, student motivation, and interaction within their blended learning courses. I also researched high school blended learning teacher beliefs and perceptions of experiences regarding special opportunities and/or challenges their students bring regarding blended learning. Furthermore, I studied how the teachers perceive their experiences collaborating with their peers and how they believe their administration has been supportive to them in their efforts. I sought to find out more about how the blended learning teachers believe they can be best supported in transitioning to this new learning environment.
1.4 Research Questions

This study was structured to address four main questions:

1) How do high school teachers compare and contrast pedagogical methods used in face-to-face and blended learning courses?

2) How do high school blended learning teachers determine the online activities they believe will increase student engagement?

3) What are teacher beliefs and perceptions derived from direct pedagogical experiences regarding special opportunities and/or challenges students bring in regards to blended learning?

4) What are facilitators, barriers, and constraints teachers have encountered in transitioning to teaching blended learning courses?
CHAPTER 2: LITERATURE REVIEW

2.1 Overview

I reviewed a variety of articles regarding online learning in high schools and postsecondary schools. These include those published regarding teacher and student perspectives on blended and online learning and components of online learning programs that have been found in prior research to be successful. Also, I reviewed articles regarding students who have experienced challenges in the traditional classroom.

Additionally, I reviewed several articles on related research that incorporated theoretical frameworks I used to inform my research. College and university research is included in this literature review in addition to high school research as there are similarities among these demographic groups. However, there are differences between high school and postsecondary learners. Students in high school are not as mature as college learners and typically engage in online learning courses from their local high schools with an adult overseeing them (New York State Online Learning Advisory Council, 2015).

Keywords and phrases I used for locating related studies are: online learning, blended learning, distance education, online class, teacher perspectives, student perspectives, teacher online learning experiences, student online learning experiences, self-regulated learning, self-efficacy, student engagement, student success, student retention, credit recovery, high school, learning management system, virtual learning environment, learning communities, course management system, online collaboration, social media, asynchronous discussions, synchronous discussions, and orientation. I also used keywords and phrases to locate articles based on related theoretical frameworks: Community of Inquiry (CoI), Technology Acceptance Model (TAM), Concerns Based Adoption Model (CBAM), and Disruptive Innovation theory. I searched for
articles using the University at Albany online educational databases and included those that have been published between 2007 and 2017 with a focus on ones published within the past five years.

2.2 Research Frameworks and Related Foundational Theories

The predominant theories I used to inform my research were a combination of ones specifically regarding online learning interaction and theories about the process of change. Garrison, Anderson, and Archer’s (2000) Community of Inquiry (CoI) framework addresses the processes of teachers and students engaging in the virtual instructional environment. The CoI framework sets the stage for the three types of presences: cognitive, social, and teaching.

I am referencing the Technology Acceptance Model (TAM) developed by Davis (1989), Hall and Hord’s (2001) Concerns Based Adoption Model (CBAM) (as cited in Saidin & Sam, 2013), Rogers’ (1983) diffusion of innovation theory (as cited in Hosman & Cvetanoska, 2013), and the Disruptive Innovation theory (Christensen, Horn, & Johnson, 2017). These four theoretical frameworks apply to the change process in education. Therefore, I used these to inform my research regarding the process high school blended learning teachers experience as they transition to teaching in online and settings. I pursued gaining knowledge about teacher perspectives and progression during their journeys through adapting to providing virtual learning experiences for high school students in blended learning courses.

2.2.1 Community of Inquiry (CoI)

Online learning courses involve instructors and students interacting with one another in a virtual setting. As people form a learning community when they meet face-to-face in a class, they form a virtual community within an online learning course. In the research of Shea and Bidjerano (2009), the authors use the Community of Inquiry (CoI) framework provided by
Garrison, Anderson, and Archer (2000). This model provides a foundation to follow in the development, processes, and procedures in online learning courses.

**Figure 3: Revised community of inquiry model including “learner presence”**


Shea and Bidjerano (2009) explain that the three presences of social, teaching, and cognitive are necessary in successful online learning courses and intersect to form educational experiences. Whereas the social and teaching presences overlap to set the climate, social and cognitive presences overlay to support discourse. Furthermore, the combination of cognitive and teaching presences is vital in selecting content. All three of these presences play integral roles for online learning students to fully engage, persist, and succeed in their learning.
As shown in Figure 3, Shea and Bidjerano (2010) introduce a revised CoI model to include learner presence. The authors found that “teaching presence and social presence are significantly correlated with student self-efficacy” (Shea & Bidjerano, 2010, p. 1727). Shea and Bidjerano suggest that self-efficacy is a part of the larger concept of learner self-regulation which they reference as learner presence. Hence, teachers transitioning to instructing online must make the change of incorporating social, teaching, cognitive, and learner presences within virtual instruction rather than fully in person.

Shea and Bidjerano (2009) describe social presence as involving instructors and students feeling comfortable with communicating with each other online. Social presence provides the foundation for students to feel comfortable interacting. Instructors being actively involved with discussions and incorporating scaffolding questions provides teaching presence (Shea & Bidjerano, 2010). This presence may be integrated into a high school online learning course in a multitude of ways. Students benefit from social presence both in their virtual and physical environments. Online instructors and facilitators need to find and incorporate ways to make their virtual courses a comfortable social environment for students. Students may also find extended social support within online social networking sites that are available only to class members.

Chen and Wang (2009) studied how student social interactions within high school online discussion forums had an effect on their collaborative and academic learning. They found the majority of posts involved students having coordination and social talk to supplement content learning. When the high school students were asked which postings were most valuable, they marked almost one quarter of the postings the researchers had categorized under coordination or social talk to be the ones most helpful to them. Furthermore, Haavind (2007) found instructor social postings to be helpful referring to one example as being “reassuring” (p. 44) to the student.
Hence, online learning instructors need to be supportive of social talk within discussion threads as this has been found to be an essential component for productive discussion.

Cognitive presence is seen by students thinking and applying their learning (Shea & Bidjerano, 2010). Garrison, Anderson, and Archer (2001) state that cognitive presence “focuses on higher-order thinking processes” (p. 8). Critical thinking, which involves “deep and meaningful understanding” (p. 8) and “content-specific critical inquiry” (p. 8) is the basis for cognitive presence (Garrison et al., 2001).

Furthermore, Shea and Bidjerano found a strong correlation between the CoI framework and student self-efficacy, an individual’s belief in ability to succeed. Self-efficacy is an individual’s “subjective judgment” (p. 723) regarding their degree of competence in performing certain actions or ability to complete particular outcomes (Shea & Bidjerano, 2010). The authors propose self-efficacy to be “one component of the larger construct of self-regulated learning (learner presence)” (p. 1727).

Similarly, Chen and Wang (2009) found in their study that student coordination and social discussions have a positive significant impact in relation to course content learning. Most high school students experience online learning within a mixture of their online and physical space. They tend to engage in online courses in brick-and-mortar high schools. In de la Varre, Keane, & Irvin’s (2010) study, onsite facilitators were present in the classrooms while students participated in courses with online instructors. This provides an opportunity for on-site facilitators to engage the students socially (de la Varre et al., 2010). Furthermore, when family and community members provide social support to students, students have a higher chance at being successful online learners (Casey & Evans, 2011).
High school students benefit in online learning courses when they receive social support from school district personnel. This is especially true for students enrolled in small, rural school districts. Students are accustomed to communicating and interacting with their teachers and peers in the classroom (de la Varre et al., 2010). Thus, simulating this environment to the best extent possible will maximize online learners’ experiences.

### 2.2.2 Technology Acceptance Model (TAM)

Several researchers have based their studies on Davis’s (1989) Technology Acceptance Model (TAM) to gain a greater understanding of how users of new technologies perceive ease of use and usefulness of these. Whereas perceived ease of use pertains to the degree an individual believes their effort needs to be in order to use certain technologies, perceived usefulness represents their feelings toward how the technologies may improve their ability to accomplish related goals (Chen, 2014; Goh, Hong, & Gunawan, 2014; Kear et al., 2014).

Goh et al. (2014) applied the Technology Acceptance Model (TAM) framework developed by Fred Davis (1989). As cited in Davis, Bagozzi, and Warshaw (1989), the TAM was developed based on Fishbein and Aizen’s (1975) “theory of reasoned action (TRA)” addressing “predicting and explaining behavior across a wide variety of domains” (p. 983). The TAM focuses specifically on “computer usage behavior” (p. 983). The TAM may be used to examine perceived ease of use and usefulness and how these factors relate to attitude, behavioral intention, and actual computer system use. I focused on beliefs and perceptions of experiences of high school blended learning teachers and made use of the TAM to inform my research while seeking to understand the process teachers go through in transitioning to blended learning instruction.
2.2.3 Concerns Based Adoption Model (CBAM)

<table>
<thead>
<tr>
<th>Level of Use</th>
<th>Behavioral indices of level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Users</td>
<td></td>
</tr>
<tr>
<td>VI</td>
<td>Renewal: The user is seeking more effective alternatives to the established use of the innovation.</td>
</tr>
<tr>
<td>V</td>
<td>Integration: The user is making deliberate efforts to coordinate with others in using the innovation.</td>
</tr>
<tr>
<td>IVB</td>
<td>Refinement: The user is making changes to increase outcomes.</td>
</tr>
<tr>
<td>IVA</td>
<td>Routine: The user is making few or no changes and has an established pattern of use.</td>
</tr>
<tr>
<td>III</td>
<td>Mechanical use: The user is using the innovation in a poorly coordinated manner and is making user-oriented changes.</td>
</tr>
<tr>
<td>Non Users</td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>Preparation: The user is preparing to use the innovation.</td>
</tr>
<tr>
<td>I</td>
<td>Orientation: The user is seeking out information about the innovation.</td>
</tr>
<tr>
<td>0</td>
<td>Nonuse: No action is being taken with respect to the innovation.</td>
</tr>
</tbody>
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Figure 4: CBAM - Levels of Use


Additionally, Hall, Chamblee, and Slough (2013), Hosman and Cvetanoska (2013), Khoboli and O’toole (2011), Saidin and Sam (2013), and Saunders (2012) have studied the use of Hall and Hord’s (2001) Concerns Based Adoption Model (as cited in Saidin & Sam, 2013) to learn more about how teachers’ practice and feelings develop during the implementation of a technological innovation. The CBAM theoretical framework encompasses Stages of Concern (SoC), Innovation Configuration (IC), and Levels of Use (LoU). Figure 4 depicts the Levels of Use portion of the model. The goal of the CBAM is to assist with understanding the process people may progress through when adjusting to an innovation.

The SoC in Hall and Hord’s (2001) Concerns Based Adoption Model (as cited in Saidin & Sam, 2013) addresses the concerns and beliefs individuals have when being presented with adopting an innovation (Hall, Chamblee, & Slough, 2013; Hosman & Cvetanoska, 2013). The LoU provide insight into the actions individuals take when experiencing change (Hall, Chamblee, & Slough, 2013; Saidin & Sam, 2013). Saidin & Sam (2013) state that the LoU pertain to people’s knowledge and skill level. Hence, the LoU demonstrates the physical steps individuals partake during change.
The LoU component is balanced by the Innovation Configuration (IC) and Stages of Concern (SoC) portions of the CBAM. The realization of how an innovation is being introduced is referenced by the term, Innovation Configuration (Hall & Hord, 2001 as cited in Lambert, Velez, & Elliott, 2014). Finally, the Stages of Concern demonstrate the feelings people experience as they encounter change (Hall et al., 2013; Hosman & Cvetanoska, 2013). All informational areas together empower people managing an innovation to assist others with accepting the change (Hall et al., 2013; Hosman & Cvetanoska, 2013; Saidin & Sam, 2013). Together, these produce diverse perspectives regarding how individuals maneuver through innovations.

The findings from CBAM-based studies inform practices schools may engage in to improve the change process teachers encounter as they navigate adopting innovations into their teaching (Hall et al., 2013; Hosman & Cvetanoska, 2013; Saidin & Sam, 2013). As cited in Hosman and Cvetanoska (2013), Rogers’ (1983) diffusion of innovation theory addresses “change processes and constructs” (p. 30). However, Hosman and Cvetanoska chose to apply CBAM as this permitted them to focus on the teachers, the predominant determinants in the change process.

Because teachers have been found to be so influential in the implementation of instructional technology innovations (Goh, Hong, & Gunawan, 2014; Hosman & Cvetanoska, 2013; Khoboli & O’toole, 2011), I was interested to learn how high school blended learning teachers perceive adapting to online/blended teaching. Although Davis’s (1989) TAM, Hall and Hord’s (2001) CBAM (as cited in Hosman & Cvetanoska, 2013), and Rogers’ (1983) diffusion of innovation theory all apply to the change process of instructional innovations, they do not
specifically address the change process regarding high school blended learning teachers transitioning from face-to-face teaching to virtual teaching.

2.2.4 Disruptive Innovation Theory

The disruptive innovation theory involves making change to the extent that the new method of approaching a solution “supplants the prior approach” (Christensen et al., 2017, p. 85). Providing teachers with computers for use with students is not equivalent to teachers changing their mode of instruction to student-centered. The trend has been for teachers to use classroom computers on a limited basis to supplement their traditional teaching methods (Christensen et al., 2017).

As a disruptive innovation, teachers will need to move toward student-centered learning and project-based teaching with computers as a replacement to lecture-based teaching in a full face-to-face format (Christensen et al., 2017). Christensen et al. state that this transition is made up of two stages: first, computer-based learning; second, student-centric technology. The authors describe student-centric technology to be a method of teaching specific to individual student needs; thus, replacing tutors.

Christensen et al. (2017) explain a variety of ways in which the disruptive innovation of computer-based student-centric instruction may address societal needs. This instruction will assist in credit accrual, credit recovery, and advanced placement courses. Christensen et al. (2017) explain two of the major “nonconsumption” (p. 93-94) opportunities to be classes for students to make up credits and the reduction in offerings of “nice-to-have” (p. 94) classes, such as humanities, languages, economics, and statistics. Thus, this can lead to higher high school graduation rates and opportunities for students to enroll in a greater variety of courses.
There are four factors that Christensen et al. (2017) state will “drive the substitution” (p. 100) from traditional teaching to student-centric learning. The first one is that online learning technologies will continue to improve such as having enhanced video, audio, and interactive features. Second, learning pathways will be better able to be addressed in student-centric learning. The authors state a third factor is teacher shortages that are continuing to become more intense. Finally, Christensen et al. (2017) explain that declining costs are the fourth factor that will assist with this transition.

Furthermore, Christensen et al. (2017) believe online student-centric lessons will provide more fluid means of assessing students and providing individualized assistance. They state these can be “interactively and interdependently woven into the content-delivery stage” (Christensen et al., p. 111) rather than at the end of the teaching section. The vendors can also use this information to improve their products for addressing diverse learners (Christensen et al., 2017).

2.2.5 Related Foundational Theories

Along with the reference to these theories in my research development, I considered the related foundational theories of Dewey (1938/2012), and Vygotsky (1978). These theories involve active learner participation. I found Dewey’s theory of student learning through experiences being very informative to online learning as student engagement is essential. Furthermore, as cited in Shabani, Khatib, and Ebadi (2010), Vygotsky (1978) introduced the concept of the zone of proximal development (ZPD), referencing student ability to increase personal learning with others’ guidance. This idea is present in CoI engagement with students having access to teachers and peers to assist with growing their understanding of course content and concepts. Additionally, Dewey provides the foundation for the CoI framework through the
lens of experiential learning. Students who are active contributors are directly involved with their learning progression.

Previous studies I have found on online learning regarding student engagement and persistence predominantly have provided research results regarding post-secondary learning. When teachers increase student participation in the learning process, there will be a higher likelihood of persistence and success. This will contribute to students reaching their goal of graduating from high school.

2.3 Student Engagement and Motivation: Online Activities

A variety of technology tools may be incorporated into online learning with the goal of increasing student engagement and motivation. Several researchers found teachers and students felt positively regarding integrating Web 2.0 tools, such as wikis, YouTube, Skype, Google Docs, discussion boards, and blogs into online learning courses (Barbour & Bennett, 2013; Jahnke, 2010; Kear et al., 2014; Kerr, 2011; Suwantarathip & Wichadee, 2014; Zhou, Simpson, & Domizi, 2012).

Kerr (2011) conducted a multiple case study to learn about the approaches of three online high school social studies teachers to online learning. The participants taught online courses in diverse school districts. Kerr explored how the teachers made use of online tools to provide active, constructive, intentional, authentic, and collaborative learning. Although all of them incorporated asynchronous and synchronous online tools, they approached instruction using different methods. Asynchronous online learning involves cooperative learning which provides time for individuals to reflect and think of a response before replying (Haavind, 2007). On the other hand, synchronous communication involves students and teachers interacting in real time
or having the potential to do so. This may involve either two-way or one-way communication (Hannum, 2009).

Whereas one teacher in Kerr’s (2011) study focused on the use of discussion boards and blogging, another implemented project-based learning. A third teacher used the course management system, Desire2Learn. Kerr categorized the online tools used by purpose: communicative, content, or project management and used teacher interviews, documents, observations, field notes, and a student survey for data collection. While Kerr found student-to-teacher virtual interaction, student-to-student correspondence was limited. Hence, Kerr concluded online learning should provide for peer student and content-based learning as well as make use of online tools for “meaningful learning” (p. 243).

Jahnke (2010) conducted her Web 2.0 research on high school student perceptions about the use of online discussion forums. Students were provided with an online discussion forum to discuss deciding on an essay topic and related informational resources. Jahnke arrived at four major themes: interactivity, group knowledge construction, access to view recorded thinking, and online identity awareness. During interviews, the students reported the benefit of interactivity to be the most important element in their discussion forum experiences. In addition to specifying the importance of teachers interacting in the boards, too, the students shared the importance of having social activity to balance academic engagement (Jahnke, 2010).

The students in Jahnke’s (2010) study acknowledged they increased their content knowledge by having the benefit of learning from other students’ perspectives and experiences within discussion board interactions. The students shared enjoying having time to think before replying, the ability to return to prior postings, and having a well-designed structure. However, they felt alienated if their posts lacked responses. The students also recognized the value of
writing in a manner that reflected themselves without the benefit of non-verbal cues (Jahnke, 2010).

Kear et al. (2014) also researched student and teacher perspectives in university online learning; however, they focused on the use of wikis in virtual group projects. A wiki provides a centralized online resource in which people can work collaboratively and include historical audit trails (Kear et al., 2014). The authors applied Davis’s (1989) TAM to find the perceived usefulness and ease of use of both perspectives regarding using online collaborative technology for group assignments.

The vast majority of students in Kear et al.’s (2014) research found the wikis to be easy to learn and useful for collaborative learning. Students perceived having a central location for their collaborative work to be beneficial although limited functionalities of editing the wiki content were perceived as reducing their ease of use. The tutors believed the wikis contributed positively to student participation in group work and to monitor student work. In contrast, Kerr (2011) found low student-to-student interaction with online class discussion boards in her research. Kear et al. concluded that usefulness was the most significant factor regarding teacher acceptance of using wikis. In my research, I also sought to learn factors that relate to teacher acceptance of online instruction.

Additionally, Barbour and Bennett (2013) studied perceptions of online college teachers to New Zealand students in rural and isolated areas. The researchers conducted a case study to learn about the learning curve teachers experience as they transition to providing online instruction. Along with providing access to their virtual classrooms, the teachers participated in an online survey and semi-structured interviews (Barbour & Bennett, 2013).
As found in Kear et al.’s (2014) research, the teachers in Barbour and Bennett’s (2013) study enjoyed virtually interacting with the students. However, the teachers expressed the need for ongoing professional development regarding the pedagogy of teaching online. The Web 2.0 tools were often challenging for teachers to learn and use for instruction. They were pleased with the 2-day conference and video-conferencing to receiving additional training (Barbour & Bennett, 2013). Similarly, the New York State Online Learning Advisory Council (2015) includes the fourth recommendation of developing “teacher pre-service experiences in online and blended learning” (p. 26).

Thus, Barbour and Bennett (2013) recommend providing relevant professional development throughout the school year and having funding for online teachers to attend conferences and network. The authors advise that online learning administrators routinely seek the perceptions of all involved to revisit and revise online courses accordingly. I pursued gaining the insight of blended learning instructor perceptions including pertaining to professional development.

Murphy et al. (2011) studied the perspectives of 42 online high school teachers in Canada and found that predominantly teachers used asynchronous communication and supplemented this with synchronous communication. The researchers also advised professional development being offered to assist teachers with teaching online. Murphy et al. suggested providing professional development regarding the use of synchronous tools may assist teachers with offering more opportunities for real-time interaction.

The Institute of Education Sciences, IES, (2015) published a study regarding professional development of online teachers in Wisconsin. They found that all of the teachers received technology instruction. Half of the respondents reported receiving instruction in classroom
management and instruction, which included methods of student engagement and getting students to finish the course. The participants reported their greatest challenges to be with student engagement and perseverance. The type of professional development they participated in the least was in “supporting students with special needs” (IES, 2015, p. 6).

Regarding the type of professional development, 90% of the 48 participant respondents in the ies (2015) study attended a multiday workshop or conference and 77% were involved in ongoing training sessions. Furthermore, 42% of the teachers shared they received peer coaching or mentoring and the lowest type of professional development reported was the observation of a colleague at 17%. Hence, the majority of professional development obtained was in formal settings.

Zhou et al. (2012) as well as Suwantarathip and Wichadee (2014) researched college student use of Google Docs for academic work. Google Docs is a Microsoft version of free online software that may be used for virtual collaboration (Suwantarathip & Wichadee, 2014). Both studies found this tool to assist with increasing student writing collaboration and influencing student learning.

Suwantarathip and Wichadee (2014) conducted their research with post-secondary Thai students enrolled in an English course involving “reading and writing logical responses to texts” (p. 150). One of the researchers taught both the face-to-face group section and the Google Docs section. Based on Vygotsky’s (1978) theoretical framework, student learning was researched via writing tests, a survey regarding student feelings about using Google Docs for collaboration, and a questionnaire about how they work collaboratively (Suwantarathip & Wichadee, 2014).

Although findings from Suwantarathip and Wichadee’s (2014) study did not demonstrate a significant difference in student learning with Google Docs as compared to in-person
collaboration, student attitudes toward using Google Docs for collaborative writing were positive. Students especially reported that Google Docs helped with idea sharing, increasing student-to-student interaction, and stimulating collaborative learning. Furthermore, students reported positively regarding Google Docs increasing their motivation for studying in the course (Suwantarathip & Wichadee, 2014).

Finally, the students in Suwantarathip and Wichadee’s (2014) Google Docs group rated their collaborative experiences as “easy (82.5%) and very easy (17.5%)” (p. 153). Student responses about their group performance ranged from “moderate” to “very good” (p. 153). Hence, their findings suggest students placed high value on peer relationships and the ease of using Google Docs led to students being more motivated to learn. Similarly, I sought to discover teacher perceptions of how online tools may assist with student motivation.

Participants in Zhou et al.’s (2014) study were given two collaborative writing assignments to complete in randomly-created groups of three to four students. One assignment did not incorporate using Google Docs while the other assignment did. Both assignments were preceded with a class lecture. Students completed evaluation forms on their group members’ contributions and on their reflections of both assignments (Zhou et al., 2014).

Zhou et al. (2012) discovered that 85% of the students rated their use of Google Docs for collaborative writing as either “positive” or “very positive” (p. 362). Around four-fifths of the students perceived Google Docs to contribute positively toward group collaboration (Zhou et al., 2012). Hence, the authors concluded the use of Google Docs for collaborative writing to be beneficial and have an impact on how students learned (Zhou et al., 2012).

Regarding another method of Web 2.0 tools, Carr and Bossomaier (2014) studied the implications of game-based learning with 67 students in Higher School Certificate (HSC) high
school students ranging in age from 16 to 18 and university students ranging in age from 17 to 45. The authors used a game design, named Relativistic Asteroids, which was based on the classic video arcade game, Asteroids. The students also had face-to-face instruction.

The teachers in Carr and Bossomaier’s (2014) study responded positively to the benefits of using the Physics game for student learning. In general, they found this was useful in starting classroom discussions and demonstrating concepts. One teacher who was interviewed explained that she believed her students would benefit further from having more time to “explore and reflect” (Carr & Bossomaier, 2014, p. 1059). Carr and Bossomaier concluded that the use of the virtual game provided student engagement and motivation.

Furthermore, Icard (2014) found game-based learning to be beneficial based on several related article reviews. She describes “enticing” qualities of games to be “competition and engagement” (Icard, 2014, p. 40). Moreover, Icard describes virtual games to be a “safe environment of play which allows students to learn” (2014, p. 40). Icard specifically describes the computer game, Kahoot!, as one that permits for teachers to create questions along with answers and provides the ability for students to play the game over the Internet and compete for points.

The Web 2.0 tools resulted in contributing to a degree of learning interactivity within online spaces (Barbour & Bennett, 2013; Carr & Bossomaier, 2011; Icard, 2014). Kear et al., 2014; Kerr, 2011; Suwantharathip & Wichadee, 2014; Whitton, 2012; Zhou et al., 2012). Some obstacles reported with using Web 2.0 tools included the technological limitations of the tools themselves, such as wiki editing capabilities (Barbour & Bennett, 2013; Kear et al., 2014). Teacher demonstration and instruction to students regarding the use and navigation of Google Docs as well as student practice use should be performed prior to actual student use of Google
Docs for completing collaborative assignments (Suwantarathip & Wichadee, 2014; Zhou et al., 2012).

Halili and Zanidin (2015) studied the impact of flipped learning in regards to student engagement. The authors discuss that flipped learning involves students listening to class lectures on video prior to coming to class. This provides more class time for student discussion and exploration of content. In this way, the students have more accountability for their learning and are able to learn at their own pace. Butt (2014) studied student perceptions of flipped learning in their university final-year actuarial course in Australia. Through surveys, the students reported favorably on having flipped learning in the course as many reported they learn best by participating in learning activities. This provided more time for them to engage in their learning. The students ranked their ability to learn from activities over reading and listening to someone talk.

Thus, the integration of Web 2.0 tools in online learning has been found to contribute toward student interaction and motivation with virtual lessons (Barbour & Bennett, 2013; Jahnke, 2010; Kear et al., 2014; Kerr, 2011; Suwantarathip & Wichadee, Zhou, Simpson, & Domizi, 2012). While an increase in student activity with Web 2.0 tools was found as an area for growth (Kear et al., 2014; Kerr, 2011), Barbour and Bennett (2013) reported a need for online instructional professional development on the pedagogical aspects. Suwantarathip and Wichadee (2014) and Zhou et al. (2012) specifically found Google Docs to be beneficial in supporting student collaborative learning. In my research, I focused on teacher beliefs and perceptions of experiences while also inquiring about teacher recommendations to improve student engagement activities in blended learning courses.
2.4 Learning Management Systems

Research has also been conducted focusing on online teacher and student beliefs and perceptions of experiences with using online learning platforms (Chen, 2014; Emelyanova & Voronina, 2014; Goh et al., 2014; Russell & Curtis, 2013; Tshabalala, Ndya-Ndereya, and van der Merwe, 2014). Regardless of the method, the authors were interested in discovering how the learning management systems (LMS) were used for student learning. While Chen, Emelyanova and Voronina, and Goh used the TAM to study perceived use and perceived usefulness of the systems, Russell and Curtis researched how class size may impact learning within an LMS environment.

Emelyanova and Voronina (2014) and Goh et al. (2014) focused on perspectives of online learning from the viewpoint of the LMS. Emelyanova and Voronina state the process in which stakeholders accept and perceive a Learning Management System (LMS) is directly related to the success and efficiency of the system being used. Whereas Emelyanova and Voronina studied teacher and student perceptions of incorporating LMS, Goh et al. applied the TAM to determine perceived ease of use and usefulness of Moodle by online teachers and how these factors relate to attitude, behavioral intention, and actual technology usage.

Emelyanova and Voronina (2014) conducted their study of teacher and student perspectives of LMS by administering surveys in undergraduate and graduate programs. Although overall the teachers and students in Emalyanova and Voronina’s research perceived the system as user friendly, only 33% of the instructors planned on incorporating the LMS into their instruction (p. 279). Additionally, many students perceived being evaluated in a face-to-face environment to be preferred because of the benefit of seeing the teachers’ reaction to their performance. Hence, Emelyanova and Voronina concluded the human factor is vital in the
implementation of the LMS and that an engaged and innovative approach is desirable. I sought to learn ways teachers perceive how their online instruction incorporates interaction.

Goh et al.’s (2014) applied the TAM in their study to learn about the technology acceptance process online teachers went through with the LMS, Moodle. A survey was used to discover lecturers’ perceived ease of use and perceived usefulness of Moodle. Goh et al. (2014) found that most of the lecturers did not perceive Moodle as easy to use. The lecturers perceived Moodle as lacking in organization. This led to the instructors expressing feelings of frustration with using Moodle (Goh et al., 2014). Similarly, only around one-third of the online teachers in Emalyanova and Voronina’s (2014) study expressed a desire to continue using their LMS with their students.

The lecturers in Goh et al.’s (2014) study were found to have mixed perspectives regarding perceived usefulness. As Emalyanova and Voronina’s (2014) participants reported regarding LMS usefulness, the lecturers in Goh et al.’s study found Moodle to primarily be useful in housing content for students to access. They did not believe the communication section of Moodle led to engaging student discussions. Goh et al. (2014) believed related university training and workshops would be helpful in providing instructors with more knowledge about Moodle. I also sought how instructors perceive the usefulness of their LMS as well as ways they are making use of the features.

Whereas Goh et al. (2014) incorporated the TAM in their research on teacher acceptance of a learning management system, Chen (2014) applied the TAM to explore technology acceptance and self-efficacy of post-secondary students learning English as a foreign language. This was conducted in regards to online learning of English for Occupational Purposes (EOP). The students participated in their English course through a new virtual learning platform. The
survey in Chen’s (2014) study consisted of three parts: student background information, self-efficacy in an Internet-based learning environment (SIBLE), and technology acceptance.

Chen (2014) concluded the TAM technology acceptance factors of perceived ease of use and perceived usefulness to be inter-related. This was also seen in Goh et al.’s (2014) research with the lower level of ease of use reported with Moodle impacting instructor perspectives on the usefulness of the product. Moreover, Chen’s survey analysis revealed a strong correlation between self-efficacy and perceived ease of use and perceived usefulness.

Additionally, Chen (2014) found external factors to only be significant in relation to students’ perceived ease of use. Chen stated the results demonstrate external factors, such as Internet access on a student mobile phone, have an effect on the ability for students to accept a new technology learning tool. Chen studied higher education student perceptions whereas Goh et al. (2014) focused on university level teacher perceptions.

In addition to using the TAM to inform teacher perceptions and experiences of accepting a technology innovation, Tshabalala et al. (2014) incorporated Rogers’ (1983) Innovation Diffusion Theory (IDT). The researchers sought to learn the perceptions faculty at a developing university in South Africa had regarding implementing blended learning and to learn what factors may be causing challenges (Tshabalala et al., 2014).

Tshabalala et al. (2014) listed the categories of people who adapt to innovation with the least resistance to the most resistance: innovators, early adopters, early majority, late majority, and laggards. As cited from Rogers (1983), the categories of early majority and late majority equally represent a total of how 68% of people respond to change (Tshabalala et al., 2014, p. 104). Whereas people classified as being in the early majority are careful and not willing to take risks,
people in the late majority are apprehensive of change and challenging to influence (Tshabala et al., 2014).

Most of the participants in Tshabala et al.’s (2014) study proved to be slow adapters to innovation. Overall, challenges of providing blended learning included lack of policy, faculty support, technological and computer skills, adequate student computers, and having a large class size. Hence, Tshabala et al.’s study demonstrates the need for more research regarding the experiences teachers encounter when first beginning to deliver online/blended courses.

Russell and Curtis (2013) studied teacher and learner perceptions regarding university online language courses conducted with both large and small class sizes. The students and teachers perceived class size to be an important determinant regarding the quality of instruction. Teachers believed a challenging component in online language courses was the increased feedback time to students because of asynchronous communication. Additionally, language teachers in the study perceived their evaluation of student oral submissions to be less effective and possibly inaccurate as compared to face-to-face evaluation. Russell and Curtis attribute this to factors such as extended time between submission and evaluation and/or technological malfunction.

Along with teachers and students feeling the online learning environment provides more flexibility, the instructors in the study conducted by Russell and Curtis discussed how the virtual environment required full student participation in the language exercises. However, when online class size becomes too large, teachers and students believed instruction was lacking. This concurred with the finding in Tshabala et al.’s (2014) study. Russell and Curtis express that future related research is needed about online language courses and class sizes. By conducting
my research, I learned about teacher perceptions of online courses in general and teacher beliefs about students talking within the same class and among multiple classes.

Hence, Chen (2014), Emelyanova and Voronina (2014), Goh et al. (2014), and Russell and Curtis (2013) gained insight into the use of LMS for student learning by researching teacher and student perspectives. A need was found for the LMS to be used more for engagement rather than with storing and retrieving documents (Emalyanova & Voronina, 2014; Goh et al., 2014). Additionally, Chen (2014) found student self-efficacy to highly impact students’ perceived use and perceived usefulness of their LMS and Russell and Curtis (2013) and Tshabala (2014) found class size as another aspect to consider for courses using an LMS. As I conducted my research, I sought additional teacher beliefs regarding ease of use and usefulness of their LMS and how teachers perceive using these in their blended learning courses.

### 2.5 Student Technology and Literacy Skills

Although current high school students have grown up with technology and have therefore been referred to as being “digital natives,” the students may not be as well-versed in technology skills overall as may be generally perceived. Brumberger (2011) explains this is in reference to current college students who have been exposed to many new technologies and therefore are often assumed to have advanced skills, such as in the areas of technology and visual communication. Furthermore, student literacy skills play a role in ability to participate in blended learning courses.

Brumberger (2011) found in her study that college students were not as technologically savvy as one may presume. However, she found that although these students are often referred to as “digital natives,” many lack skills in “visually-oriented technologies and their interpretation of visual material” (Brumberger, 2011, p. 17). Brumberger administered a survey to Virginia
Tech students who ranged in age from 18 to 23. These were all undergraduate students enrolled in five different writing courses.

Brumberger (2011) included survey questions on a number of different technology topics. Almost three-fourths of the students responded they used Google maps for directions. However, only one-third of these students relied on the virtual rather than the printed paper directions. Similarly, student use of digital images was found to be limited. While the students did take photos and uploaded them to social media or sent them via e-mail, only 14% of the students reported that they “frequently edited or modified their photos” (Brumberger, 2011, p. 28).

Furthermore, only 8% of the survey participants stated that they “frequently download slide designs or templates from the Web” and merely 13% shared they “frequently design their own slides or templates” (Brumberger, 2011, p. 30). Moreover, slightly less than half of the students stated they bring images into their PowerPoint presentations. More than half, 60%, of the students had never created a website in any way (Brumberger, 2011, p. 31-32) and only 15% of the students self-reported being skilled at website creation (p. 31).

Additionally, high school literacy skills have also been found to be in need of improvement. Levine and Horton (2015) researched ways to assist “struggling high school readers” (p. 125). They conducted their study at a large urban Midwest high school in which 86% of the students were of low socio-economic status. Approximately 80% of the students were Latino, 10% African American, and 10% Caucasian or Asian.

Levine and Horton’s (2015) study involved a literacy intervention in a Senior English class with 28 students. The teacher was trained in implementing the affective evaluation strategy. For example, the students were to evaluate the affective perception of celebrity stage names with “Foxx” could suggest “cunningness” or deceit” (Levine & Horton, 2015, p. 131).
Semi-structured student interviews took place in Levine & Horton’s (2015) research that were approximately half an hour in length. One was before the intervention and the other after. There were also five designated expert adult readers. The authors found that student reading through an “affective lens” (Levine & Horton, 2015) assisted the students with their connection and integration of details in the text. They were also able to relate better to characters’ thoughts and feelings. Hence, Levine and Horton did find some students at the high school level to have literacy challenges and discovered a strategy to assist.

Moreover, Premont et al. (2017) conducted research to address assisting with improving high school student writing skills. Their study purpose was to learn about the impact of using picture books in high school classrooms in regards to improving “word choice, sentence fluency, and conventions” (Premont et al., 2017, p. 290). There were twelve participants from two low-performing tenth grade English classes. The authors ranked these students according to their English abilities as high, middle, or low (Premont et al., 2017).

The teachers in Premont et al.’s (2017) study used an inquiry-based approach incorporating reading aloud from picture books. The research took place at a suburban high school; however, this included students from rural nearby communities. The students referenced these picture books as they worked on enhancing their narrative writing skills. Premont et al. analyzed the students’ narrative writings along with their self-report of their experiences with using picture books as mentor texts. The authors concluded the picture books assisted secondary students of all ability levels improve their writing skills in all the areas of word choice, sentence fluency, and conventions such as colons and semicolons (Premont et al., 2017).
2.6 Social Aspects of Online/Blended Learning

Researchers have found the practice of integrating social aspects into online learning has led to increased student engagement and success (Barbour & Hill, 2011; Barbour & Siko, 2012; Borup, Graham, & Velasquez, 2013; de la Varre et al., 2010; Hawkins, Graham, & Barbour, 2012; Lewis et al., 2014; Oliver & Kellogg, 2015; Velasquez, Graham, and Osguthorpe, 2013). Researchers have studied social interaction with various student populations such as rural students (de la Varre et al., 2010 & Barbour & Hill, 2011) and students with exceptional learning challenges (Barbour & Siko, 2012; Lewis et al., 2014, Oliver & Kellogg, 2015). Additionally, Borup et al. (2013), Hawkins et al. (2012), and Velasquez et al., 2013 studied social connection perceptions between teachers and students and among the students.

2.6.1 Online/Blended Learning for Rural Students

dela Varre et al. (2010) and Barbour and Hill (2011) conducted research in regards to social interaction in rural, online school environments. Within both studies, the students had some level of access to onsite teachers. Additionally, the authors studied the occurrence of student engagement.

While all students have been found to benefit from receiving social support, de la Varre et al. (2010) and Barbour and Hill (2011) have found this type of assistance has an especially significant effect for rural students. These students are accustomed to a high degree of communicating and interacting with their teachers and classmates. Some students express a feeling of isolation in online classes, which may contribute to students leaving online courses prior to completion (de la Varre et al., 2010).

dela Varre et al. (2011) studied how schools can assist students with social interactions in online courses using learner-centered principles (LCP). On-site facilitators in the intervention
group were provided basic instruction over the Internet on such topics as navigating Blackboard and guiding students with online etiquette and plagiarism avoidance. The facilitators learned how to support students by motivating and encouraging the students (de la Varre et al., 2011).

The goal of de la Varre et al.’s (2011) research was to learn how expanding the duties of on-site facilitators to provide emotional and motivational support to students rather than only technical and basic assistance may improve high school online learning program success. All the participants had the opportunity to express their perceptions related to having on-site facilitator social-emotional involvement. The main themes that emerged involved the role of facilitators, classroom strategies, facilitator online scenario-based training sessions, student communication with each other, communication between facilitators and instructors, student communication with instructors, beliefs about student experiences, and student benefits received over time (de la Varre et al., 2011).

Barbour and Hill (2011) also conducted a qualitative study regarding teacher and student experiences with online learning in a rural school setting. In a Canadian virtual school environment, the students and in-school teachers were interviewed and observed. The purpose of this study was to discover more about the student experiences during synchronous and asynchronous times as well as students’ approach to gaining content-based assistance (Barbour & Hill, 2011).

Barbour and Hill (2011) found the predominant portion of the online learning courses during which the students received instruction and exhibited the most engagement was within the synchronous times. Hence, as in de la Varre et al.’s (2011) research, Barbour and Hill found evidence regarding the importance of online students developing social interaction. Although the Centre for Distance Learning and Innovation (CDLI) provided multiple means for students to
receive content-based assistance in Barbour and Hill’s study, students reported receiving this primarily from their in-school student peers, online teachers, and in-school teachers. In some cases, students created and attended informal evening study groups (Barbour & Hill, 2011).

Barbour and Hill (2011) made three overall conclusions that they found would be helpful to improve with CDLI courses: more engaging asynchronous instruction, increasing community feeling, and informing students of their content-based sources on a frequent basis. Likewise, de la Varre et al. (2010) emphasized the need for a community presence in online learning courses. This idea of a community presence is further delineated in Shea and Bidjerano’s (2009) research stating the presences of cognitive, social, and teaching in an online learning course for a community of inquiry. Thus, I conducted my research on blended learning teacher beliefs, perceptions of experiences, and recommendations to incorporate discovering ways teachers may be providing for social interaction within their blended learning courses.

2.6.2 Online/Blended Learning for Students with Exceptional Learning Challenges

Barbour and Siko (2012) conducted a case study on one high school student who was classified as being “at-risk” (p. 1) and enrolled in an online course. The researchers state they performed this study because students with academic challenges are often excluded from online learning research. Barbour and Siko arrived at three all-encompassing conclusions regarding offering online learning to at-risk students. First, the online instruction delivery was not motivating to the participant student. Second, at-risk students often live in economically disadvantaged households so tend to have a lower level of technology access than their peers. Finally, many learning habits are made by students prior to enrolling in online learning courses as was the case with the participant student (Barbour & Siko, 2012).
Hence, Barbour and Siko (2012) recommend future related research to address student support systems for online learning and the degree to which students find these helpful, if at all. Also, they advise for additional research to learn why students do not use supports in place even when assistance is needed. Thus, I discovered more about student support systems and student use of these in blended learning through the viewpoint of blended learning high school teachers.

Lewis et al. (2014) also conducted their online learning research on “at-risk” students. The authors studied experiences of students enrolled in the North Carolina Virtual Public Schools (NCVPS) credit recovery (CR) and occupational course of study programs (OCS). Whereas the CR students were enrolled to earn credit for previous courses, the OCS courses were for students with either an “academic disability or physical impairment” (Lewis et al., 2014, p. 2). While students reported the ability to pace their learning and work ahead as benefits, they stated responsibility and time management to be significant obstacles. The students expressed the need for more self-motivation (Lewis et al., 2014).

Hence, Lewis et al. (2014) concluded the North Carolina online high school programs needed to increase supports, such as having school personnel provide guidance and monitoring and having students go through an orientation. Less than half of the participants stated they were given support during their first online learning course. Barbour and Siko (2011) also stated support is a must for at-risk learners. Lewis et al. (2014) accentuate making the “students feel supported and welcomed” (p. 6) and not have technology be an obstacle.

Students in Lewis et al.’s (2014) study were seen to perform best when teachers assisted them individually, ensured content mastery, responded to questions, and provided motivation. Similarly, Barbour and Siko (2012) reported in their study that the online course delivery lacking motivation contributed to the student not taking much academic action. Furthermore, Lewis et
al. advise online learning teachers to incorporate a variety of instructional methods, such as audio, video, and interactive discussions. I have added to this research by finding out the assistance and instructional methods my participant blended learning teachers are incorporating.

Oliver and Kellogg (2015) studied the experiences of online credit recovery teachers and their at-risk students. The main reason the credit recovery students reported they were not initially successful in a traditional class was their self-regulated learning challenges. Secondarily, they identified teaching issues. Most students stated their online credit recovery courses assisted in both these areas (Oliver & Kellogg, 2015).

The online credit recovery students in Oliver and Kellogg’s (2015) research acknowledged the benefit of not being as distracted by peers as well as the ability for their parents to monitor work and provide encouragement. As in Lewis, Whiteside, and Dikkers’ (2014) research, the students cited the advantage of self-paced instruction. Oliver and Kellogg (2015) stated the students that their online teachers tended to provide greater support. The teachers reported the benefits to include the ability to provide more individualized instruction and set up the courses in a self-pacing manner. The teachers also cited that the format provided a means of increasing student engagement by having a platform for more instructional strategies and options for integrating Web tools (Oliver & Kellogg, 2015). Contrarily, Barbour and Siko (2011) found the online instructional delivery to be lacking in motivation during their study.

As I studied teacher beliefs and perceptions of experiences with blended learning, I sought to learn more about strategies teachers have implemented to assist with student engagement and self-regulated learning. My research focused on blended learning courses developed for students in credit recovery, credit accrual, and advanced placement courses. I gathered information that will assist regarding improving blended learning high school programs.
2.6.3 Online/Blended Learning: Social Connections

Hawkins, Graham, and Barbour (2012) also conducted a qualitative study to learn more about how teachers view their online teacher role. The study was conducted with the Electronic High School (EHS) in Utah, which offers asynchronous and self-paced courses. The authors used the CoI framework of teacher, cognitive, and social presences to guide their research. All of the eight participant teachers selected were deemed to be highly qualified in their content area and six of these teachers had taken online courses as students.

Hawkins et al. (2012) found the participant teachers felt disconnected from their students, the profession, and online teacher colleagues. Teachers were interviewed eight times over the telephone during a three-month timeframe. The teachers reported feeling predominantly as evaluators. Hawkins et al. state these teacher perceptions are a result of a lack of teacher presence and social presence within the courses.

The teachers in Hawkins et al.’s (2012) research had the opportunity to participate in synchronous professional development sessions offered monthly as well as annual faculty meetings with their peers. However, these experiences did not fulfill all the teachers’ networking needs. Using the CoI framework, Hawkins et al. recommended three actions they believed would improve the virtual learning community.

Hawkins et al. (2012) proposed having a “closed social network” (p. 39) for students and teachers to talk socially and a virtual space for teachers only to discuss topics such as lesson plans. They also advised teachers to increase their interaction with students regarding course content to increase teacher and cognitive presence. Hence, Hawkins et al. stated the need for further research regarding teachers’ feelings of connectedness in the online teaching role. In my
study, I explored teacher beliefs and perceptions of experiences regarding blended learning and teacher opportunities to connect.

Furthermore, Borup, Graham, and Velasquez (2013) and Velasquez, Graham, and Osguthorpe (2013) researched high school teacher perceptions of experiences regarding online instruction within the Open High School in Utah charter school with a focus on the caring perspective. Both studies referenced caring as engrossment, motivational displacement, and reciprocity (as cited in Noddings, 2008). Engrossment represents teachers viewing the course through the student lens whereas motivational displacement describes the practice of individuals performing actions for a person cared for. Finally, reciprocity involves those being cared for responding to the carer.

Borup et al. (2013) were interested in how teachers may create caring relationships with their students virtually. Through 22 interviews with 11 online teacher participants, the authors discovered teachers established a caring relationship with their students through providing personal tutoring, social discussions, and the school’s “shepherding program” (Borup et al., 2013, p. 189).

Borup et al. (2013) found each course began with social dialogue which led to non-academic discussions throughout the course. The “shepherding program” (Borup et al., 2013, p. 189) was created by assigning teachers 20 students to contact on a weekly basis. Interview responses demonstrated that many teachers found the social relationships to be stronger within their online courses than in the physical classroom. The instructors in Borup et al.’s research reported their discussions with students were more effective once teacher and student social presence was achieved. In an effort to enhance social presence, the teachers complemented their
text-based correspondence with asynchronous full class video instruction and synchronous individual student video discussions.

Velasquez et al. (2013) also conducted a study to learn how caring took place in the Open High School of Utah (OHSU). They interviewed teachers and students. The authors believe having a caring relationship pertains to academic and moral development. The case study methodology in Velasquez et al.’s research involved studying perceptions and interpretations of actions.

The themes that emerged in Velasquez et al.’s (2013) study included shared experience, constant dialogue, and attentive observation of student online activity. Additional themes encompassed effective learning environment design, attention to students’ academic needs as well as their overall well-being, and students providing helpful reactions to their teachers. By the learning environment offering flexibility and various assignment options as well as instructing at the students’ level, the students expressed this demonstrated from the start that the teachers cared about them.

The overall conclusion by Velasquez et al. (2013) is that a caring environment has a positive influence on students and teachers. Future related research Velasquez et al. suggest is to see how caring within a technological environment may impact students in their academic and moral development. They also recommend learning about teacher and student perceptions regarding caring in asynchronous communications compared to synchronous ones.

As I conducted my research, I strived to see how teachers may perceive their experiences with teaching partially online to be incorporating caring and how this may factor into their practices regarding student engagement. Because my research intent was regarding blended learning courses, I took into account the needs of a variety of students and how teachers perceive
teaching and learning within their courses. I was able to learn more about teacher perceptions of experiences with their virtual classroom social environment and how they believe this relates to student learning.

2.7 Teacher Perceptions: Virtual Technology Innovations

Research on virtual technology innovations used with face-to-face instruction assists with providing additional information regarding how people perceive their experiences integrating new technology into instruction. These may also be used within online/blended courses. While Tamim (2013) explored teacher viewpoints on using YouTube, Capo and Orellana (2011) conducted their study regarding teacher perception and acceptance of various Web 2.0 technologies. Additionally, Saidin and Sam (2013) conducted their study on teacher perceptions of experiences using Geometer’s Sketchpad and Hosman and Cvetanoska (2013) explored teacher perceptions of experiences in the beginning stages of using technology with instruction in Macedonia. Along with perceptions of experiences being discovered, teachers shared advice for improving the implementation process.

Tamim (2013) sought out to discover United Arab Emirates middle and secondary teacher perceptions regarding the advantages and challenges of using YouTube for instruction and current teaching practices. Overall, teachers reported positive perceptions of integrating YouTube videos. Tanim stated benefits of using YouTube for education to involve supporting the learning process, increasing interest, improving efficiency, and enriching content. The teachers perceived the videos provided better understanding of the material and increased student motivation. Furthermore, they expressed the videos were easy to use and provided students with additional information and examples that related to students’ lives (Tanim, 2013).
Approximately two-thirds of the teachers in Tanim’s (2013) research were actively using YouTube movies during their classes. The English teachers incorporated this instructional technology the most and the math teachers the least. The teachers used YouTube for student upload of movies created by students, presenting content, connecting material with other disciplines, and to gain student attention (Tanim, 2013).

Contrarily, the YouTube video challenges teachers reported in Tanim’s (2013) research related to technical, content, and attitudinal aspects. One challenge was administrators blocking YouTube access. Hence, Tanim concluded YouTube educational use may be improved by increasing administrator understanding and teacher knowledge of various uses beyond content presentation.

Similarly, Capo and Orellana (2011) conducted their study on teacher perceptions and adoption of various social media for instruction: blogs, wikis, social networking, and social bookmarking. The participants were high school teachers in a large southern Florida county. The authors incorporated Davis’s (1989) TAM to discover teachers’ perceived usefulness and ease of use.

Capo and Orellana (2011) found that most of the teacher participants believed integrating Web 2.0 technologies into instruction would increase student-teacher and student-student interactions as well as student learning. However, around half of the teachers stated they did not use Web 2.0 for education and is not in their plans. The authors discovered teacher perception of ease of use was strongly correlated with teacher use. As in Tanim’s (2013) research, Capo and Orellana found that administrators blocked access to social media which the teachers may have been able to use in instruction.
Areas helpful for online teachers to have support are in developing course design, using technology tools, and working with virtual groups (Hathaway & Norton, 2012). Borup, Graham, and Drysdale (2014) identified “teacher engagement” (p. 793) to build upon Shea and Bidjerano’s (2010) teacher presence research. The six teacher engagement roles Borup et al. (2014) found in their study with Open High School of Utah (OHSU) teachers were facilitating discourse, designing and organizing, nurturing, instructing, monitoring, and motivating.

Teachers in Borup et al.’s (2014) study commented that having “predesigned content and learning activities” (p. 799) reduced their workload. OHSU provided the opportunity for teachers to work over the summer to develop the curriculum design. This resulted in the online teachers having the ability to focus more on instruction directly with the students during the school year. Because the design was developed internally, teachers could modify the design to meet their instructional goals. Furthermore, the teachers had the support of the district counseling office with an anti-cyber-bullying program. The online teachers could contact them if they realized bullying was occurring among students in their virtual class. Another support the teachers had was access to course analytics within their LMS to monitor student activity. Hence, Borup et al. (2014) learned of multiple ways OHSU provided support to their online teachers.

As I pursued my research, I sought to learn the software teachers incorporated into their traditional classes and how they adapted this use with their blended learning classes. Furthermore, I discovered teacher experiences with the level of technology access their administrators permit. I asked teachers about their perceptions in both of these areas.

Saidin and Sam (2013) applied the CBAM in their research regarding the change process teachers experience with using Geometer’s Sketchpad for instruction. Geometer’s Sketchpad is software that provides for interactively exploring mathematics concepts, especially in geometry.
and algebra. The authors focused on the LoU component of CBAM stating this represents the “knowledge and skill of the individual” (p. 285). They conducted their research in Malaysia and report that Malaysia purchased a national license of Geometer’s Sketchpad (Saidin & Sam, 2013).

Saidin and Sam (2013) found through their Malaysian study that 77.4% (p. 288) of the mathematics teacher participants were nonusers of Geometers’ Sketchpad. Slightly over half of the nonusers were not using the software and approximately one-fourth of them were at the orientation level. Reasons reported for not using the Geometers’ Sketchpad at a higher LoU included lack of exposure, lack of follow-up classroom action, and not having the related equipment or technical support. Additionally, as the teachers in Hall et al.’s (2013) study also stated, time constraints were a factor.

Therefore, Saidin and Sam (2013) concluded that a variety of implementations would likely assist in increasing teachers’ LoU of Geometers’ Sketchpad. These included providing an in-service support group, conducting regular courses, having an expert group to help prepare teaching templates, and offering a method for teachers to share their lesson materials. This extends to my research regarding gaining teacher recommendations on how they believe school authorities can better assist them in transitioning to teaching in blended learning platforms.

Similar to Saidin and Sam’s (2013) research, Hosman and Cvetanoska (2013) conducted their CBAM-based research regarding a nationwide goal of implementing a technology innovation in Macedonia. Hosman and Cvetanoska studied the SoC, as Hall et al. (2013) did, to learn more about teachers’ concern and interest. Hosman and Cvetanoska conducted their research in primary schools whereas Saidin and Sam’s research was at the secondary level. Hosman and Cvetanoska state that teachers play a main role regarding the success of an
innovation, change takes years, and teachers need continuous support and recognition as stakeholders.

Almost every teacher in Hosman and Cvetanoska’s (2013) study was experiencing their first Internet contact. The survey data showed that 70% (Hosman & Cvetanoska, 2013, p. 37) of the teachers believed they could benefit from additional instruction ranging from learning basic computer skills to content-based training. Approximately half of the teachers in Hosman and Cvetanoska’s (2013) stated they had not used a computer with their students and only around one-fourth to one-third of the teachers used ICT for instructional activities (Hosman & Cvetanoska, 2013). In contrast to the actual LoU teachers reported, overwhelmingly 98% (p. 43) of the teachers believed technology use in the schools is a benefit. Most teachers were found to be in the SoC at lower levels involving self-concern and task/time management.

Hosman and Cvetanoska (2013) reached the same conclusions of Tanim (2013), Capo and Orellana (2011), and Saidin and Sam (2013) that the change process of innovations takes time and accentuate the importance of related professional development being offered regularly. Hosman and Cvetanoska state providing teacher collaboration is essential as well as including teachers in developing implementation plans. In my research, I pursued insight into teacher perspectives of the roles they are playing within the implementation of online learning as well as their viewpoints regarding professional development.

2.8 Community of Inquiry (CoI)

A variety of quantitative and qualitative studies have been conducted based on Garrison, Anderson, and Archer’s (2000) CoI framework. Teaching, cognitive, and social presences have found to be imperative in the online learning environment (Armenelli & De Stefani, 2015; Borup, Graham, & Drysdale, 2014; Casey & Evans, 2011; Chen & Wang, 2009; Shea &
Bidjerano, 2009). Various ways teachers and students interacted within the online learning environment were found to encompass these three presences. Furthermore, student self-regulated learning and self-efficacy were found to be connected to this model (Shea & Bidjerano, 2010).

Shea and Bidjerano (2009) performed a quantitative study in which they focused on cognitive presence within the CoI model. The authors sought to discover how teaching and social presences may affect cognitive presence. Cognitive presence is seen when students engage collaboratively to increase their knowledge and perform critical thinking (Shea & Bidjerano, 2009).

Shea and Bidjerano’s (2009) study participants were from a random sample of undergraduate students enrolled in fully online courses in a multi-institutional online learning network. The authors developed a survey instrument in collaboration with other researchers familiar with the CoI framework. The participant students took an online survey that asked questions regarding their opinions about how well the instructor communicated course topics, goals, and instructions and how comfortable they felt with participating in discussions and interacting online with other students.

Shea and Bidjerano found a significant degree of correlation between the social, teaching, and cognitive presences. With social and teaching presences, students are more apt to have higher level discussions in their courses (Shea & Bidjerano, 2009). Thus, teachers need to adapt to incorporating presences in virtual courses.

Pellas (2017) conducted a quantitative study in regards to the CoI. In this case, the researcher studied how implementing students playing the game, Open Sim, in a blended learning environment may have an effect on the teaching, social, and cognitive presences. There
were 81 participants in the study, 43 boys and 38 girls. The study with the high school computer programming students occurred over six weeks. None of the students had any experience with playing the Open Sim game, which is a three-dimensional multi-user game.

Pellas (2017) found many positives from the students interacting during the Open Sim game in learning computer programming. Along with increasing their content knowledge, they gained a “sense of belonging” (Pellas, 2017, p. 357) and had collaborative opportunities. The students had social presence and cognitive presence. Furthermore, the teacher presence was apparent. Student experience with the Open Sim game resulted in “students’ engagement in collaborative-problem solving tasks” (Pellas, 2017, p. 357).

Chen and Wang (2009) advise instructors to welcome students engaging in social talk within discussion boards. Chen and Wang found in their research that student coordination and social discussions have a positive significant impact in relation to course content learning. The authors studied how students engage in high school online discussion forums and how these have an effect on core learning.

Chen and Wang (2009) studied Taiwanese student interactions within a six-week virtual inquiry-based summer science contest and categorized all the student postings as focusing on domain, coordination, or social talk. As part of the authors’ research, they sought out to discover “What will students do differently” (Chen & Wang, 2009, p. 5) regarding being provided online social media for learning. They discovered many of the postings involved students discussing domain and coordination together as well as social talk. The majority of posts involved students having coordination and social talk to supplement content learning.

When Chen and Wang (2009) asked students to identify the postings they found most valuable, they marked almost one-quarter of the postings the researchers had categorized under
coordination or social talk. The authors discovered the domain discussions were dependent on social discussions. Haavind (2007) also found instructor social postings to be helpful referring to one example as being “reassuring” (p. 44) to the student. Hence, online learning instructors need to be supportive of social talk within discussion threads as this has been found to be essential for productive discussion.

Yet another way students may benefit from social support in online learning is by being engaged in social support networking sites only available to students enrolled in the courses (Casey & Evans, 2011). Adolescents enjoy using social networking to interact with peers and find this online communication tool to be important (Casey & Evans, 2011; Kerr, 2011). Kerr’s research results show that of approximately 200 Turkish high school students, 95.36% reported they use social networking sites for communicating with their friends (p. 335). Hence, incorporating social networking into online courses may increase student participation.

Casey and Evans (2011) used action research to learn how online social media may assist students with their learning. Action research often involves researchers also being participants and having the goal of learning about “a specific problem within a specific setting” (Merriam, 2009, p. 4). For one semester, Casey and Evans studied Australian adolescent usage of a teacher-created social network site, Ning, as part of their instructional program.

Casey and Evans (2011) found the high school participant students responded overwhelmingly to the option of creating new discussion groups and participating in them. Students provided peer support, reflected individually, and assessed work. Initially, the teacher researcher was concerned about many new groups being created by the students and tried to find out how to adjust the administrative settings so that groups could not be activated unless she approved. A positive outcome came from this not being resolved because in a short period of
time, the students slowed down with their group creation and interacted well with the teacher-researcher’s guidance regarding proper online protocols.

Casey and Evans (2011) note that administrators and teachers need to adjust more to students having social networking sites integrated with their school work by reducing desire to have control. Hence, a change teachers may encounter with teaching blended courses is giving up a higher level of control they had with in-class discussions when teaching fully face-to-face courses. In my research, I sought to learn how high school teachers are incorporating social networking into their blended learning courses.

Borup, Graham, and Drysdale (2014) conducted a CoI study focusing on teacher presence. The authors cite Garrison, Anderson, and Archer (2000) with referencing teachers in online learning as the “binding element” (Borup et al., 2014, p. 793) and that students will most likely not be successful if there is a lack of teacher leadership. All the teachers in Borup et al.’s (2014) study were certified and did not have prior K-12 online teaching experience. Borup et al. proposed six overall indicators of teacher engagement based on emerging themes: facilitating discourse, designing and organizing, nurturing, instructing, monitoring, and motivating.

The teachers in Borup et al.’s (2014) study were provided with modifiable pre-designed content developed by OHSU. The teachers highly valued the ability to adjust the course design and set a cultural climate that was “safe and nurturing” (Borup et al., 2014, p. 800). Borup et al. found the participant teachers engaged in monitoring and motivating students. As a reflection of de la Varre et al. (2010) stating that students are accustomed to communicating and interacting with their teachers, all the teachers in Borup et al.’s study provided individual tutoring sessions.

The teachers in Borup et al.’s (2014) study who had prior face-to-face teaching experience stated they had to make the change from lecture-based to one-on-one tutoring
instruction. Students initially accessed the course content asynchronously. Almost three-fourths of the teachers shared they were not fully prepared to teach online (Borup et al., 2014). The greatest challenge many teachers reported in regards to online teaching was the technology as students asked them for assistance with this. One teacher stated she found the one-on-one tutoring sessions to be challenging because her teacher education was primarily about teaching groups of students rather than providing individual instruction. In my study, I discovered teacher perspectives regarding their access to professional development about online/blended learning as well as how they may be encouraging interactions in their classes.

Annamalai and Tan (2015) adapted Borup et al.’s (2014) theoretical framework in their study on two Malaysian high school teachers’ interactions with their students in online writing classes. In addition to referencing Borup et al.’s teacher engagement framework, Annamalai and Tan based their research on Garrison et al.’s (2000) teaching presence framework. Each teacher in Annamalai and Tan’s study created a closed Facebook group and permitted their group of six students to be included. (Annamalai & Tan, 2015).

Based on studying the teachers’ online messages in the virtual writing environment, Annamalai and Tan (2015) discovered the teachers had very diverse degrees of engaging. The teacher who engaged the most also incorporated engaging with the students in regards to designing and organizing as well as nurturing. When the other teacher interacted with the students, this predominantly involved monitoring along with a few instances of engagement (Annamali & Tan, 2015).

Annamali and Tan (2015) found evidence that “teacher’s engagement is necessary to motivate and facilitate students’ interactions” (p. 72) as they found a positive correlation between the level of teacher engagement and students’ improvement in their writing scores. Thus, a
change teachers have to make in teaching blended courses is how to engage with their students in a virtual environment. Annamali and Tan state the theoretical framework and literature regarding online writing is limited for high school teachers and students. Therefore, I conducted my research to assist with addressing high school blended learning and writing as a component.

Additionally, Shea and Bidjerano (2010) conducted a survey with approximately 2,400 volunteer college students to find the strength of correlations between teaching and social presence with cognitive presence and self-efficacy. They also studied how self-efficacy may affect online self-regulated learning. Shea and Bidjerano (2010) describe self-regulated learning as the ability for one to pace their work progress and co-regulation as how group members perform with task assignment, time management, and goal-setting. The authors refer to self-efficacy as one’s personal belief in their abilities and thus, a component of self-regulated learning. Shea and Bidjerano (2010) found strong positive correlations with the CoI presences and self-efficacy.

Shea and Bidjerano (2010) suggest that when teachers create activities for online learners to actively engage in course content and teachers interact to promote this, students will build a higher degree of self-efficacy. Additionally, they propose that teachers may also increase student self-efficacy and self-regulated learning by incorporating opportunities for students to reflect on their approaches to learning and how they may improve upon these. Therefore, blended learning teachers have an adaptation to make with providing virtual course opportunities for active student engagement to assist with increasing student self-efficacy.

Shea and Bidjerano (2010) found that along with teaching and social presences positively impacting cognitive presence, they are positively significantly correlated with higher self-efficacy. Higher student self-efficacy and self-regulated learning promote greater cognitive
presence. Hence, learning presence, represented by self-efficacy and self-regulated learning, was seen as a major factor in the success and persistence of students in their online learning courses (Shea & Bidjerano, 2010).

Armenelli and De Stefani (2015) have conducted research finding an even greater emphasis to be placed on social presence. Their findings advocate that teaching and cognitive presences have a higher social presence than initially expressed in the early stages of the CoI framework. Armenelli and De Stefani focused on in-depth analysis of the discourse between participants and tutors.

Armenelli and De Stefani (2015) studied online interactions to learn more about the CoI presences in online/blended learning. Building upon Shea and Bidjerano’s (2010) research, which initiated from Garrison, Anderson, and Archer (2000) presenting the CoI model, Armenelli and De Stefani found in their action research that an even stronger social presence was important. They discovered the teaching and cognitive presences to incorporate social presence.

Therefore, Armenelli and De Stefani (2015) concluded social presence in online/blended learning is the core of all three presences rather than being an equally overlapping presence with teaching and cognitive presences. This demonstrates that teachers transitioning to having an online instructional component need to adjust to being socially present in virtual settings. Hence, I studied the extent my teacher participants express the social aspects within their blended learning courses.

Similar to Shea and Bidjerano (2010), Cho and Shen (2013) conducted a study focusing on student self-efficacy and self-regulated learning in online learning. Cho and Shen referenced intrinsic and extrinsic goal orientation. Intrinsic goal orientation pertains to a student’s
inclination toward completing work whereas extrinsic goal orientation relates to receiving high academic grades (Cho & Shen, 2013).

The motivated strategies for learning questionnaire (MSLQ) was administered to the students in Cho and Shen’s (2013) study to learn more about their self-regulated learning and goal orientation. The researchers found extrinsic goal orientation to be significantly correlated with academic self-efficacy. Conversely, extrinsic goal orientation did not have any impact on self-regulated learning or academic achievement. Cho and Shen found a positive association between student intrinsic goal orientation and academic self-efficacy. As Shea and Bidjerano (2010) concluded, Cho and Shen found a positive correlation between student self-efficacy and self-regulated learning. I used this as a basis in my research as I worked toward finding how high school blended learning teachers believe they assist students with supportive strategies, such as time management and self-regulated learning.

2.9 Disruptive Innovation Theory

Christensen, Horn, and Johnson’s (2017) Disruptive Innovation theory explains how organizations may be successful with innovation. The authors apply this theory to public schools in regards to moving toward student centric learning with technology. Christensen et al. (2017) state that “virtually every successful disruptive innovation ...” competed against “nonconsumption” so people were happy to have a product even with limited capabilities (p. 86).

Behara and Davis (2015) used Christensen et al.’s (2015) theory of disruptive innovation to provide recommendations regarding using a “pragmatic liberal” (p. 305) approach in assisting undergraduate business education with disruptions. Citing Christensen, Johnson, and Horn (2008), Behara and Davis explain there are two types of disruptive innovation. Type 1 involves a new method of providing “products to a group of noncustomers who are not currently being
served by the industry leaders” (p. 310). An example given is the University of Phoenix which provides a combination of online learning with physical meetings in communities to students. This is provided efficiently in regards to time and money.

On the other hand, Behara and Davis (2015) explain that with Type 2 disruptive innovations, established businesses continue to improve with “sustaining innovations” (p. 311) that assist them with continuing to improve. The authors provide the example of Community/State colleges offering four-year undergraduate degrees in business. According to Behara and Davis (2015), the factors involved in this are tuition, educational delivery, and employers not being satisfied with student abilities to apply their learning.

Hence, in regards to Type 2 disruptive innovation, Behara and Davis (2015) recommend implementing service learning and undergraduate research into undergraduate business programs. Service learning involves working with a community partner while building academic learning. This is to replace the traditional method of “integrating liberal and business education” (Behara & Davis, 2015, p. 322).

Furthermore, Flavin (2012) studied the “role of disruptive technologies in higher education learning and teaching” (p. 105). This involved conducting a pilot survey inquiring about technologies participants have an awareness about, what they use technologies for, and to what degree they use technologies for multiple purposes. The participants were four students and three lecturers.

Flavin (2012) also completed seven observation studies regarding the “identification and storage of information to support learning and teaching” (p. 105) and five interviews. Two of the interviews were semi-structured and predominantly focused on certain technologies and the other three were structured and looked at technologies more broadly. Flavin found individual
technologies to be used for multiple purposes, such as Facebook and Wikipedia use for recreation, work, informal learning, and formal learning. The second survey showed the participants to have a low awareness of new technologies (Flavin, 2012).

After Flavin (2012) also using observation and interviews with the participants, he concluded that in alignment with the disruptive innovation theory, people prefer to use technologies that are free and easy to use. Furthermore, he found Wikipedia and Google to be used often. Wikipedia is disruptive as learning may occur in place of other traditional methods, such as encyclopedias and higher education institutions (HEI). Thus, Flavin found evidence of the disruptive innovation theory in his research.

Thus, Behara and Davis (2015) and Flavin (2012) found ways in which Christensen’s disruptive innovation theory occurred in the field of education. Whereas Behara and Davis found service learning and undergraduate research to replace the traditional method of integrating liberal and business education, Flavin discovered participant tendencies toward free and easy technologies for learning and other purposes rather than relying on more traditional monetary methods. In both cases, the authors found disruptive change benefiting participants.

2.10 Professional Development for Online/Blended Learning

Darrow, Friend, & Powell (2013) and Zweig, Stafford, Clements, & Pazzaglia (2015) conducted studies to learn about professional development offerings to K-12 online teachers. These programs were found to assist teachers and other educational professionals in offering online learning courses. According to Kennedy and Archambault’s study (2012), preservice teacher training in offering online instruction is extremely limited across the nation.

Professional development is the second of six elements incorporated into the iLearnNYC plans for blended learning in the schools (Darrow et al., 2013). This incorporates formal as well
as information instruction to teachers, implementation managers (IM), and administrators. Considerations made regarding professional development include the specific needs, delivery methods, and providers. Other planned aspects include how ongoing professional development is “provided, monitored, and tracked” (Darrow et al., 2013).

ILearnNYC incorporates professional development via workshops regarding using online platforms, incorporating vendor solutions, developing online content, and being a blended learning teacher (Darrow et al., 2013). Furthermore, Darrow et al. state there are monthly professional development meetings, a wiki (http://ilearnnyc.wikispaces.com/) for sharing blended learning practices, and newsletters with related information. The Lab Schools provide time for teachers to share their blended teaching experiences, budget for professional development, and seek and incorporate feedback of all involved. These practices have contributed to supporting the “effective and efficient implementation of blended learning” (Darrow et al., 2013, p. 25).

Wisconsin online teachers also participate in professional development regarding instructing online (Zweig et al., 2015). A greater number of teachers stated they participated in online learning training while teaching online as compared to prior to doing so. Over four-fifths of the online teachers in Zweig et al.’s study reported receiving professional development within the past year. The most common method for receiving this was through conferences, workshops lasting more than one day, and training sessions that were offered continuously (Zweig et al., 2015).

Zweig et al. (2015) state that over half of the Wisconsin Virtual School teachers who taught during the 2014 or 2015 school year participated in related professional development offered in nine diverse areas. These included technology, facilitation, assessment and data use, online course development, and support for students with special needs. Predominantly, the
teachers reported seeking more assistance with student course completion, interaction, and assignment completion. Zweig et al. conclude educational institutions should examine what professional development they are offering regarding online learning and seeing if their offerings are meeting the needs of the teachers.

Contrarily, Kennedy and Archambault (2012) conducted a national study to learn about K-12 preservice teacher field experiences with online learning. Based on survey responses from teacher education program representatives, only 1.3% (Kennedy & Archambault, 2012, p. 195) of post-secondary teacher education programs are offering virtual school field experiences. Although half of the participants reported they believed these experiences should be offered, only 13% (Kennedy & Archambault, 2012, p. 195) reported being in the planning process.

A New York state teacher education program representative reported offering limited online learning instruction within an educational technology course (Kennedy & Archambault, 2012). The New York program offers a graduate online learning course; however, this is only for certified teachers. Although a North Carolina program stated students are able to become familiar with the online environment by having the ability to take their teacher education program online, formal instruction is not included. California, Idaho, Michigan, Nevada, and Utah discussed working on offering preservice teachers training regarding online instruction (Kennedy & Archambault, 2012).

Darrow et al. (2013) and Zweig et al. (2015) concluded having both formal and informal professional development provided to high school online learning teachers to be valuable. The programs in New York City and Wisconsin incorporate a range of professional development for online learning from technology to pedagogical aspects (Darrow et al., 2013; Zweig et al., 2015). With Kennedy and Archambault (2012) finding K-12 preservice teacher training to be minimal,
the need for professional development for active online learning teachers is high. Hence, in my study I discovered the blended learning professional development that the teacher participants reported their districts are offering and the teacher perspectives regarding these initiatives.

2.11 Summary

Although research has been conducted on blended learning, most of this has focused on post-secondary student experiences. Furthermore, the related studies at the high school level have primarily been on students who tend to perform at or above grade level. Based on the research, there are a multitude of areas to address in regards to blended learning. These topics include student support, instructional methods, encouraging student inquiry, and student motivation and self-regulated learning.

High school students differ from post-secondary students as overall they are not as mature and are subject to more oversight by their parents/guardians and teachers. Additionally, students who are in credit recovery blended learning courses have experience being unsuccessful with their coursework. Students who do not graduate from high school are at greater risk of being incarcerated and receiving lower salaries or being unemployed. This also results in higher community crime and unemployment rates along with a lower amount of tax revenue.

Credit recovery courses provide students with the opportunity to receive their high school diplomas with their peers. In prior research, credit recovery students have shared they desire help with self-motivation and time management. The students have also stated they like having the flexibility in their coursework that classes with an online learning component provide.

Instructors are key in working with students in high school blended learning courses. By having teacher insight on beliefs, perceptions of experiences, and recommendations, districts/BOCES organizations can better assist teachers as they transition from face-to-face to
blended learning courses. Also, teachers may become more informed regarding the delivery of these courses. In addition to learning how to navigate online learning management systems, teachers have expressed the need to receive professional development in providing instruction using an online learning platform to deliver a portion of their lessons.

I incorporated the Technology Acceptance Model and Concerns Based Adoption Model to assist with learning about the processes people go through when needing to adapt to change. Furthermore, I integrated the Community of Inquiry theoretical framework as this relates to students building knowledge and conceptual understanding with the assistance of their peers and instructors. I also based my research on the Disruptive Innovation theory because teachers and students go through a disruption when adjusting to a new form of teaching and learning.

Therefore, I conducted my research on teacher beliefs and perceptions of experiences with transitioning from face-to-face to blended learning courses. I sought to learn how teachers may demonstrate caring for their students, providing a comfortable and encouraging learning environment, assisting students with managing their coursework, and increasing student motivation, engagement, and self-regulated learning when working individually and collaboratively. I discovered additional insight into these experiences as well as learned about teacher perceptions regarding each of their transitions.

Finally, I heard recommendations the teachers have for districts/BOCES to provide additional support to blended learning teachers. This information may result in teachers’ employing organizations in providing professional development directly pertaining to teacher-reported needs with teaching high school blended learning courses. In turn, high school blended learning teachers may apply their newly learned information with their students so they may feel comfortable in class and persist until graduation.
CHAPTER 3: RESEARCH METHODS

3.1 Background of Participants

The intent of my study was to learn how the participant teachers perceive their experiences transitioning from traditional teaching to blended learning teaching. The participants were high school teachers instructing high school courses in a blended format in New York State, currently or within the past year. My sampling procedure involved contacting school administrators in a variety of demographic areas in New York State and discussing my proposed study. Five of these school administrators chose potential participants who I contacted to discuss my proposed study.

The participant teachers were from five different school districts/BOCES. I had contacted two other school administrators; however, I did not hear from any potential participants from their schools. Hence, the participants in this study represent a sample of the blended learning teachers in New York State.

The participants in the study were eight New York state high school teachers teaching blended learning classes; five of the teachers were female and three were male. Seven of the participants were certified teachers and one was a teaching assistant who co-taught with one of the participants. All of the teachers responded to the study survey. In addition to one teacher who stated she was retired from full-time teaching, the participants ranged from age 32 to 48 with a mean age of 42 years. Information about these teachers is summarized in tables 1 and 2 and figures 5 through 7.

The teacher participants had two or more years of experience, including the year of the study, providing instruction in a blended format to high school students and were certified to teach in the state. Additionally, the participants had prior experience with providing traditional
face-to-face instruction. By selecting participants who had both blended and classroom experiences, I was able to learn about their beliefs and perceptions of experiences with the transition to teaching with an online component.

Additionally, Miles et al. (2014) state that qualitative research sampling involves setting “boundaries” and creating a “conceptual frame” (p. 31). I had a purposive sample of New York State certified teachers who taught within the state in five different cities. By assuring my participant teachers were state certified and had experiences with classroom and blended teaching, I was in alignment with the conceptual frame of my study regarding beliefs, perceptions of experiences, and recommendations of teachers transitioning from classroom to blended teaching.

Potential teachers identified by administrators were able to choose whether or not they would like to participate anonymously. Participants were asked to read and sign a consent form prior to participating. They were informed that pseudonyms would be used to protect their identities.

The participants had a wide range in teaching experience ranging from 4 to 25 years with a mean of 14 years of experience teaching in any type of setting. While six of the teacher participants have taught blended or online learning for four years or less, one participant was in their sixth year of teaching with a virtual component and another was in their seventh year. All of the teachers were at least in their second year of teaching a high school blended learning course.

Altogether, the participants taught blended learning in three Board of Cooperative Educational Services (BOCES) and two school districts in the state of New York. Two of the participants taught blended learning in credit accrual and credit recovery courses, one of them
taught credit recovery blended learning, four of them taught credit accrual courses in this format, and one participant taught advanced placement blended learning courses. Three of the participants have at some point in their career taught credit recovery blended learning courses and three have taught credit accrual blended learning courses. Only one of the participants has had experience teaching an advanced placement blended learning course.

Three different learning management systems were used by the participants altogether. Seven of the eight participants use Buzz with their blended learning courses. Two of the teachers use Odysseyware, with one of them also using Buzz. Finally, one of the teachers uses Canvas along with Buzz.

Regarding college coursework in online or blended teaching methodologies, none of the participants had any coursework in this topic before being certified as a teacher or teacher assistant. This corresponds with the findings in Kennedy and Archambault’s study (2012) that preservice teacher training in offering online instruction is extremely limited across the nation. The New York State Online Learning Advisory Council (2015) also made the recommendation of developing “teacher pre-service experiences in online and blended learning” (p. 26).

After having earned teacher certification, four participants reported having professional development in online or blended teaching methodologies. Two of the teachers gained this information via BOCES workshop offerings whereas one teacher took courses in this while earning additional teacher certification and another took a course in online learning through the Florida Virtual Learning School. Therefore, the participant background in professional development preparation for instructing virtually varied widely.

None of the participants experienced being a student in either a fully online or blended learning course at the high school level. However, three of them were students in fully online
college courses and half of them were students in blended learning college courses. Hence, participant background with having a student perspective differed.

The content the participants delivered in a blended learning format varied widely as well. There were two mathematics, one science, one English, one social studies, and two career and technical education teachers as well as one teacher assistant in the fields of Welding and Certified Nurse Assistant. The teacher participants reported instructing a range of one to six blended learning courses during the most recent school year.

The highest educational level of the participants ranged from an Associate to a Doctoral degree with the majority of the survey respondents reporting having a Master’s degree as their highest level of education. In regards to the highest level of education the participants had, one had an Associates, two had a Bachelor’s, three had a Master’s, one had a Master’s degree plus 30 credit hours, and one had a Doctoral degree. Furthermore, half of the participants perceived their technology skills to be moderate with three of the others rating themselves as high and one as very high. Hence, none of the participants stated their level of technology skills was below the moderate level. A summary of the participant responses to the background survey is presented in tables 1 and 2 and figures 4 through 6.
### Table 1

**Participant Background Information**

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Gender</th>
<th>Age</th>
<th>Years of Experience Teaching</th>
<th>Years of Experience Teaching Online/Blended Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luke</td>
<td>M</td>
<td>32</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Leah</td>
<td>F</td>
<td>38</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>Victoria</td>
<td>F</td>
<td>48</td>
<td>17</td>
<td>7</td>
</tr>
<tr>
<td>Wyatt</td>
<td>M</td>
<td>37</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Sophia</td>
<td>F</td>
<td>44</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Claire</td>
<td>F</td>
<td>47</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Wyatt</td>
<td>M</td>
<td>45</td>
<td>23</td>
<td>4</td>
</tr>
<tr>
<td>Lila</td>
<td>F</td>
<td></td>
<td>Retired from Full-Time Teaching</td>
<td>25 3</td>
</tr>
</tbody>
</table>

### Table 1 (Continued)

**Participant Background Information**

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Highest Level of Education</th>
<th>Have Taken College Courses in Online/Blended Learning Teaching Methodologies</th>
<th>Perception of Technology Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luke</td>
<td>Master’s Degree</td>
<td>No</td>
<td>High</td>
</tr>
<tr>
<td>Leah</td>
<td>Master’s Degree</td>
<td>Yes</td>
<td>Very High</td>
</tr>
<tr>
<td>Victoria</td>
<td>Master’s Degree</td>
<td>No</td>
<td>High</td>
</tr>
<tr>
<td>Wyatt</td>
<td>Bachelor’s Degree</td>
<td>No</td>
<td>Moderate</td>
</tr>
<tr>
<td>Sophia</td>
<td>Bachelor’s Degree</td>
<td>No</td>
<td>Moderate</td>
</tr>
<tr>
<td>Claire</td>
<td>Associate’s Degree</td>
<td>No</td>
<td>Moderate</td>
</tr>
<tr>
<td>Evan</td>
<td>Doctorate Degree</td>
<td>Yes</td>
<td>High</td>
</tr>
<tr>
<td>Lila</td>
<td>Master’s Degree plus 30 graduate credit hours</td>
<td>No</td>
<td>Moderate</td>
</tr>
</tbody>
</table>
Figure 5: Participant Highest Level of Education

Figure 6: Participant Perception of Technology Skills Overall
### Participant Years of Teaching Experience

![Bar chart showing participant years of teaching experience.](chart.png)

**Figure 7: Participant Years of Teaching Experience**

### Table 2

**Participant Course Information**

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Type of Courses</th>
<th>Course Content</th>
<th>Learning Management System</th>
<th>Student in Online/Blended High School Course</th>
<th>Student in Online/Blended College Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luke</td>
<td>Credit Accrual, Credit Recovery</td>
<td>Math</td>
<td>Buzz/Odysseyware</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Leah</td>
<td>Credit Accrual</td>
<td>Science</td>
<td>Buzz</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Victoria</td>
<td>Accrual/Credit Recovery</td>
<td>Social Studies</td>
<td>Buzz</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Wyatt</td>
<td>Credit Accrual</td>
<td>Welding Nursing Assistant</td>
<td>Buzz</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Sophia</td>
<td>Credit Accrual</td>
<td>Nursing Assistant</td>
<td>Buzz</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Claire</td>
<td>Credit Accrual</td>
<td>Nursing Assistant</td>
<td>Buzz</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Evan</td>
<td>Advanced Placement</td>
<td>Math</td>
<td>Canvas/Buzz</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Lila</td>
<td>Credit Recovery</td>
<td>English</td>
<td>Odysseyware</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
3.2 Scope of the Study

A delimitation of my study is this only considered high school teachers in New York State who currently teach blended learning courses, or taught blended learning courses within the past school year, and previously taught fully in face-to-face settings. Because my research focused on learning about beliefs and perceptions of experiences of blended learning teachers, the participant teachers were in at least their second year of teaching these courses. My study was conducted during one high school semester. While I sought to learn about teacher approaches to blended learning in general, I was especially interested in strategies the teachers are implementing to engage and support students. I was also interested in learning how teachers have perceived their experiences and believe their district may assist them with this process.

3.3 Role of the Researcher

As the researcher, my role was to create interview questions and conduct semi-structured interviews with the participant teachers. Furthermore, I reviewed online course designs and the accompanying course documentation. I analyzed the interview responses, course designs, and related materials to look for emerging themes.

In preparation for conducting this study, I integrated my experiences as a research assistant. As an assistant, I collaboratively developed interview questions and conducted phone interviews with community college instructors of blended online courses. I also observed face-to-face interviews with these instructors. I have participated in online graduate courses which demonstrated to me a variety of approaches. During the course of my research, I kept in mind my online/blended learning experiences have been with higher education and online high school blended learning courses may have different types of assignments and expectations of learning.
Additionally, I monitored any form of bias that may emerge from my prior experiences as a technology teacher, a workshop facilitator, and an online post-secondary student to assist with limiting my background from arriving at conclusions within my study based on my interactions with the teacher participants. Booth, Colomb, and Williams (2008) recommend writing reflectively throughout the research process to assist with understanding. While conducting studies, researchers must be open to findings they did not expect (Yin, 2009). As Yin advises, I described my preliminary findings to a couple colleagues to seek other explanations. According to Yin, researchers will have a lower potential for bias if supported alternatives are discovered.

I believe my background with taking online and blended courses along with teaching students of all ability levels assisted with my understanding of the associated challenges and terminology as I meet with teachers of blended learning courses. Yin (2009) emphasizes the need during case studies to have the ability to interpret information during data collection. Thus, I believe my prior experiences enhanced my ability to make these interpretations.

I took an etic role as I was not be a member of the organization within which I am conducting the research. An etic role involves the researcher not being an insider to the culture (Merriam, 2009). As such, I described the culture of the school from my perspective. I respected all individuals in my research environment and followed the school protocols. Schwandt (2007) states researchers must “‘bracket’ or set aside” (p. 24) personal assumptions to understand how participants “experience their world” (p. 24). Hence, I bracketed my personal thoughts and experiences while conducting my study. This lessened my own viewpoints having an influence on my research findings.

My teaching experience has predominantly involved instructing middle school business computer technology and elementary curricular technology integration lessons. Along with this,
I have facilitated workshops for K-12 teachers on integrating technology with the curriculum. I have found the familiarity of students and teachers with technology overall has often correlated with their ability to grasp new technology. Hence, I bracketed this belief as I interacted with my participants and reviewed related materials.

### 3.4 Data Collection

I collected the data for my study through background surveys, in-depth semi-structured interviews, and obtained access to online course webpage designs and contents, and the related syllabi. A summary of my data collection procedures connected with my research questions and quality control safeguards is shown in Table 3. By contacting administrators throughout areas of New York State, I used a combination of convenience and snowball sampling. Convenience sampling involves selecting participants because of factors, such as time, location, and availability of places and people (Merriam, 2009). On the other hand, snowball sampling involves asking people knowledgeable about the topic who they recommend to seek for the research. The search narrowed after widening by hearing the same names from different sources (Patton, 2002). Merriam states that snowball sampling is a very common form of purposeful sampling.

I considered that convenience sampling is more likely to not be as credible or intensely informative (Merriam, 2009). Patton (2002) describes convenience sampling as “neither purposeful nor strategic” (p. 242) as selections are based on participants easiest to reach and of low cost to study. Although Patton acknowledges the considerations of convenience and cost, he states these are the “last factors” (p. 242) to be applied when attempting to gain the most information from a limited amount of cases. Convenience sampling may also be based on participants who may be accessed “geographically and immediately” (Miles et al., 2014).
Hence, convenience sampling tends to be not as representative of the population as purposeful sampling. Therefore, by implementing snowball sampling in addition to convenience sampling in my study, my cases should be more representative while also considering my ability to access participants throughout New York State.

Next, I asked administrators if they would be willing to permit me to perform my study within their district as well as ask for recommendations of teachers I could approach to inquire about being participants. I also found teachers in blended learning programs to participate in my study based on recommendations from administrators. In this way, I incorporated networking sampling. Networking sampling is the type predominantly used and involves identifying some potential participants and hearing from them who else may be interested (Merriam, 2014).

The goal of my study was to have enough participants to arrive at confidence in my analysis while still having the ability to conduct an in-depth study. Miles, Huberman, and Saldana (2014) advise to conceptually balance having a large enough number of participants to analytically generalize and having a small enough number to have the ability to conduct rich investigations. I strived for this balance and had planned to recruit at least six teachers. I was able to interview eight teachers from five different educational organizations, three BOCES and two school districts. Two of these teachers are co-teachers with one formally being in the role of a teacher and the other in a teaching assistant position.

Along with collecting data from interviews, I gathered screenshots from course designs without student content. This provided me with information on sections and layout that teachers either determined or are required to use in teaching their blended learning high school courses. Furthermore, I sought to obtain syllabi from teachers to learn more about the course content and student expectations regarding submitting work and interacting in the course. While I was
unable to gather former syllabi, the teachers shared with me some highlights of areas of their courses they have changed over time.

Patton (2002) lists triangulation of data sources as one of the four types of triangulation. Methods, analyst, and theory/perspective triangulation may also be used for evaluation (Patton, 2002). According to Yin, the most significant benefit of having multiple evidence sources is the occurrence of “converging lines of inquiry” (p. 115). This involves triangulation and corroboration which strengthens the data findings.

By collecting multiple types of data to arrive at the same discovery, construct validity may be addressed. Construct validity incorporates defining specific concepts and identifying the measures for these. Furthermore, triangulation improves the reliability of the inferences made because more than one data source is included when developing conclusions (Yin, 2009). Hence, having diverse evidence to arrive at research findings strengthens a case study.

There are various procedures I followed as I conducted my research. First, I surveyed my participants in regards to their background information (Appendix A). From these online surveys, I conducted “attribute coding” (Saldana, 2016, p. 82). This yielded demographic information about my participants for reference in my study (Saldana, 2016).

### 3.4.1 Surveys

Surveys were sent to the participants after their signed consent forms were received. A link to the survey was sent to each participant. The survey was conducted using Google Forms. The participants’ name and e-mail address were asked within the survey so the responses could be connected.

Survey questions included asking demographic questions, such as gender and age/age range, as well as the number of years of teaching experience overall and teaching blended
learning courses. Seven of the eight participants reported their age and one participant responded “retired.” The participants were also asked about any prior background they may have had either as a student in an online or blended learning course or formal instruction regarding teaching in an online or blended setting.

Finally, the participants were asked information about their blended learning courses, such as the content, and their highest level of education. Only one question asked the participants about their perception. This was in regards to the perception they had of their technology skills.

I learned if the participants completed the survey by checking the Google Form section in my account. If the participants had not yet responded after at least one week, I sent them an e-mail to see if they had received this or had any questions. Once the survey was completed, I contacted the participants to schedule their first interview. Please see Appendix A for the survey questions.

3.4.2 Interviews

Interviewing was my primary research method. As I conducted the in-depth semi-structured interviews (for interview questions see Appendix B), I carefully listened to assist with related follow-up questions to explore participant responses more in-depth. During the interview process, I built rapport with my interviewees through “respect, interest, attention, and good manners” (Seidman, 2006, p. 97).

As participants provided responses, I sought elaboration when I believed learning more about recent statements would enhance understanding of their beliefs and perceptions of experiences. Furthermore, I kept in mind providing pauses in my questioning to permit time for
my participants to reflect prior to responding as needed. This assisted in exploring interviewees’
statements more in-depth and help to avoid making assumptions (Seidman, 2006).

I interviewed the high school blended learning teachers two times. I interviewed two of
the participants using Skype video and the other participants over the phone. Each session was
up to 90 minutes in duration and 3 to 7 days apart, aside from one set of sessions that was one
and a half weeks apart because of inclement weather conditions. Seidman (2006) states that this
permits for a sufficient amount of time for discussion without being distracted by time
constraints while also not being too lengthy. Although Seidman recommends conducting a series
of three interviews, he states that alterations to this structure may be made as long as participants
have the opportunity to “reconstruct and reflect” (p. 21) on their experiences.

Seidman (2006) presents that the intent of the first interview is to gather background on
the participants, the purpose of the second interview is to learn about participant experiences, and
the goal of the third interview is for participants to have the opportunity to reflect on the meaning
of their experiences. In place of the first interview, I administered a survey to my participants.
This reduced the time investment while still being informed of participant background to provide
context. I also intertwined learning more about participant backgrounds during portions of the
first interview. In Appendix A, I have noted which questions were in the first and second
interviews respectively.

After completing transcribing and writing about these interviews and reviewing blended
learning documentation, as Creswell (2007) advises, I provided the participants with my themes
and a summary of each of these to assist with member-checking for accuracy. Furthermore, I
gained clarification from my participants during the semi-structured interviews of my
understandings based on their interview responses. In this way, I received participant feedback on my interpretations and conclusions based on participant statements (Creswell, 2007).

I created the interview questions independently with consideration of the literature I reviewed. I was mindful of avoiding asking leading questions through either word choice or tone (Seidman, 2006). Additionally, as Seidman advises, I strove to balance sharing a personal experience that related to a participant’s response that may assist in leading to additional conversation while at the same time not divert a participant from contributing their thoughts and experiences. This included letting participants respond without interruptions from me. When I heard a comment that I wanted to follow up with further questioning, I took note of this during the interview and addressed after the participant had completed sharing their response per Seidman’s guidance.

Furthermore, when desiring to gather information from interviewees regarding their experiences, I asked the questions directly to avoid asking my participants questions that reference responses based on their memories. In order to not skew interviewee responses, I was conscious of avoiding reacting to them (Seidman, 2006). As recommended by Seidman, another approach I used while interviewing was attentiveness to non-verbal cues such as laughter and word choices. For example, I sought further understanding when laughter and/or word choices were not in balance with non-verbal actions (Seidman, 2006).

3.4.3 Course Design

I also thoroughly examined the course designs and related documents I wanted to review and include in my analysis. I gathered online course design information through the use of screen captures. The screen captures assisted with visually seeing examples of how the teachers
were using the online portion of their blended learning courses. This enhanced my understanding of the interview responses and syllabi information shared.

I followed district protocol in gaining access to the course design without individual student contributions. Five of the eight participants shared their screen captures and syllabi information. I did not receive these from the certified nursing assistant co-teachers or from the advanced placement mathematics teacher. While collecting current syllabi information from the blended learning teachers, I also collected their prior syllabi information when teaching similar face-to-face high school courses. This provided me with the data to construct a “time-ordered matrix” (Miles et al., 2014, p. 202).

Based on Miles et al.’s (2014) example matrix, my first matrix column listed syllabi components followed by a column with the most recent face-to-face syllabi. The following column included the continuation or modification of the new syllabi versions as the teachers moved to blended learning. I created a matrix for each course being taught in a blended format. Please see Appendix C for the time-ordered matrix design.

3.4.4 Consent Process

Prior to engaging in my research, I submitted my research plans to the Institutional Review Board (IRB) and waited for approval. I obtained informed consent from my participants and ensured their awareness about being given the opportunity to member check themes in my writing that pertains to their interview statements and documents. This included explaining the intent of the research as well as the number of interview sessions and the time duration range.

I e-mailed the participants the informed consent. Upon receiving the signed informed consent form, I e-mailed the participants the link to the survey. Once the survey was completed,
I contacted the participants to set up audio or video interview dates and times. I gave each participant a $30 Walmart gift card to compensate them for their time.

In addition to stating the possible risks and participant rights, I discussed the prospective benefits to the participants as individuals and to the education field in general. Furthermore, I detailed the extent of confidentiality, such as using pseudonyms in my research writing, and expressed the possible forms of dissemination. Furthermore, I provided in written form my contact information and the IRB’s contact information along with a copy of the informed consent form (Seidman, 2006).

3.5 Data Analysis

I analyzed my data through seeking themes developed from the participant teacher responses during my semi-structured interviews. First, I read through interview transcripts while writing down notes using open coding. Merriam (2009) states that open coding is referred to as such because this initial phase represents when researchers are open to finding any results. Likewise, I kept an open mind to any information I am analyzing and wrote down as many comments that I find may be pertinent. I went back through the interview transcripts and recorded any additional notes I may have not realized during my first read.

Next, I saw how my findings may be categorized. I sought how responses may interrelate based on my notes. As I progressed through this process, I created groupings in multiple ways and then arrived at the themes I found emerged from the data. Finally, I performed another review of the transcripts with keeping in mind my identified themes and looking for comments that are applicable. I repeated this process with my additional sets of responses from semi-structured interviews with teachers.
For “analyst triangulation” (Patton, 2002, p. 556), I sought a researcher colleague to independently analyze and perform coding on approximately 30% of my data. Saldana (2016) states that collaborative coding may introduce varying ways of analyzing and interpreting the data. Additionally, my researcher colleague and I met to see when our individual coding endeavors would “harmonize” (Saldana, 2016, p. 36). We were in alignment with 90% of our coding and we discussed and resolved these differences over the telephone. This also provided me with additional insight in my research. Thus, I have these code comparisons to assist with determining the reliability of my coding scheme.

During my data analysis, I bracketed portions of the interview that I found intriguing in accordance with Seidman’s (2006) advice. Seidman states this process incorporates data analysis, interpretation, and the act of making meaning of the responses. In addition to developing and sharing profiles of my participants, I sought categories to investigate for potential thematic connections (Seidman, 2006).

Furthermore, I analyzed my observations from reviewing course design as well as the syllabi. I believe this information is helpful in gaining additional insight into how teachers approach transitioning from traditional to blended learning environments. Regarding screen prints of course designs, I prepared notes similar to the process I completed from reading through the semi-structured interviews with the blended learning participant teachers.

Through analyzing the time-ordered matrices of the syllabi, I saw the “process of change” (Miles et al., 2014, p. 197) as teachers transitioned from face-to-face to blended teaching. This provided a comprehensive visual of the sequence of events. Miles et al. state this assists with comprehending occurrences chronologically.
I considered my themes as I reviewed the course design sections along with the assignments within the syllabi and the layout of the syllabi. By seeing if additional data is related to existing potential themes, I progressed toward a somewhat deductive process (Merriam, 2009). This led to discovering new categories and determined initial categories to be subcategories of an overarching theme as Merriam describes.

After thorough and continuous review of my data and reaching a point where the review did not lead to new findings, I reached a state of “saturation” (Merriam, 2009, p. 183) and according to Merriam, reached the full deductive stage. My goal was to reach “analytic periphery” (Yin, 2009, p. 186). Yin uses this phrase to describe when the information alone becomes of decreasing significance in the study being performed.
<table>
<thead>
<tr>
<th>Research Question</th>
<th>Research Methods</th>
<th>Data Analysis Methods</th>
<th>Quality Control Safeguards</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) How may teachers compare and contrast pedagogical methods used in face-to-face and blended learning credit recovery courses?</td>
<td>Interview Time-Ordered Matrix</td>
<td>Qualitative Coding Seeking Themes Finding Patterns</td>
<td>Avoiding asking biased or leading questions Data Triangulation Second coder for approximately 30% of my data Keep event reporting in line with research questions</td>
</tr>
<tr>
<td>2) How do high school blended credit recovery teachers determine the academic and non-academic online activities they believe will increase student engagement?</td>
<td>Interview Course Design and Document Review Time-Ordered Matrix</td>
<td>Qualitative Coding Seeking Themes Finding Patterns</td>
<td>Avoiding asking biased or leading questions Data Triangulation Second coder for approximately 30% of my data Keep event reporting in line with research questions</td>
</tr>
<tr>
<td>3) What special opportunities and/or challenges do teachers find credit recovery students may bring in regards to blended learning?</td>
<td>Interview Course Design and Document Review</td>
<td>Qualitative Coding Seeking Themes</td>
<td>Avoiding asking biased or leading questions Data Triangulation Second coder for approximately 30% of my data</td>
</tr>
<tr>
<td>4) What are facilitators, barriers, and constraints teachers may have encountered in transitioning to teaching blended credit recovery courses?</td>
<td>Interview Course Design and Document Review</td>
<td>Qualitative Coding Seeking Themes</td>
<td>Avoiding asking biased or leading questions Data Triangulation Second coder for approximately 30% of my data</td>
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3.6 Ethical Considerations

Because human participants were involved in my study, I submitted my proposal to the Institutional Review Board (IRB) and did not start interviewing teachers or gathering other supplemental data until I received approval to progress. As I was the sole researcher for this study, I conducted ethical behavior in reviewing data collected and incorporated all I had discovered along the way with doing my best to not alter my findings to my personal perceptions. Merriam (2008) states that case study authors as well as readers need to realize biases may ultimately impact the research findings. By keeping this in mind, I reduced my personal bias from having an effect on my conclusions.

Moreover, I was careful while interacting with my human participants. Merriam (2008) states that “leading questions” (p. 99) will demonstrate a bias or assumption by an interviewer. As I prepared my interview questions and performed interviews, I worded my pre-written and impromptu questions in a manner that would not demean my interviewees or attempt to influence their responses. Following Seidman’s (2006) practice, I conveyed direct quotes from participants with similar replacement phrases in brackets and used ellipsis when removing a portion of the discussion within the quote. I interacted attentively with my participants.

Furthermore, I had an open mind and considered all responses provided to me. Booth, Colomb, and Williams (2008) states the importance of avoiding misrepresenting opposing views and ensuring the source data is authentic. Hence, I respected my participants and readers by being ethical in my research and reporting.
CHAPTER 4: FINDINGS

4.1 Introduction

Findings from the research derived from my data analysis were predominantly in the areas of technology, motivation, time management, and community building as well as in the areas of student engagement, collaborative learning, academic inquiry, student literacy, and student technology access. The participant responses were very helpful in sharing their beliefs, perceptions of experiences, and recommendations regarding blended learning. When more than one study participant discussed the same belief, perspective, and/or recommendation, I considered this to be a priority for including as a study finding.

4.2 Teacher Perceptions of Student Technology Skills

Although the participants acknowledged their students had good social media skills, over half of them reported their students were surprisingly lacking in computer skills. The participants found the students were able to learn how to navigate the learning management system; however, were challenged with performing basic computer tasks. Specifically, the participants mentioned students not knowing how to create a desktop folder, organize their Google folders, or use a flash drive.

Sophia noted that while her nursing assistant high school students are adept at using mobile phones, they are challenged with computer skills. She explains this by stating, “But I think a lot of times, we think they’re so tech savvy with their phones that they’re tech savvy with a computer and it’s not the same.” Similarly, her assistant, Claire, shared that their students are writing the same way as they text on their mobile phones, such as using abbreviations.

Furthermore, the science teacher, Leah, expressed that her students do not have the basic computer skills and the district does not offer courses in this. In the past, the district offered
Microsoft Office courses; however, she shared these were lost because of budget cuts.

Regarding her students’ computer skills, she explains, “They don’t know actually how to use computers. They know how to navigate through something you’ve trained them on over the years.” The English teacher, Lila, described one of her students as not being comfortable using the computer.

While the welding instructor, Wyatt, also finds his students to be in need of better computer skills, he believes they can readily improve on these because of their overall technology familiarity. Wyatt stated, “… they don’t have good computing skills, they have good social media skills, while that’s true, it’s a very small step to move them toward good computing skills because they’re familiar with the format.” Hence, Wyatt felt that although student computer skills were inadequate, he also believed they could readily learn these.

The social studies teacher, Victoria, also commented on the influence of students’ social media skills in her blended learning courses. She commented that she is “teaching to their world” and discussed how the students were blogging that they wished the learning management system had a “like” button they could use for other student posts. The Advanced Placement mathematics teacher, Evan, found his students do well with the technology and specifically mentioned their ability to navigate the online platform.

4.3 Teacher Perceptions of Pedagogical Methods for Student Motivation

The participants spoke of diverse ways they motivate students in their blended learning classes. The teachers spoke of incorporating pedagogical motivational strategies appealing to student intrinsic motivation as well as implementing extrinsic techniques. While some of the teachers expressed their preference for intrinsic motivation, they still found the benefit of incorporating extrinsic motivation as well.
4.3.1 Teacher Perceptions of Pedagogical Methods for Intrinsic Motivation

Luke stated while he uses both intrinsic and extrinsic motivation in his blended learning courses, he predominantly focuses on intrinsic ways. Luke has found that the more readily students see the coursework related to their lives, the more motivated they tend to be with the work. Regarding his Financial Literacy course, Luke noted:

“That one’s a lot easier to because I’m teaching them something that is going to be useful in life and once I get them to understand that, I don’t have to push a whole lot to motivate at that point."

Other ways Luke motivates his students includes being a “cheerleader” for them and helping them to realize that it is “not uncommon to struggle” and to help them to believe in themselves. When additional support is needed, Luke contacts the students’ parents in a positive way to “rally” together in motivating the student. He noted the high importance of repeatedly getting the message to his students that they are capable of learning the mathematics.

Leah also spoke about addressing the personal side of students when talking about motivation. She emphasized the value in walking around while the students are working and engaging them in conversation. Leah stated, “The important thing I think with all of this blended learning, is to not take away the personal side … But it’s more of a guiding along the way.”

Wyatt works toward his students being self-motivated learners. He stated, “But the whole idea is I try to explain to them and use computers all the time to help them understand that they should be self-motivated learners.” He has “transformed the class to a heavy research-based concept” in which even some test questions require students to find the answers on the Internet.

Sophia also spoke about the value of students being able to relate the lessons to real life. One type of questioning she does is to bring them into the lesson to see the purpose. An example
question that Sophia gave of this was, “Does anybody in here have a family member who has diabetes? Has anybody ever experienced this?” She explained discussions such as these show the students, “This really happens to people in this world.”

Evan’s students are intrinsically motivated by the fact they even have the ability to take the higher level mathematics courses via blended learning. Without this concept, the students would not have the opportunity to complete these courses prior to college. Many districts do not have enough students interested to merit having a class offered in their high schools because of funding limitations. Thus, Evan’s students are happy to have these offerings.

Furthermore, Evan explained that he uses the same ways to gain interest in the mathematics lessons with his blended learning students as he has in courses he has taught in a full face-to-face setting. These include using probing questions, puzzles, and other discovery-based methods. However, he commented that some of the discovery-based activities are “….more fun when they’re all in a room together to hear them as individual students go, ‘Oh wow!’” Hence, he feels some of these activities “….might not transfer as well.”

4.3.2 Teacher Perceptions of Pedagogical Methods for Extrinsic Motivation

The participant teachers spoke about extrinsic methods for motivating students in their blended learning classes. Three of the teachers spoke of grade-related methods of motivating their students, such as connecting badges, giving bell ringers, and having grades readily available on the LMS. Other extrinsic motivators the teachers used included implementing the flipped classroom concept, virtual games, and food.

The science teacher, Leah, replied, “…. they just kind of do it,” when asked about her motivation techniques during the first interview, question 2a. She explained how she approaches the instruction in her blended learning courses with the flipped classroom concept of the students
watching content-related videos prior to the lessons. Bergmann and Sam (2014) spoke of this term when they started to record their lessons in advance and posted online. In this way, their students were not missing content when they would miss class for various reasons, such as athletics. Bergmann and Sam (2014) stated this provided time for “richer activities” (p. 29) during class.

Leah also discussed how the students sometimes have online games to do as a class. However, she does not really feel this is needed to motivate them. Thus, for the most part, Leah finds her students to be self-motivated in her blended learning courses.

Leah and Victoria described different experiences with students being able to earn badges and their responses to this. Leah explained there are badges the students can earn in Buzz for their online game performance that are not used as the students appear to be “…bored with that concept, that idea.” On the other hand, Victoria spoke of her students responding well to earning badges in Buzz.

Victoria spoke of her directly awarding the badges based on students being timely with submitting their assignments and the quality of their work. Some students question her when they find they did not earn a badge on an assignment. Victoria described the various ways she has available to grant the badges:

“I can either award them individually and give them a little note about why they got a badge, or I can actually give them a blanket one where … if you finish this unit or this test, then you get a badge …”

Claire also brought up grades as an extrinsic motivator. When the students come into class, they have a bell ringer to complete. This involves the students completing a short quiz about recently covered material immediately after entering the classroom. Although Claire
stated this does not motivate all students, she believes this does for some as they start working on the bell ringer right when they get into class. Because this activity is in the learning management system, Buzz, Claire explained the students are able to find out their grade at the beginning of class. Sophia stated that prior to having Buzz, the students did not see their grade until the five-week, ten-week, and fifteen-week marking periods. Hence, Sophia believes the students are motivated by having the ability to see their bell ringer grade immediately.

As another option, a couple participants use methods of taking away time or a favored activity to assist with motivation. Luke and Lila spoke about detaining students as a way to motivate their students to be timely in completing their work in the future; however, fortunately neither teacher has found this to be needed very often. Luke brought up “… taking their time …” as a way to encourage them to be more proactive in doing their work so they do not need to stay after school to complete their assignments. This is also connected with grades as a motivator as this provides a way for students to get their work completed.

Similarly, Lila brings students into her classroom to make progress on their work during lunch and study halls if she sees they are not getting their assignments done. Luke also stated that students who are involved in sports have motivation to earn good grades so they can continue to participate. Hence, students have the motivation to focus on their work before losing time from being involved in a more enjoyable activity.

Wyatt discussed how he tells his students about the value of having the knowledge of navigating and using the online learning management system, Buzz. He emphasizes how the use of technology is growing in society. Wyatt shared that when he talks with his students about the value of computing skills, he tells them, “these are the types of skills that will take you beyond
an entry level employee and will assist you in college because colleges have so much online 
now.”

Yet another form of motivation is offered by Lila for her credit recovery students. She 
has breakfast and snacks available during the sessions. Lila states, “Food is a good motivator.” 
She shared that many of her students would not eat breakfast otherwise. Thus, Lila believes this 
small gesture makes a significant difference.

Sophia and Claire also described having food in the class as making a positive difference. 
In their case, the students have a kitchen available in their classroom in order to have the 
appearance of a nursing home setting. Claire shared that sometimes the two teachers bring 
snacks and other times they bring pancake ingredients. As Claire sees student enjoying this 
activity, she reflected, “So we usually view that to kind of reinforce the positive behavior going 
on in the classroom.” At times, the snack activities are integrated with the content lesson.

Hence, the participant teachers reported using a myriad of ways to motivate their blended 
learning students. This variety included both intrinsic and extrinsic strategies. The most 
commonly used ones in this study were online games, food, and grade related with four of the 
teachers using online games and three of the teachers using food and grade-related methods. 
Other practices included connecting to real life, discovery-based lessons, personal connections, 
badges, and flipped concept. Details are shown in Figure 8 below.
Figure 8: Participant Strategies to Motivate Students
4.4 Teacher Perceptions of Time Management

The participant teachers shared their perceptions of pedagogical methods for student time management as well as their perceptions regarding their own time management. The teachers shared a variety of strategies they believe assists their students with time management and stated their perceptions that adolescents have challenges with time management. Additionally, the teachers expressed how they perceived their experiences with blended learning to save them time with areas such as grading and keeping track of assignment submissions.

4.4.1 Teacher Perceptions of Pedagogical Methods for Student Time Management

All of the participant teachers shared challenges with assisting their high school blended learning students with time management. These strategies included goal-setting, using a text-based application to send students reminders, requiring students to review their daily agenda on the learning management system, and providing limited late passes. The teachers keep in mind how adolescents tend to have challenges with time management.

Luke acknowledged his struggles with time management when he was an adolescent and keeps this in mind when working with his high school students. He spoke about considering the discipline level of his students. This can clearly be seen in the following quote from him:

“Thinking back to the young me who did the online, I wasn’t always the most disciplined. As I suspect many of my high school students aren’t going to be the most disciplined. So when I do try to integrate technology, I have to think about what sort of structures I’m going to put in place to encourage punctuality with deadlines and not just waiting to the eleventh hour the night before.”

One structure Luke is using with his students to assist with time management is using “S.M.A.R.T. goals” which he also references as “checkpoints.” S.M.A.R.T. goals are specific,
measurable, achievable, results-focused, and time-bound (University of Virginia, 2016). He elaborates on this by explaining that some of his courses have “multi-faceted activities or projects” which results in needing a way to break these down into smaller parts. Luke feels this is important as it provides the students with reflection time to see if they are on track with their work so far and can think if they need to see assistance from the instructor. He credits one of his English teacher colleagues with providing this helpful time management idea.

Several of the teacher participants use the technology application, Remind, to connect with their students and parents/guardians about upcoming deadlines as well as other content-related information. Luke uses Remind as a way to reinforce the checkpoints by sending students reminder texts. While Leah used Remind in the past, she is now considering implementing this technology tool again. She struggles with building student independence with keeping track of their deadlines on their own and assisting them with reminders to increase the probability they will meet their deadlines.

“I’m considering going back to Remind App. I’m on the fence about that. I don’t know where I fall with that. It’s great because it reminds them of things they need to do, but in the same sense, it takes away their responsibility for remembering on their own.” The nursing assistant instructors, Sophia and Claire, take a different approach with reminding their students of upcoming due dates. They require their students to log into the learning management system on weekdays and view the agenda with noting deadlines. In this way, students are unable to say that they did not receive any reminders.

“It takes that argument away that you didn’t tell us or you didn’t remind me. Every day they have to log in to their Buzz account. So, they have the opportunity to look at that,
whether they choose to do it or not. It is there. So, we have that backup to say we did
tell you and we told you this many times.”

Similarly, Wyatt posts assignments with deadlines; however, he does so using the
physical Whiteboard in the classroom. He explained, “It’s their job board. They have a
deadline.” In this way, Wyatt mirrors the expected workplace experiences students will have.

“So, I use the Whiteboard, and I’ve seen it in a lot of welding shops and factories, they
have basically a Whiteboard or a job board. And they put things up and they assign
people to those tasks so I mimic that in the classroom with the Whiteboard.”

Victoria uses a “late-pass system” to assist her students with time management. The
students are given three late passes at the beginning of the year. Once they have used all of
these, the students start to lose points on assignments turned in late. However, in the beginning
of the school year, she tends to excuse the late passes as students are getting used to the system.

Additionally, Victoria uses screencasts to assist student understanding of procedures.
She described this as “talking them through it so I’m just videoing my screen and then I’ll save
it.” The students can then view these to save time in performing procedures. Victoria happily
stated that these steps on her part lead to “micro successes” in her students learning how to
navigate the learning management system. The recorded videos save Victoria time as well.

4.4.2 Teacher Perceptions of Their Time Management

Several teachers spoke about how implementing blended learning has saved them. One
of these ways is with grading. Claire discussed how the combination of having the ability to
have the assignments in the computer for either her to grade or the computer to grade has saved
her time. She states the ability to have assignments in the learning management system, Buzz,
by stating this “made a big difference in the amount of time that I’m spending outside the classroom grading.”

Along with this, Claire shares the benefit of students having the ability to submit assignments into the learning management system has placed more accountability on the students. This has also been a time saver with students no longer stating they placed a paper on her desk and she lost it. Now, the submission history can be reviewed to confirm if a student has submitted an assignment.

Leah also spoke about efficiency with using blended learning. She uses EDPuzzle, which provides the ability for students to watch videos and respond to related questions. Although the software contains educational videos for use, Leah opts to create her own. Leah states that the computer self-grades the multiple choice and true-false questions and then she goes back through and grades short answer questions. Students have the ability to retake these for a higher grade, especially because some of these only have two questions. Leah elaborates on this by stating:

“So, I choose to make my own. And when I make my own, I just simply take my PowerPoint presentation and I record me talking into the presentation and then I upload it as an mp4. It’s completely free. It’s awesome.”

4.5 Teacher Perceptions of Community Building

There are diverse ways the blended learning teachers implement to build community-building within their courses. These vary from activities focused on students getting to know one another to students being assigned a partner for an academic activity. Some of these occur face-to-face, others online, and yet others a mixture of in person and online interaction. During all of these, the teachers made sure to monitor either in person or online student actions. The
teacher participants all had the same goal in mind of creating a more comfortable setting to increase student learning.

4.5.1 Teacher Perceptions of Incorporating Student Acquaintance

One of the ways the teacher participants use to build a sense of community in their blended learning classes is by having activities designed for everyone to get to know each other. Sophia and Claire facilitate acquaintance sessions with their nursing assistant students at the beginning of the school year that involve getting to know each other’s names as well as what they may have in common. Sophia provided details about a game they do in a circle format to help the teachers and students know the names of everyone in the class. Sophia noted that this is done during the face-to-face portion as this would be not as easily done online.

“Well, usually what we have them do is formulate a circle … And then that person has to say my name, the person that was after me and their name and we go around the circle until we kind of get to know everybody’s name. So that would be kind of hard to do on a computer.”

Other activities Sophia and Claire do with their students early in the school year are Human Chair and “I Like Purple.” Claire explained that with the Human Chair game, the students sit in chairs around a circle facing back to front, similar to train style. The students lean back on each other’s legs and then the chairs are removed. Claire stated that by the end of the game, “you’re literally in like a reclined chair position leaning on each other, holding each other up.”

Sophia described the “I Like Purple” activity as one that also involves chairs. In this case, there is one less chair than the number of students.
“One starts out in the center and anybody who likes purple has to give them a High 5 and get to an empty chair. And the person left would be a new person. And then they would have to say something. And then you keep doing that.”

Sophia explained that one of the benefits of this activity is getting to know what her students like. Sophia stated that these community-building interactive activities “lighten the mood” and are fun. In fact, Sophia commented that this time of the school year is “one of my favorite times of the year.”

Claire elaborated that these beginning of the year activities provides them with insight about their new students. She stated that having this time “…allows us to see some of their personality.” They are able to see who enjoys being physical, which students “gravitate” to each other, and student preferences of colors, etc.

Furthermore, Sophia explained the importance of the students getting comfortable with each other, especially with them being in the healthcare field. Along with this, she emphasized the significance of teamwork. Sophia emphasized the value of nursing assistants being able to work together regardless of their personal feelings toward each other.

“It gets them comfortable in the class and comfortable with us and comfortable with each other. In our program with them becoming nursing assistants, teamwork is important. We need them to be able to work with each other, regardless if they like them or not.”

Hence, both of the nursing assistant teachers find a multitude of benefits regarding having community-building activities in their face-to-face portion of their blended learning courses.
4.5.2 Teacher Perceptions of Strengthening Student Relationships

Sophia and Claire also infuse community-building activities into their courses at other times during the school year. One of these ways is when the students work together in baking pancakes and another is taking the students on a nature trail as part of “Fitness Friday,” according to Claire. A unique activity the teachers shared was bringing in Sophia’s pet baby rabbits into the classroom.

Both Sophia and Claire believe that community-building activities help in making a comfortable environment, which they feel in turn will assist students with their learning in general. They both spoke about desiring their classes to feel like “family” to their students. Claire expressed that student participation in community-building activities “…makes them feel comfortable in the environment. And I think because a person is comfortable in the environment, they’re going to learn better.” Sophia followed this comment by associating this belief with their content area in stating, “So, they know coming in to Certified Nursing Assistant, yes, there is a lot to learn. But it is also supposed to be a warm environment.”

This can readily be seen as Sophia and Claire describe the class climate with Sophia’s baby bunnies being brought in one day. Sophia excitedly states, “We had a really, really good day with them being able to interact with the baby bunnies and I feel like our food and stuff that we do has that same effect.” One of the students gained approval from her mother to bring one of the baby bunnies home. She and another friend who is also in the class texted Sophia all weekend to make sure the bunnies were receiving the proper care.

The experiences Sophia and Claire had with their students regarding the time with the baby bunnies, were very positive. Sophia proudly stated, “So, we really bonded with them….” Claire commented that she had never seen the one student who took the bunny home complete an

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assignment; however, Claire laughingly expressed that “she did three assignments with a bunny on her chest.” In addition to this student showing caring, Claire provide an example of students caring with asking teachers if they were bringing in a gluten-free food option in addition to the other snacks as one of the students has a gluten allergy. Claire has seen how these activities positively influence her students as she shares, “… they learn from it and they watch out for each other even though they don’t always like to make it known that they care about each other in this class. We see it during these activities.”

However, Sophia also shared how they as teachers need to be careful to not let the students get too off track with their lesson when they provide time for community-building activities. Sophia confides, “I think our problem is sometimes they manipulate us with these little things and we don’t get back on track” as she mentions that the community building is to only be a “small part of the day.” Therefore, they work toward keeping the students on schedule.

Luke also expressed how he incorporates community building into his blended learning courses. However, he does this through the online portion of the classes. Luke uses technology software for students to connect, such as the Remind phone application and Google Classroom. Luke stated that he especially is able to do this with his Financial Literacy students. He encourages them to post about class-related information and write to each other.

Regarding Google Classroom postings, Luke shares, “In the discussion, I make it so that students can post and can offer up and interact together.” These postings include topics such as article findings and areas in which students are seeking assistance with their understanding. Luke remarked that within Google Classroom, the students take the opportunity to “talk it out.”

Luke also uses Remind for students to interact via texting. He sets virtual office hours so the students will know when he is available to answer questions. Sometimes, Luke describes this
time period as turning into a “big discussion” with the students texting each other separately.

Therefore, like Sophia and Claire, he shared that he needs to intervene at times to keep the
students on track. Luke spoke about taking the approach of commenting that there is “good
conversation” occurring and about the importance of the “whole class” being a part of this. Luke
summarizes this with stating, “Just like in a traditional classroom, you want there to be that sense
of we’re in this together.”

Leah, Wyatt, and Evan all involve students in activities with partners to build community
within the classroom. Leah responded that she integrates community building into her lessons
by having her students “continuously working with new partners” in completing science
activities. She does this so that the students will have face-to-face discussions. She explained,
“They’re not losing out on the aspect of human interaction, which I think that some of them lack
a skill in if they actually don’t know how to communicate without devices.”

Some of the partner science activities that Leah assigns her students involve a computer
and when they do, she has the students switch back-and-forth with typing. Other than this, Leah
stated she does not implement other community-building activities as the students work well
together. The students already know each other with being in a small school district.

Likewise, Wyatt stated that there is a “community atmosphere” in his classroom with
students partnering on assignments. This occurs in the classroom with and without use of the
computer. Wyatt explained the students share their welding skills and work on experiments and
projects together. An example of partner interaction on the computer is students working
collaboratively on quizzes based on videos. He finds this enhances student learning. Regarding
partnering on the quizzes, Wyatt stated, “And then they’ll try to collaborate back and forth to
accelerate the learning process. But I think that’s a little bit of a team-spirited approach to that.”
A new partner activity Wyatt is planning for his students to do involves researching Welding careers. The students will need to work together in creating Google Slides about a Welding trade or position after researching related information such as the needed skills, expected salary range, and potential locations. They will then present to the class.

While Evan also has his students partner on assignments sometimes, he implements community building in other ways as well. Evan believes community building in classes “leads to student learning.” He states that his students come from various schools and do not all know each other. When students work in pairs, Evan feels “they learn to start communicating with each other and ask each other questions.”

One method Evan uses involves the computer software, Canvas. Canvas permits for written peer review. When using this, Evan requires his advanced level mathematics students to make one or two comments on other students’ homework. Regarding the ability for him to see the comments online, Evan noted, “That’s pretty nice functionality. I didn’t always have that at my disposal.” Evan monitors the comments to see if they are constructive and reflect that the student doing the review read through the other student’s work carefully.

Additionally, Evan often has his students work in pairs to review a written solution that has some flaws. The students need to find the errors. He finds his students do better in finding these when working together. Thus, Evan remarked, “So, that’s how community building can enhance their experience.”

Victoria also integrates community building within the online portion of her courses. Students have a discussion board in which they can ask and respond to each other’s questions. For example, Victoria had three blended learning classes of Economics in the same semester. The students in all the sections were able to talk with one another and assist their classmates via
the learning management system discussion boards. Victoria monitors these boards closely and emphasizes the importance of netiquette.

Victoria believes that community building helps the students see “it’s not just them. They’re not the only ones that are struggling.” She feels strongly that her students have the sense of belonging in the classroom community. Victoria shared, “It’s just making them really have that sense of ownership and they’re all in the classroom together is really a vital piece for them, wanting to move forward and be successful in the class.”

Although Wyatt is currently not using discussion boards with his students, he plans to in the following school year. One way he envisions using these is “to pose those inquiry questions and have them weigh in and see if they can come up with some answers.” He also spoke about having the discussion boards for his students to ask and answer questions that they would otherwise ask him directly. Wyatt stated he would moderate these boards. He related the discussion boards to the work environment by stating, “… similar to the discussion boards you see on different trade web sites.”

Hence, the teacher participants highly value having community building be part of their blended learning courses. They found this to directly relate to increased student learning. The teachers believe students will learn better when they are more familiar with their teachers and classmates and feel more comfortable in their environment.

4.6 Teacher Perceptions of Academic Student Engagement

While there was variation in how the participant teachers approached increasing academic student engagement in their lessons, all of the teachers felt this was a necessity. The methods the teachers used for student engagement included hands-on learning, using features within their learning management system, and providing students with the choice of medium
they would like to use in demonstrating their understanding of a lesson. Hence, the teachers perceived these pedagogical methods to involve students in being interactive with their learning as well as provide ways to adapt instruction to individual learning styles.

The teachers perceived these engaging activities to increase student motivation for learning. Suwantharip and Wichadee (2014) and Carr and Bossomaier (2014) also found the use of technology software to assist with student engagement and motivation in learning. Post-secondary students in Suwantharip and Wichadee’s (2014) study reported enjoying using Google Docs collaboratively and found this motivating. Similarly, Carr and Bossomaier (2014) found student use of an online Physics game to provide student engagement and motivation.

4.6.1 Teacher Perceptions of Hands-on Learning

Victoria spoke about the high need for her to incorporate student engagement in her classes with teaching at a BOCES. She commented that the reason why students tend to enroll in BOCES courses is because they are hands-on learners. Victoria shared the example of giving her students links to conduct a “mini-research” and then write a reflection regarding this on the Buzz discussion board. The students have a rubric for each research assignment with detailed criteria.

Victoria explained that the rubric leads to the students being more engaged. In addition to providing them substantial information on how they will be graded, she writes comments on the sections to provide feedback to her students. Victoria expressed how much she values providing informative feedback by stating, “I’m going to tell them what they’re missing and why and how to re-apply themselves so they’re better for the next assignment or if they want to redo that assignment as well.”

Victoria also demonstrated her use of WebQuests through submitting screen images of her LMS. She also brought this up during her second interview when talking about discussing
assignment options with other blended learning teachers. Victoria provides her students with links to use in answering guided questions to assist with their exploration of the presented topic.

Lacina (2007) describes a WebQuest as “an inquiry-based technology activity” (p. 251) in which most of all of the information is to be found on the Internet. Bernie Dodge and Tom March are credited with first designing WebQuests at the San Diego State University in 1995. These are based on the constructivist philosophy in which students build their learning through cooperative learning and scaffolding. These also provide the opportunity for higher level learning (Lacina, 2007).

The other BOCES participant teachers, Wyatt, Sophia, and Claire also discussed having “hands-on” activities in their lessons. Wyatt described his students having hands-on time in the welding shop to be “paramount.” He expands on this by stating, “You only learn to weld by spending time in the shop… They came here to work with their hands and I make sure they get adequate time to do that.” In fact, he emphasized his strong belief in this by stating, “I hesitate to bring anything in that does not have a hands-on component.”

Wyatt paired this by describing how he uses the computers to assist the students with gaining theoretical knowledge regarding the concept. Wyatt stated that this accelerates the understanding with students having access to the computer visuals. Furthermore, he explained this gives them more time in the shop.

Along these lines, Sophia and Claire also spoke about their students participating in “hands-on” lessons along with learning about the related concepts. Claire described that “…they get the classroom piece, the lecture piece, and then they do a hands-on.” She provided the example of their students learning the cardiac system using models of the heart and getting their
vital signs before and after doing activities that would accelerate their heart rates. In this way, they combined interrelated nursing and science lessons with their students actively engaged.

Furthermore, the BOCES teachers Sophia and Claire make use of Google Docs and Google Slides in their lessons. Sophia explained, “We use Google Docs. We have videos embedded into lessons and we have academic lessons with our program but also we have our English, math, and science teachers who incorporate their academic lessons into our program.” Claire also stated the students use Google Slides to present their work. In addition to these programs enhancing student learning, Claudia explained that the students have this work become part of their portfolio which is saved in the Google Cloud.

Furthermore, the science teacher, Leah, also described hands-on learning activities she does with her students. She named a new one she started this school year as the “Mystery Box Lab.” Leah explained that she came up with this idea because she “was trying to tie it into the new Science standards and the new Science standards is essentially just hand them tools and have them run with it.” The activity involved students needing to be creative in exploring what to do with the materials, conducting the lab, creating a presentation together using Google Slides, and presenting.

Each group of three students was provided with a box with different tools for completing a heat lab. The students needed to determine what steps to take to complete the lab and then perform these. After the students collected the data, they documented and graphed the measurements in Google Spreadsheets and then created their presentation in Google Slides. Through the teaching technique of “jigsaw,” the students individually presented their work.

“So, say you’re in group number 1, all members of group number 1 will have to present to different people. Each group has 3 kids. So it works out mathematically that if I take
my 4 groups of 12 kids total, I can jigsaw them so every kid is responsible for presenting to 3 additional people.”

Leah stated this activity also assisted in covering four separate labs within a reasonable time frame and led to students having a “deeper understanding” of the science concepts.

Additionally, Leah described other interactive technology tools she uses with her students to increase engagement. Leah uses ExploreLearning at www.explorelearning.com, for simulating interactive labs online that either are not able to be done in the classroom or produce better data using the virtual labs. She also uses Quizlet for student use in vocabulary review and playing games. Leah expressed that her students enjoy participating in the Quizlet games competitively. Her school district pays for a subscription for both of these software tools.

Although Quizlet may be used for free, the paid version tracks student data. Leah believes that all these activities she does with her students increases engagement because she provides them with a variety of learning opportunities.

Sophia and Claire just started using Quizlet. They are using this to assist their students with preparing for the National Occupational Competency Testing Institute (NOCTI) Career and Technical Education Nursing Assistant exam. They found this to be very engaging for their students. Claire excitedly stated,

“Just yesterday, we used Quizlet with our seniors and we are prepping them for NOCTI ... it was the first time we used it and it was really impressive to watch them ... they realized it was a competition and they became engaged and they ... started to become competitive.”

Hence, there are diverse ways the participants used hands-on learning in their blended learning classes which they found increased student engagement, motivation, and collaboration.
In all these ways, the students were able to be directly involved with their learning. The technology tools assisted them with increasing their content knowledge.

4.6.2 Teacher Perceptions of Learning Management System Features

Evan spoke about student engagement from the perspective of his students interacting on a class discussion board. He stated that student engagement involves students “… showing humility” and “… showing interest in a topic.” Evan relates to his students by acknowledging to them there will be a problem they will not know how to do and expressed that student engagement involves students being asked to comment on a problem they have completed.

Evan stated, “… If someone writes a solution to a problem, I can post that into the forum and ask other students to … read the problem, comment, show their solution if they did it slightly different.” His expectation is to see the students talking to each other about the problem or let him know what “everyone’s common question is” before they ask him. Hence, he incorporates students interacting on the discussion boards about the math problems.

The English credit recovery teacher, Lila, spoke about the “vocabulary arcade” in the learning management student being a way that assists with getting her students engaged in their lesson. Prior to this, there is an introductory section within Odyssey to get the students familiar with the unit of study for the session. Additionally, with the credit recovery students, the related English project is eliminated in favor of focusing on multiple choice, matching, and short-answer questions. By doing so, Lila feels student engagement with the lesson is greater.

4.6.3 Teacher Perceptions of Student Choice

The math participant teacher, Luke, described yet another way of getting his students engaged in his lessons. He recognized this importance in stating “… anything that’s different … especially in math, because it’s too easy to get into the rut of notes, worksheet, homework.”
Along with differentiated instruction being emphasized in Luke’s district, he described that he is making more of an effort to “provide student choice when it comes to how they’re going to illustrate what they’ve learned for the day.” He explained that this may vary from students opting to complete a worksheet to making a video with their phones explaining how to solve a math problem.

Therefore, there are a variety of ways the participant teachers use to increase student engagement in their blended learning classes. While some of the teachers focused on describing hands-on lessons both physically and virtually, others spoke about student interaction through use of their learning management system and providing diverse student choice on completing a lesson assignment. In all these ways, the teachers perceive the students are directly engaged with their learning.

4.7 Teacher Perceptions of Non-Academic Student Engagement

The participant teachers described a variety of fun ways that they incorporate non-academic student engagement into their lessons. While all of these had some form of connection to the overall curriculum, they brought in enjoyable and general life-applicable perspectives. There were very diverse approaches to bringing in this form of student engagement into lessons.

Victoria has fun with integrating non-academic student engagement into her classes. These activities relate to the curriculum. Sometimes she dresses up as historical characters. Victoria also occasionally brings in food related to the historical time period or economics unit they are discussing. Additionally, the classes take periodic community field trips. Regarding these diverse activities, Victoria excitedly expressed, “that anticipation leads my students to show up when they’re supposed to. And when they show up, then we have them.” Sophia and Claire also engage their students in an outside non-academic activity of going on “nature walks.”
Leah stated that any activity she does with her students at least has some type of “academic undertone” because of not having a lot of room in her schedule. Sometimes she plays review games with her students. For example, they play charades based on science topics.

Evan generally spoke about the non-academic activity he does of genuinely modeling to the students how excited he is about the mathematics lessons. He stated that in this way, he is “modeling something to help them have a happier life hopefully … it’s interpersonal.” He also works on getting the message to the students that they can still be enthusiastic about a subject even if “they’re not good at it” and shares with them that although he knows a lot of mathematics, he does not know all there is to know about the subject.

Luke also discussed non-academic activities from the viewpoint of helping students overall with their outlook in life. He works toward increasing student awareness that “the learning doesn’t stop when we walk out of the room.” One way Luke does this is through the Remind phone application as he, the students, and their parents can all engage in interesting conversations about a wide variety of topics, such as current events related to the lessons.

Moreover, Luke spoke about the non-academic activities he does with his students based on Kagan strategies, which focus on collaborative learning. Periodically, they take days aside to learn about each other. He explained how he sees this lead to stronger teams. He described these days as providing “… the opportunity to spread genuine interest in what the other people in the group are doing. All of a sudden, when Student A actually cares about what is happening with Student B, now they’re a true team.”

Wyatt also incorporates non-academic activities into his courses which have a connection to the curriculum. The students create welding products that are either sold in the school store for class fund-raising or used by the students as presents for family members or friends. For
example, the students welded Christmas trees, snowmen, and snowflakes. In the springtime, they welded flowers, such as roses and daisies.

The money raised from these welding fund-raisers may be used for SkillsUSA in which students compete with other school organizations as a team, field trips, or student welding t-shirts. Wyatt grades these welding art products based on effort only as the creations are diverse and decided by the students individually. He finds the students take pride in the outcomes.

“From what I saw from the Christmas fund-raiser activity and what I see some of the students doing going into the spring fundraiser, it gives them a little more personal ownership of the skills and knowledge that they’re trying to learn in the program.”

Hence, the non-academic activities the participant teachers shared tended to have some degree of connection with the curriculum. These all provide ways for the students to have a break from the more rigorous part of their school day. The hope some teachers summarized was that the students would gain a sense of enjoyment in their learning.

4.8 Teacher Perceptions of Collaborative Learning

Wyatt predominantly has his students working collaboratively in the shop. Although he is not doing this yet in the virtual portion of the class, he has plans to incorporate discussion boards in the following school year. Wyatt has his students do peer teaching within the collaborative learning in the face-to-face portion of the blended learning class.

“… because of the restriction on the amount of machines in the shop, and the different skills, students are learning different areas of welding simultaneously. So, I definitely do a lot of pairing and rotating and when I see some students have really have kind of got the idea with a certain welding process, I’ll often put them in charge of a few other students as I try to rotate them around.”
Wyatt also stated that he sees his students voluntarily assisting their peers when they see others are struggling with a weld. They go over to other students and show them how to get their welding to work.

Similarly, Leah has her students rotate working on a project together; however, she spoke about this regarding computer settings. If a pair or group of students is using the same computer, she has them switch who is operating the computer every question. Likewise, if the students are working collaboratively on a PowerPoint that is shared and students all have their own computers, she will assign them each a certain number of slides. Leah stated that in this way, “… everybody is interacting.”

Leah also discussed students interacting within her classroom with either two or three students together. In addition to getting the Science activities completed together, Leah commented on how the collaborative learning activities help students with developing their “human interaction” skills.

“… being that it is a science class, we are continuously working with new partners. When we divide up to do these different activities that we do, it’s almost always with a partner or two and then that way they’re not losing out on the aspect of human interaction, which I think that some of them lack a skill in if they actually don’t know how to communicate without devices.”

Luke discussed how his district emphasizes incorporating collaborative learning into instruction. The teachers, including Luke, participated in multiple Kagan workshops. He shared how now this has become embedded in the school culture. Personally, he implements the Kagan structure including team building exercises so students get to know each other better which he believes leads to them having stronger teams.
Luke varies how he groups his students. Sometimes he uses homogeneous grouping and other times, heterogeneous grouping. Luke described his observations and expectations of heterogeneous group members. He wants them to stay together in moving through their work.

“For some of them, the students who get it right away, the hardest thing for them to do is to not fly ahead … The days we’re heterogeneously grouped, I really rely on those kids to pull the rest of the group with them and not just leave them in the dust.”

4.9 Teacher Perceptions of Active Inquiry

While all of the participant teachers stated they encourage their students to ask questions, many of them also stated they often ask their students questions for them to seek out the answers. The teachers encourage their students to make use of the technology when researching topics for answers. They also believe in their students reaching out to their peers for solutions.

Many of the participant teachers spoke about the balance between being willing to answer questions and encouraging students to seek their own answers. Furthermore, several teachers spoke about encouraging students to ask questions by them modeling asking open-ended questions. The participants also brought up the importance of having a classroom environment in which their students would feel comfortable asking and answering questions.

4.9.1 Teacher Perceptions of Balance between Answering Questions and Encouraging Students to Find Answers

Luke provides his students with the option of either asking him a question face-to-face or virtually. Luke explained that if his students opt to ask him a question in the learning management system, they can correspond through text messaging. In addition to Luke teaching blended learning classes in his school district during the year, he teaches blended learning
summer school through BOCES. Therefore, he is in the room with the students to be available to assist with the instruction while they complete their online coursework.

Luke also discussed how he monitors the classroom so he can tell if a student has a question or if he needs to intervene in some other way, such as to motivate, when he notices that a student has been on the same page for a while. Although Luke stated, “we try to let them do as much of the exploration on their own,” he also acknowledged that students exploring online for an answer will not tend to be useful for some questions, such as ones about math concepts.

“At least in the math realm, there’s probably going to be points where there’s a major conceptual misunderstanding or just a flat out they’re missing something altogether, not even a misunderstanding. More times than not, exploring Google doesn’t really help them a whole lot.”

Luke summarized how he feels about students getting answers to their questions by stating, “… if they can seek out a solution without me, that’s awesome and I encourage them to try that but ultimately they need to know that I’m the safety net if it’s not working.” While he does not want his students to ask him questions “the moment they are having any interference or challenges,” he shared the value of him being available to assist with answers. Luke stated, that he is “an expert, a professional, and have all the years of training … that’s where they have to use that asset, too.”

Victoria shared she always encourages questions. For the responses, she balances students seeking answers and her assisting with “a basic rule” that if they have read the directions and taken more than five minutes to get started on their work, they are to call her over. She also has available an online forum where students can participate in a group discussion for assistance.
Wyatt also spoke about the balance he manages between encouraging students to answer their own questions and him responding. Wyatt commented, “I ask questions of them and make them find the answers more often than not.” He encourages his students to ask questions by having hands-on projects which according to Wyatt,

“… kind of force them into a corner where they have no choice but to ask a question or seek out an answer on their own because there’s just no other way they could deal with a certain fabrication or a build.”

Wyatt explained the type of questions he tends to answer are ones related to students exploring welding techniques on YouTube and asking his thoughts on how they may apply this to their projects. He shared that he has received questions such as these via e-mail into the night. Wyatt sees the benefits of this as he states, “So, you know that open line of communication being beyond the classroom has been advantageous as well.”

Wyatt extends this into the face-to-face portion of his teaching by setting up scenarios that he believes leads students to ask questions and discover answers. For example, students would first weld one metal a certain way and then when given a different metal would find cracked. This leads them to questioning and acquiring problem-solving skills for the workplace.

“It’s creating an environment where questions are welcome, questions are intended, and mistakes are anticipated, and even desired, because the next level is then finding those answers and fixing those problems because that’s the workplace.”

Sophia and Claire also explained how they encourage their students to ask questions while also encouraging them to seek the answers to some of their questions. For example, when they have assignments with questions, they let their students know to work on finding the answers if they directly come to them and ask for the answer. However, if their students tell
them they are not able to find the answer or are not understanding the question, they want their students to ask them questions so they can assist. Claire believes the students having the ability to see their grades on the computer has led them to be more likely to ask questions.

4.9.2 Teacher Perceptions of Modeling Asking Questions

Sophia described how they want students to ask questions during the face-to-face lessons by stating, “… we definitely encourage questions. We want those questions. We want the interaction. We want to give more in-depth information.” Claire shared they use open-ended questions when teaching to increase student questioning.

Claire described their questioning techniques in saying, “I think we ask a lot of open-ended questions that pulls questions from them. [Sophia] will put up a sign and say, ‘What does diabetes mean?’” Evan also discussed modeling asking questions to encourage students to do the same. He shared, “The first step I take is that I model curiosity and asking a lot of questions.”

4.9.3 Teacher Perceptions of Student Comfort with Asking and Answering Questions

Evan stated the importance of having the students be comfortable in class asking questions. He explained that he does this in a way to demonstrate to his students, “It’s fun to not know everything.” Leah also spoke about the importance of students being able to feel comfortable in asking questions during class. She does this by moving around in the class during lessons. She described her approach in stating, “I kind of stand in the middle and wander and hover and stuff like that. It opens up a comfortable location for them to just ask anytime.”

Along these same lines, Sophia shared how she wants her students to feel comfortable with responding to questions. She expressed, “You can find something about that answer that is correct like you’re on the right track …” Sophia expounded on this by sharing that she takes this
approach, “So they don’t now feel bad about answering that question if it was not really the answer I was looking for.”

When Victoria discussed the online open forum she provides for her students to ask questions, she also speaks about the importance of students feeling comfortable with interacting regarding questions. Students write posts asking others if they are struggling with an assignment and state they could use some assistance. Victoria stated this shows her students “have that trust level with me because I give so much feedback that they know I’m going to help them move forward … And they trust in their peers to do the same thing.”

Thus, between the participant teachers finding a balance between encouraging student questions and having them seek answers, modeling asking questions, and creating an environment in which students may feel comfortable in asking and answering questions, there is a lot of infusion of a question focus in their high school blended learning courses. Beyond students reaching out to their instructors for answers, the participant teachers perceive they build in encouragement to seek answers on the Internet as well as from conversations with their peers. In this way, the teachers believe they are building student capacity for finding answers in a multitude of ways.

4.10 Teacher Perceptions of Student Literacy

The teachers reported perceptions of student literacy, including reading and writing. One teacher found that some students who needed reading accommodations for text on paper were able to comprehend text on the computer screen without accommodations. Another teacher commented on the value of a computer program which will read text-to-speech for students who have this accommodation stated on their IEP.
Furthermore, two teacher participants perceived the students as needing improvement in their reading comprehension skills. Victoria believes the lower level of student comprehension recently is partially the outcome of the writing level in newspapers and social media. Lila perceives students benefit from using a vocabulary skills game related to their English lessons. Levine and Horton (2015) found that if students read relating to characters, they tended to comprehend their reading to a greater extent.

Half of the teachers also perceive student writing being in need of improvement. Teacher participants spoke of their students writing for class the way they would for texting on their phone or posting on social media. Teachers believe their students have benefited through teacher modeling of writing, collaborating with English teacher peers, and providing one-on-one writing assistance. Premont et al. (2017) also found students in need of improving their writing skills and that the incorporation of picture books assisted tenth grade students with their writing, such as word choice.

4.10.1 Teacher Perceptions of Student Reading

Interestingly, Wyatt brought up student ability to read on the computer screen who lacked the ability to do so on paper. Wyatt found this to be a great advantage for his blended learning students as this addressed individual student needs. Students who had accommodations stated in their Individualized Education Plans (IEP) for text to be read to them were able to read on their own when the information is on a computer. Wyatt shared:

“It’s sometimes just amazing to me. It says this student needs all these test questions read and I’ll test for comprehension and they didn’t need any of it read because for some reason, they’re doing it on the computer screen.”
Claire also spoke about the advantages of using blended learning for students who need tests read to them per their IEP. She explained how this assists the teachers with meeting individual student needs. Claire also shared that students may have a PowerPoint available on their Chromebook that they can use to follow along during class instruction. Claire stated, “For those that need it read, there’s a program that will read it to them from Buzz so I no longer have to take them to a separate location. We just have to supply them with headphones or have them bring the headphones in. So, it has helped us meet their own individual needs a little bit more successfully.”

Victoria and Lila perceive some of their students as being challenged with reading comprehension because of vocabulary limitations. Although Victoria explained she talks to her students at an eleventh or twelfth grade level, student peers who have a higher level of terminology sometimes help their peers who need assistance with comprehending the information. Lila has found some students improve their reading comprehension by playing vocabulary games during class so they may understand more words.

4.10.2 Teacher Perceptions of Student Writing

Several of the teacher participants overall perceive their students’ writing skills to be below their grade level expectations. Victoria, Sophia, Claire, and Lila all identified improvement needed with student writing. Furthermore, Victoria, Sophia, and Claire all connected part of the reason for students being challenged in this area to social media.

Victoria recalled a student she was helping one year with using a graphic organizer for her essay writing. While she was assisting the student with the thesis, the student expressed that she did not talk the way the teacher was explaining the writing. Victoria agreed with the student.
Victoria believes the lower level of student comprehension recently is partially the outcome of the writing level in newspapers and social media. Victoria shared that she continues to use the appropriate grade level language with her students by stating, “I don’t tone down my language.” She explains her reasoning with doing this as “… the more they hear it and get used to the situations which I say it, is beneficial to them.” Thus, she works on improving her students’ writing skills by talking at the same level she requires them to write.

Claire also discussed student challenges with having an appropriate writing ability for their grade level. Claire even states that she believes this to be the greatest challenge for students in her blended learning courses. Like Victoria, she is seeing social media has having a negative impact on student writing.

“I think the biggest thing for us is the writing ability. That they don’t know how to write. They are so used to doing the lol’s or the abbreviations on their phones that they have a hard time formulating sentences.”

Sophia, Claire’s co-teacher, elaborated further on student writing ability in agreeing with Claire’s observations. She spoke about how they are writing their papers the same as how they communicate in social media. Regarding basic writing grammar, Sophia stated, “… they’re not capitalizing the first letter of a sentence.” Furthermore, Sophia spoke about students not writing using full words in sentences. Sophia shared, “They’re using their little acronyms that you would use when you text.” Both Claire and Sophia expressed their thankfulness for having the English teacher they collaborate with for some lessons and projects.

Additionally, the credit recovery English teacher, Lila, spoke about the assistance she perceives needing to provide her students with their writing. She stated that when students do need help with their writing in the Odyssey lessons, this tends to be for writing areas such as
“grammar, mechanics, structure, language, spelling” rather than content. The students have the option of resubmitting their work for a higher grade. Lila assists the students with editing their work for resubmission to the Odyssey teachers.

Hence, four of the participant teachers found students having challenges with writing mechanics. Three of the four teachers directly related this to student interaction with social media. They are finding students writing for their schoolwork the same as they would in a casual, social context.

4.11 Teacher Perceptions of Student Technology Access

The participants have found that not all of their students have access to the Internet while not at school. Some teachers have taken steps to provide opportunities for their students to connect to the Internet while at school in addition to class time. Furthermore, the teachers shared their perceptions that student exposure to technology in general varies considerably. Two of the participants also reported challenges with technology access at school.

While Wyatt’s students had varying access to technology at home, he also found some students lacking home experiences with technology such as smart phones, a computer, and Internet access to overcome these challenges and succeed. Wyatt summarized, “So, the haves and have-nots disparity is really, that’s probably one of the biggest challenges I’ve encountered. Do they all have access to the same level of technology? And the answer usually is, ‘No.’”

Wyatt proudly shared a story about one of his students who came to the class without having prior access to technology at home that other students did. However, this student persevered and ended up doing very well in the class, even excelling beyond many others.

“… it was the technology hurdle for him … The success out of that though … he became one of the fastest students I had in getting through his assignments, in getting stuff done,
and doing well at it, and heading out to the shop. And I think part of it is because he realized that he figured it out, he wanted a challenge, and he was very proud of it. He kept on going with it.”

Wyatt shared that prior to the student succeeding, he did at first go through frustrating moments because of not having prior exposure to technology as much as his peers.

Similarly, Leah brought up not all of her students having access to a computer or a cell phone in their home life. She stated, “So not everybody has computer access at home. Most of the stuff they can use on their cell phone but they don’t all have them.” Her way of assisting these students is to provide them with access to a laptop and workspace in her room when convenient for them during the school day. Leah explained, “Even if they’re working on a different class, if they need a computer, they can come in anytime. During my lunch, during my study halls, during my Physics class. It doesn’t matter.” Hence, Leah is very flexible to accommodate her students with being able to complete their work that involves computers.

When Sophia spoke about students lacking Internet access at home, she related to the challenges she experienced as a college student taking online and blended learning classes. Although she had the Internet at home, there were periods of time this was not available to her.

“… but the big negative to me, the Internet accessibility … I would be in the middle of a lesson with a video and the Internet would go out. So, I’ve lived it as a student with the Internet. And now as a teacher, when I want them to do assignments at home, they tell me they have Internet issues, … I have to believe it and I have to know it could possibly be real.”

Sophia finds some of her students are missing out on studying opportunities because she is not able to provide as many instructional handouts as before.
“… we’re not allowed to use a lot of money in printing. So, we’re being discouraged to use it. But then at the same time … if you don’t want us to use that, then every student should be given a computer with Internet to take home … And they’re not. Nobody is given anything to take home.”

Claire adds to this by explaining that the students had packets to take home as study guides prior to blended learning. Now, students who do not have a computer to access at home, need to take the notes from the PowerPoint.

“… because we put the PowerPoints on the computer, we allow them to take their own notes but … they’re literally doing word for word on the PowerPoint. So, we’re not saving, it’s taking longer to deliver the lesson because … they don’t have the PowerPoint at home to go back to because they don’t have Internet … Those that do, they can go right in, see the whole lesson … But if they don’t have Internet, or they don’t have a computer at home, they can’t do that. So, that’s been a big challenge.”

Therefore, like Wyatt and Leah, Sophia and Claire believe their students without technology at home are faced with more challenges in their schoolwork with having the blended learning setting.

Likewise, Luke spoke about the challenges in blended learning courses he perceives when students do not have technology access in their homes. Along with this, Luke stated the importance of finding a solution because this would also be the case if the students had employment that required them to have sufficient Internet access outside of the workplace. Luke discussed the challenges and need for a solution when students do not have high speed Internet at home.
“So as far as outside the classroom having that opportunity, it can be a little tough … So part of that is making sure my students who maybe don’t have the resources at home, helping them overcome that. Because, not for nothing, when you go out in the real world, … If there’s an aspect of your job that requires that, we have to figure out how to overcome that as well.”

Although most of the participant teachers brought up the challenges of some students not having computers at home, only one teacher, Evan, discussed blended learning high school students being offered “loaner devices” while they are enrolled in the advanced mathematics classes. Additionally, Evan stated that his technology department assists him with the blended learning classes by providing him with a variety of technology tools such as a Microsoft Surface, which Evan described as being like a tablet and a digital copy of the textbooks. Additionally, he has available screen share and Smart Notebook software so when he starts a call with students he can activate the screen share to show the Smart screen and be able to drag in images.

However, Evan still brought up challenges he has noticed regarding students having all of the types of technology access needed. He stated, “The most challenging was really just making sure everybody has the appropriate technology to be able to interact in the way that I want to interact with them.” Evan brought up his students having the ability to watch videos, hear sound, and have sufficient Internet access. He spoke of the technical challenges of all the students needing to have the right settings with their browsers.

The only teacher who did not discuss the student challenges of not having technology in their home was the English credit recovery teacher, Lila. In this case, the students have a considerable amount of time available to them to work in the computer lab. Lila stated, “If students do not have a second class, they often stay for four to five hours. Whatever it takes.”
Therefore, while the need for technology at home during the school year was found to be great by the other teacher participants, the credit recovery teacher did not bring this up for summer school.

Moreover, two of the participants reported experiencing challenges with technology in their school settings. Leah stated that for approximately two weeks, she was not able to use computers with her blended learning class. Ultimately, the determination was made that the Dell laptops required too much bandwidth and the switch was made to Chromebooks. Leah stated, “The Dell laptops were too bandwidth heavy for the wifi that we have so after many trials and errors, we realized it was the computers, not the actual wifi in my room.” She made use of the library computers to assist with the classwork in the meantime.

Similarly, Luke expressed his frustration with the technology infrastructure. He stated, “… infrastructure is not always adequate … trying to get students to use the technology piece and having a server that is not always on top of its game or not having the bandwidth to support…” He reported the technology infrastructure to most likely be the greatest source of his frustration with blended learning.

Therefore, the participants found a combination of some students lacking access to technology at home and a couple participants also reporting having access to sufficient technology, at least for a period of time, at school. The teachers saw a notable difference between the access level their students had with technology at home. This resulted in variances in student ability to learn about the technology and the content.
4.12 Teacher Perceptions of Facilitators, Constraints, and Barriers

The participants all perceived their professional development to be valuable and needed. While the participants believed they had great access to individual and peer-based assistance, several were faced with challenges regarding attending professional development workshop sessions. All of the participants are pleased with the responsiveness they have received when contacting their technical support office for assistance in either the learning management system functionality or discussing ideas.

Two of the teachers spoke of their struggles with the balance between accessing the blended learning professional development and having the instructional time with their students. In some cases, this is because of the pressure they feel with being in the classroom with the students for state testing and at other times, because of their administrators not approving of their time out of the classroom. Furthermore, three of the participants spoke of being denied additional professional development because of the cost.

The participant teachers expressing their strong perceptions of facilitators, constraints, and barriers is representative of the transition to blended learning being a disruptive innovation (Christensen et al., 2017). Because of the major difference in this new style of teaching, there is a great learning curve for which the teachers feel they need professional development support outside of the classroom as well as the time to receive this instruction. Additionally, the teachers expressed finding value in having multiple opportunities to share with each other their approaches for adapting to this instructional change.
**4.12.1 Teacher Perceptions of Time Out of the Classroom**

Luke spoke about how he would pursue additional professional development; however, he does not seek this as much as he would like because of Regents preparation. He talked about how much his job may be impacted by his students’ performance on one assessment. He is feeling great pressure about this, which in turn takes away from him gaining more knowledge about using blended learning for instruction with his students.

“I've certainly not gone after some workshops just because there’s still a great deal of pressure for getting these kids ready for June and ready for a Regents, that big overhanging cloud that depending on how the test rolls out that year who knows, but there’s still that overwhelming reliance that we have of a system of a one-day standardized assessment, that is being overly relied upon in my opinion. … That’s obviously the major pressure keeping that balance of OK, growing my craft and becoming a better teacher but at the same time, making sure I can get these kids across the finish line.”

The BOCES teachers, Wyatt and Sophia, also spoke of the barrier regarding being out of their classrooms for professional development. Wyatt had received an e-mail about a face-to-face Google Level 2 certification that was denied by his administration for him to attend with him needing to be out of the classroom for one of the days as one of the reasons. During the first interview, in response to question 4b regarding any barriers that prevented attending professional development, Sophia responded, “I don’t feel I can leave my classroom.”
Claire shared how much she gained by attending the NYSCATE (New York State Curriculum for Advanced Technological Education) conference recently. She was one of the presenters. Although she would really like to attend again this year, her BOCES has let her know this will not be approved unless she presents again. Claire shared that she was told by administration that this was because of budgetary reasons. She spoke of the value of meeting with instructors from other BOCES. Claire commented, “It’s kind of sad because they said we will not be able to do that next year because it’s not in the budget. If we want to pay on our own, well I don’t think I’m going to pay $300 to go.”

Moreover, Sophia spoke of her frustrations of her limited access to technology-related professional development. There are workshops available on her BOCES campus after school. In speaking about the classes offered on her campus, she shared, “… if it’s not one of those … and you’re going away, they’re kind of discouraging paying for that kind of stuff.”

Similarly, Wyatt stated he is not able to attend all of the blended learning professional development that he would find helpful. Although he has presented on his work in the field and has spoken to a number of administrators around the state about how he has incorporated blended learning into his classroom, he was turned down from being able to attend a one-day workshop to achieve Google Level 2 certification. He explained that the administration brought up him being out of the classroom and the cost as the reasons. He will pursue getting this advanced level of certification online although it will take longer.

“And it was only $125 and I had it denied because administration thought that for me to miss a whole day and cost $125 they should look into whether or not their in-house training could do it, which I never heard back from …”
4.13 Teacher Perceptions of BOCES/District Technology Assistance

All of the participants highly praised their Information Technology (IT) department for the assistance and prompt response they have provided to them. Victoria expressed very strong positive praise for her BOCES technology department in stating, “… the IT department is very wonderful to me and whatever I need, whatever problem I have, they are there to support me …” Likewise, as a district teacher, Luke shared his high satisfaction from his local BOCES by stating, “I will say that any time there was an issue, that they were readily available whether it was calling on the spot or something that required a little bit more research or investigating.”

Another district teacher, Leah, also found the BOCES and district technology assistance to fully support her with technology needs. She stated, “Between our BOCES and tech people at school, I’ve pretty much had assistance any time I’ve needed it.” The district even took the step to have a teacher be on special assignment in the role of being an instructional technology specialist. The specialist provides in-house professional development sessions in addition to working with small groups of teachers to help them enhance their blended teaching skills.

Furthermore, three of the teachers shared their positive experiences with their learning management system vendor as well. In fact, Luke stated they contacted the Odyssey IT department so much that they became on a first-name basis with them. Many of these correspondences dealt with questions about seeking ideas on how to work with the system better from both the teacher and student perspectives.

Leah shared that a top executive from Buzz came into her classroom once to observe and give her some additional information about the software. The Buzz administrator also asked Leah about her reasons behind using or not using certain features. Leah found this to be
valuable, however she shared, “that was our only ever direct communication with them.”

Furthermore, Lila perceived the Buzz introductory training to be valuable.

BOCES and component district teachers of one of the BOCES found their online learning coordinator to be especially valuable. The participants shared that she has helped them in diverse ways, such as being a vendor liaison; providing large group, small group, and individual trainings; and coming up with ideas when approached. Leah stated how these “exterior ideas” have helped in her lessons.

Victoria is extremely impressed with the online learning coordinator. Victoria described her networking support from her as “off the charts because what she finds and where she finds it is amazing.” This has resulted in Victoria being able to participate in multiple professional development sessions that she believes has been very valuable.

Similarly, the English credit recovery teacher, Lila, has also found the online learning coordinator to be extremely helpful. Lila remarked, “She is amazing! You can quote me on this.” When Lila first started teaching blended learning, she attended workshops from the company, Odyssey, as well as from the BOCES. These focused on navigating the software. Lila feels comfortable with the setup now. Lila also spoke of the value of the technical department being very helpful in troubleshooting any problems and being very responsive. She described the department’s helpfulness as, “On demand. Text or call and they are right there!”

Victoria has been able to take classes as part of her BOCES Virtual Learning Academy. She applied her work in these classes to assist in developing her blended learning courses. She spoke about the excellent technical support she receives as well as the openness of her BOCES in letting her take the professional development courses she requests related to her work. Victoria excitedly shared, “… they make sure that I get to attend any workshop, any webinar, anything I
ask for that’s going to better my ability to teach in a blended learning environment, they have always supported.”

Evan also found his BOCES to be very helpful in connection with his blended learning courses. He specifically mentioned people in the positions of Director for the Center of Online Learning and her Administrative Assistant as well as the Director for Curriculum have been instrumental in assisting him with transitioning to blended learning. He emphasized the high level of responsiveness he receives from his BOCES with technical assistance. Evan commented, “As I’ve gone along, the things that I’ve needed, I’ve done. And the requests to the technicians I’ve had, have been solved. So, I’m lucky to work with pretty responsive people.”

4.14 Teacher Perceptions of Professional Development through Networking

Three of the participants spoke of networking to be the predominant way they have been receiving professional development regarding blended learning. Wyatt stated that while he did attend teaching theory workshops on Marzano recently that was provided by his BOCES, the connection was not made between that and the use of technology. He made his own connections. Furthermore, he shared that other than some Google trainings offered by his technology department and the use of the learning management software, Buzz, the main way he has gained professional development regarding blended learning has been informally from his colleagues. Wyatt commented, “I think they rely very heavily at the moment on people who are good at it, sharing what they’ve done and sharing/collaborating amongst ourselves.”

Likewise, Leah commented that her main formal professional development recently was not technology related. In her case, the focus was on the new science standards. In prior years, there have been work session days provided for Buzz; however, now they are on their own with the use of the learning management software. Leah stated, “… all my professional development
this year, has all been towards our new science standards. All the technology ones that were out there, I already know how to use.”

Leah experiences her informal professional development through the district’s technology integration specialist. He is a former teacher in the district who is currently a teacher on special assignment in this role. Leah explained that he will assist either one-on-one with ideas as well as have informal small group sessions. Evan also discussed an employee’s role with assisting with the networking. He stated, “… if a virtual teacher is doing something particularly well, she’ll share that idea with the rest of us. We’re encouraged to do that.”

Furthermore, Luke highlighted that his main professional development has been connecting with others who are also teaching blended learning. He mentioned attending approximately four or five workshops during the year, such as about Google Classroom. However, most of his blended learning professional development has come from his colleagues. “It may not be a formal workshop where we’re being led by maybe a presenter. A lot of it is providing an opportunity to work with our colleagues who are in the same boat. I think that’s where the majority of that falls in. There’s not necessarily your traditional workshop. A lot of it is almost like the peer learning, the Professional Learning Communities (the PLCs), things like that.”

Therefore, the participants received a substantial amount of their professional development informally. While in some cases, this was from an instructional technology specialist, often this occurred with teachers discussing blended learning with their peers. In this way, the teachers believed they gained from others’ successes as well as acquiring new ideas.
4.15 Teacher Perceptions of Professional Development Content Needs

In response to interview question 4.e. during the second interview, the participants expressed the professional development topics they found helpful as well as ones they believed would be helpful. Five of the participants emphasized the importance of being instructed in navigating the learning management system.

Leah explained that the main topic of the professional development she received that she found helpful was learning about using the learning management system. She stated, “The primary one of course was the training on my LMS, the Learning Management System. That obviously was key. That was started and kind of steamrolled everything.” Lila, Victoria, Evan, and Luke also discussed how learning about the LMS was helpful.

Victoria and Evan spoke about the importance of knowing as much as possible about what the LMS had to offer. Victoria expressed, “if ever they have a new bell or whistle, I want to know about it and I want to know how to use it immediately.” Similarly, Evan spoke about the need to be have more information about the functionality of the LMS. He explained how having direct information from the software experts would be advantageous.

“There’s so much functionality and we probably could always use more support … Usually, there’s an expert from every company who wrote each software package. It might be nice to have those experts available because I don’t usually find out what I really want this thing to do until, let’s say I’m using Canvas for example, until I start playing around with it, looking through the menus and I find something I like.”

In a related interview question during the first interview, question 1.f., about how the BOCES or school district has been supportive, Luke spoke about the value of learning about the features of the LMS, Odyssey. He explained that his main point of contact was with BOCES
specialists; however, he was able to learn directly from the vendor specialists as well. Luke stated, “… we actually got on a first name basis with a couple of the reps because we were contacting them semi-regularly.”

Beyond the LMS, Claire and Luke spoke about their perceptions of the significance in learning about Google software, such as Google Docs and Google Classroom. Both of the participants use Google software integrated with Buzz. Brain Honey is the former name of the LMS, Buzz. Claire noted,

“Whatever program goes along with that platform, Buzz, it would nice to be proficient in that prior. We had a disadvantage in that we were going from Microsoft Word over to Google at the same time that we brought on Brain Honey. So, we were learning two different programs at the same time … I think it’s important that when they’re looking into whatever platform they’re going to use for their classroom, that the supportive programs, people are familiar with.”

Luke found the Google Classroom training to be very useful, especially because of the integration aspect. While he has received this training to an extent, he spoke about how he believes he would best gain information about the software with having more frequent periodic trainings.

“… my favorite so far has been the Google Classroom just because of how much you can build off of that. How many apps you can have off of that with different educational programs embedded right within the Google structure … . Just trying to find a way to make it more consistent, more often. Trying to find a way to do it without taking me out of the classroom.”
Luke also discussed his desire to learn more about ways to increase his knowledge regarding adolescents and their use of technology, such as student motivation in blended learning courses. He shared, “I’ve got a few strategies but more could be better. Maybe there’s less of the curricular-based information, more of exploring the adolescent mind and how does it interact with technology.” Similarly, Evan also spoke about learning more about the teaching process in stating, “… at least the way I’m performing blended learning, the things that have been most helpful to me have been the things that are just with pedagogy for anyone in any setting.”

4.16 Teacher Beliefs of Preferred Format of Professional Development

Although there was some variation with the participants’ preferred formats of professional development, all of them mentioned an online component. This provided them with flexibility regarding their learning. Two of the participants specifically reported blended learning to be their preferred learning method as they are able to be immersed in the experience. Three of the participants stated webinars are the most convenient type of professional development and found these to be informative. Two of the participants brought up attending conferences to be valuable, especially because of the social networking; however, both stated the accompanying challenge of being out of the classroom.

Leah discussed how beneficial she has found the KYTE (KYTE Learning, 2017-2018) software to be because of the flexibility. Her district has recently made this available to the teachers. Leah explained the district was finding the teachers were having challenges with attending before or after school sessions because of other obligations, such as dropping off or picking up their children. According to Leah, the courses are made up of approximately seven or eight segments and each segment is only five or six minutes in length. The videos have
corresponding quizzes for the teachers to complete, which they may retake, and after being successful, they can use these for professional development credits.

Leah shared how helpful the flexibility in receiving this online professional development has been to her. For example, she spoke about being able to participate in these during lunch, late at night, or on a snow day. As a technology mentor, she is expected to also view these to see about technology options that may help other teachers as well. With doing so, Leah has found this to be a timesaver as she can preview a software option and see how feasible this may be prior to investing a lot of her time as well as other teachers’ time.

Victoria, Evan, and Luke all specifically brought up webinars as the most convenient professional development option. Luke stated, “I like webinars. I like the interactive online because you’re basically learning the way you expect to teach and how you expect your kids to learn.” While Evan also shared finding webinars to be a good form of professional development, he expressed his preference for receiving his professional development in a blended format.

“Well, convenience is always going to be a webinar. But there’s a part of me that thinks if we’re going to promote blended learning as a way to move forward or improve instruction or make things better for everybody involved, then I feel like we should teach blended instruction using blended instruction.”

Victoria also responded to question 4.f. in the second interview regarding her preferred method of professional development as attending blended learning sessions. She described her experiences in professional development courses the BOCES online learning coordinator provides as a “safety zone.” Along with this, Victoria emphasized that she needs to be involved interactively rather than being a passive listener.
“The ones that I like to go to the best, they’re actually kind of blended. And that means that I’m either on a webinar or face-to-face somehow. But they’re having me work directly on the computer and making changes and being active. … I would say that it’s a blended style that I like and it’s kind of face-to-face but we’re working on the computer because then we get all that experience so I don’t want to just sit and take notes or listen to someone talk.”

Luke, Wyatt, Sophia, and Claire expressed how they have found attending conferences to be valuable for professional development. Luke spoke of how much he enjoys conferences because of the ability this provides him to network. He connected this with the idea that he would also be able to network with others in blended learning sessions. The predominant concern Luke has with conferences is his time out of the classroom.

“So, I definitely like the conferences just for the networking and the ability to build off each other’s own successes and maybe even warn people about stuff, potential pitfalls. So, those are the big ones. Anything where we can minimize the impact on time in classroom is I think my big concern. … June’s coming up, I’ve got a Regents.”

Sophia also expressed the challenge with being out of the classroom to attend a conference. She stated, “It’s hard for us to take off work to actually go to a conference, so to attend that, it’s more difficult.”

Wyatt also discussed the value he finds with meeting face-to-face with other teachers as well as the challenge with being out of the classroom. For example, he shared how finding substitute teachers can be a problem. He stated that when there are the schoolwide conference days, he would benefit more from targeted sessions to his work in providing blended learning
rather than attending “abstract” sessions. Wyatt expressed the need for sessions to include providing individualized assistance.

“The workshops we have been given have definitely been beneficial. But what has helped me more is having time during those workshops and having the people giving the workshops be able to go around individually help you realize the conception that you have that you want the software to create …”

Lila also stated the need for having individualized assistance in sharing that her preferred method of professional development is meeting with her BOCES online learning coordinator. Whichever method Lila’s coordinator felt would be best for the instruction would work for her as she trusts her judgement. Lila gave an example of how they turnkey trained one teacher as he lives over 150 miles away from the BOCES and was not able to attend the face-to-face trainings.

Hence, along with the semi-structured interviews, the submitted images from participants’ LMS courses and reports of modifications in instruction demonstrate the positive shifts the participants are taking in moving toward more of a technology-based student-centered learning environment. As seen in Table 4 below, the participants have moved toward increased student accountability, such as requiring students to correcting their quizzes and tests and with higher point reduction for late assignments. This aligns with Oliver and Kellogg’s (2015) research finding that teachers provided opportunities for students to revise and resubmit their work. Additionally, the teachers have been incorporating higher level student learning in the blended learning environment. Furthermore, the participants are integrating a wide variety of technology tools to enhance student learning through increased student engagement and collaboration opportunities.
<table>
<thead>
<tr>
<th>Syllabus Sections</th>
<th>Face-to-Face Courses</th>
<th>Blended Courses</th>
</tr>
</thead>
</table>
| Assignments       | • Homework – 4/4 or 10/10  
• Homework – 1 point off for lateness | • Homework – 25% summary, 25% reasoning, 50% correctness of responses  
• Homework due within 48 hours, maximum score 50%  
• Virtual instructional games  
• WebQuests  
• Finding a political cartoon online and analyzing  
• Provided with links to read and summarize about topic, such as Voter ID laws, and instructed to find additional related information online to include in the summary |
| Projects/Labs     | • Labs 25%, 10 points off for lateness | • Labs 20%, 10% off if in by end of day; 25% off if in by next day  
• 50% of total grade |
| Quizzes/Tests     | • 25% Quizzes; 30% Tests, can be corrected for 1/3 points back  
• Paper-based, word matching and listing | • 25% Quizzes; 30% Tests, must be corrected as homework and for 1/3 points back  
• Virtual, multiple choice including “all that apply” at times  
• 25% of total grade |
| Participation     | • Not included | • 5% of total grade  
• 25%, discussion forums |
| Lessons           | • Lessons in paper work book  
• In-class lecture | • Lessons online within class format  
• Videos linked to prevent copyright issues  
• Lessons – “graphics and color allow for greater information to be transmitted in a similar ‘space’”  
• “What has changed primarily is the delivery strategy ... using the computer lab to complete investigations and exploratory opportunities”  
• Collaborative in-class time using computers |
| Technology        | | • Remind App 101 optional for students and parents  
• Student-to-teacher private message communication in LMS  
• LMS  
• Additional Software  
• Google Classroom, Google Docs  
(www.google.com) |
- Kahoot! (https://kahoot.com/welcomeback/)
- Quizlet (https://quizlet.com/)
- EDpuzzle (https://edpuzzle.com/, videos with interactive lessons – teacher records talking with PowerPoint lesson and uploads as mp4)
- ExploreLearning, interactive labs, subscription (https://www.explorelearning.com/)
- KYTE Learning (https://www.kytelearning.com/) for professional development
4.17 Summary

In this chapter, the study findings are discussed based primarily on two semi-structured interviews with all eight participants. For data triangulation, a survey was used to gather participant background information and screen images of the virtual portion of the teachers’ classes were reviewed. Additionally, trends the participants reported in their class structure when transitioning from face-to-face to blended learning courses were studied.

A variety of areas in blended learning were covered in alignment with my research questions. This involved learning about how the teachers implemented pedagogical methods in their blended learning courses as they transitioned from their traditional face-to-face courses. Additionally, the research involved discovering how the participants arrived at determining academic and non-academic online activities to increase student engagement.

The participants also discussed their perceptions of opportunities and/or challenges they faced in regards to the students in their blended learning classes. While the participants found the students to be actively engaged in the lessons, they also reported challenges with the lack of student technology and writing skills. Finally, I discovered facilitators, barriers, and constraints the teachers encountered on their journey from teaching traditional face-to-face to blended learning courses.

While facilitators were the people in the technology departments who assisted them with their LMS and other software, several barriers and constraints were also reported. These barriers and constraints included desired teacher access to professional development conferences and workshops. Additional challenges were with the school technology infrastructure and student access to technology at home.
Therefore, there were a combination of successes and challenges the participants reported regarding transitioning from the traditional teaching model to blended learning. Chapter 5 discusses the themes identified in the study as well as the related recommendations and conclusion. Blended learning teachers and their administrators may gain from reviewing these so they may consider implementing recommendations into their programs.
CHAPTER 5: DISCUSSION, RECOMMENDATIONS, AND CONCLUSION

5.1 Discussion

The purpose of this study was to learn about teacher beliefs, perceptions of experiences, and recommendations regarding transitioning from face-to-face to blended learning. The research was conducted using semi-structured telephone and Skype interviews, reviewing screen images from the virtual portions of the blended learning classes, and studying information regarding differences in class assignments as the teachers transitioned.

This chapter reviews and analyzes the findings in connection with the relevant prior research. Additionally, this chapter presents recommendations to school administrators and teachers regarding transitioning from face-to-face to blended learning instruction. Finally, this chapter presents opportunities for future research.

This study was structured to address four main questions:

1) How do high school teachers compare and contrast pedagogical methods used in face-to-face and blended learning courses?

2) How do high school blended learning teachers determine the online activities they believe will increase student engagement?

3) What are teacher beliefs and perceptions derived from direct pedagogical experiences regarding special opportunities and/or challenges students bring in regards to blended learning?

4) What are facilitators, barriers, and constraints teachers have encountered in transitioning to teaching blended learning courses?
5.1.1 Theme 1: Teacher Perceptions of Experiences with Student Technology and Literacy Skills and Technology Access

Although overall the participants perceived their students to be skilled in social media, they did not find them to be as versed in technology in general. The participants reported the students to lack basic technology skills such as navigating the Internet and the LMS, file folder structure, and use of office technology software, such as Excel. Furthermore, the students were perceived to have lower level literacy skills because of the influence of social media in which students correspond more informally and through abbreviations. The participants also found students to have greatly varied access to technology outside of school hours.

I found the Disruptive Innovation theory (Christen et al., 2017) applicable in my study. While the participants were infusing technology into the classroom in their blended learning, they found challenges with their students having the skills to adapt to this change. Although the teachers believed their students had a background with technology use, overall they perceived this centered on social media and use of mobile phones rather than formal use of computers. The teachers believed this background had a negative impact on students’ written communication abilities and did not provide them with sufficient computer skills.

Furthermore, the teachers found that not all of the students had sufficient access to use the technology in their homes. The participants also reported challenges with sufficient technology access within their classrooms. Therefore, in order for the new innovation to supplant the former predominant method of full face-to-face class instruction, more student preparation is needed. Additionally, increased technology access needs to be addressed within the schools and at home.
Furthermore, this contributes to the Technology Acceptance Model (Davis, 1989). Although the participants are finding usefulness of the technology, they believe the ease-of-use may be a challenge for students. The participant teachers perceive their students need to have sufficient technology skills to fully benefit from the instructional technology. The participants reported their perception of students lacking in technology skills which they believe results in their students not being able to interact with the technology software easily.

Claire noted that students being technologically adept at using their mobile phones does not directly transfer to them having computer skills. Leah also found her students to be lacking in technology skills. She finds this is related to the district eliminating Microsoft Office classes because of budget reductions. Hence, she stated that many of her students are challenged with basic technology tasks, such as creating folder structures and saving to a flash drive.

Brumberger (2011) also found the college students in her survey study to be lacking in technology skills. In all the areas of using navigation for websites, digital images, and website creation, the students were found to be substantially lacking in use at a more than basic level. This prior research is in alignment with the reports of Claire and Leah regarding the low level of student technology skills.

Victoria, Lila, and Claire also found student writing skills to present a challenge in the blended learning courses. Victoria and Claire each found their students to write similar to the way they text on their mobile phone. Victoria discusses with her students the need to write proper English for their class assignments. She believes this lack of formal English is related to student social media use. The English teacher, Lila, also spoke of mainly needing to help her students with writing mechanics. Hence, several of the teachers identified high school student literacy challenges in their blended learning courses.
Levine and Horton (2015) also found the students in their study to have literacy obstacles. In this case, the authors studied the impact of implementing affective evaluation to assist students with their reading comprehension. They found this strategy to be beneficial.

Moreover, the need to assist high school students with their writing skills is in alignment with the research conducted by Premont et al. (2017). The authors studied the influence of using “picture books as mentor texts for 10th grade struggling writers” (Premont et al., 2017, p. 290). Premont et al. found the students sought out the picture books to serve as writing “coaches” (p. 302) and also benefited through teacher modeling of writing. The writing instruction included assisting students with their word choice and writing fluency. The students became more engaged in their writing through this instruction.

Finally, the participants reported students to have lack of technology access both at home and even at school sometimes. Wyatt discussed the disparity he sees in student technology access. He stated, “Do they all have access to the same level of technology? And the answer usually is, ‘No.’” Leah also spoke of not all of her students having technology access at home. In order to assist with this, she has an open door policy where her students can come into her classroom while another class is occurring so they may work on their computer assignments. She is also available during lunch and after school. This aligns with the findings in Barbour and Siko’s (2012) and Oliver and Kellogg’s (2015) studies that some students are lacking in home technology access. This tends to occur more often in rural areas.

Regarding school technology access, Luke shared, “... infrastructure is not always adequate ... not having the bandwidth ... probably the greatest source of frustration ... not having infrastructure there to make a blended learning system work.” Leah also reported technology infrastructure challenges at her school. At one point, she was only able to get four of her twenty-
five Dell laptops to connect to the Internet. Until these were working, she brought her students to the library for assignments as needed. There were “almost enough computers for everybody.” Evan also shared technology challenges when attempting to work with his students interactively, such as working on all of his students having sound and video capabilities on their computers. Lewis et al.’s (2014) research demonstrated the importance of students having audio, video, and interactive discussions incorporated in their learning.

Thus, the teacher participants noted their perceptions of a combination of students lacking in computer and/or literacy skills as well as possibly having challenges with technology access as major obstacles for student success in blended learning classes. Only one of the participants in the study shared that his BOCES provides a computer for students to check out as needed. Even in this case, home technology access is not provided.

5.1.2 Theme 2: Teacher Perceptions of Experiences with Pedagogical Approaches

The participants in this study reported that they implemented a variety of pedagogical approaches in their blended learning courses. The participants perceived these approaches to increase student engagement and motivation for learning as well as meet the needs of students individually. Furthermore, the teachers found the blended learning environment provided a variety of ways to assist with higher level thinking. These included academic as well as non-academic activities. While the participants were readily able to discuss their academic activities, many were not believing they were engaging in non-academic activities with their students. There were differing understandings of the meaning of a non-academic activity.

I believe these activities reflected participant use of Garrison et al.’s (2001) Community of Inquiry (CoI) theory. Through the variety of academic and non-academic activities the
teachers used in the blended learning classes, a sense of community was created. This was done through social, cognitive, and teaching connections.

Furthermore, as the participants have varied approaches in their use of technology in instruction, I found this to demonstrate an application of the Technology Acceptance Model (Davis, 1989). Although the teachers are given a learning management system to use, the other applications and methods they use with these are determined by the perceived use and usefulness of the technologies they have available to select. While some teachers may believe student use of instructional virtual games is very useful, others may find a greater usefulness of discussion boards and collaborative project-based learning with hands-on learning, including the use of computers for data reporting and presentation.

Overall, the participants felt strongly about ensuring they were assisting their students with being motivated. The only teacher that did not express this was the credit recovery teacher as she felt the students need to be internally motivated to do the summer blended learning credit recovery program or they would be moved to the traditional setting. However, even in this case the teacher spoke about bringing in food periodically for her students.

The participant strategies for motivating their blended learning students included grade-related, food, personal connections, online games, discovery-based lessons, real-life connections, and flipped concept. Many of these involved student-to-student interaction, which the participants found to be very important. In alignment with previous research, by providing this community-feeling within the classes, student learning is enhanced (Barbour & Hill, 2011; de la Varre et al., 2010; & Shea & Bidjerano, 2009). Moreover, having the personal connections is in alliance with Vesquez et al.’s (2013) research emphasizing the importance of having a caring environment for learning. These strategies incorporated a combination of social, cognitive, and
teaching presences as presented in the CoI theory (Shea & Bidjerano, 2009). Hence, a variety of extrinsic and intrinsic methods were used.

The participants used virtual tools as one way to motivate their students. These included virtual games, discussion boards, and software outside of their Learning Management System, such as Google Docs and Google Classroom. The competitive nature of the games incorporates the CoI social presence. Leah uses Quizlet with her students. She spoke about how this motivates her students by engaging in the game and being competitive with their classmates. Regarding her students using online games, Leah shared,

“They use Quizlet. Quizlet goes through vocab and stuff like that and then it turns into games. So if they study the vocab terms ahead of time, they are more successful when we play the games, competitive games, kind of a race type thing where you are divided up into four teams. They compete against each other …”

Sophia and Claire recently started to use Quizlet. The co-teachers perceived this was an engaging way for their students to review for their end-of-year state assessment. They especially found the students to become more engaged because of the competitive feature of the software. This is in alignment with the findings in Yazzie-Mintz’s study (2010) in which high school student responses to a survey they administered demonstrated high desire from students to have instruction that is engaging and opportunities to interact with their teachers.

Leah also expressed that she found implementing flipped learning to motivate her students as they were provided with video content on the lesson topics prior to attending class. Prior research reflects this with Halili and Zaimuddin (2015) also finding advantages of flipped learning. The authors concluded that flipped learning saves instructional time as this involves the students watching instructional videos at home prior to class.
In this way, classroom time can be used to “solve problems and hold discussions” (Halili & Zaimuddin, 2015, p. 17). Halili and Zaimuddin reported in their research that the flipped concept results in students becoming “… more motivated and confident while discussing in the classroom because they have prepared by watching video lectures before coming to class.” Butt (2014) found in his study that the students enjoyed having flipped learning as this provided more time for learning activities in class. Hence, the flipped learning increases the cognitive presence of Garrison et al.’s (2001) CoI in the classroom. Leah’s finding that using flipped learning increased her students’ motivation is in alignment with prior related research. Furthermore, in alignment with Davis’s (1989) Technology Acceptance Model, Leah finds great value in the usefulness of having her students view science information on videos prior to coming to class to discuss.

Leah also discussed playing charades with her students on science topics during the face-to-face portion of her course. Because the games she does with her students have an “academic undertone,” she does not fully consider these as non-academic activities. Leah explained, “99% of the time, what we’re doing is for academic purposes. There’s not much leeway in my schedule.” This demonstrates the pressure the blended learning teachers are feeling with getting through all of their curriculum with the students.

Sophia and Claire also discussed the use of games in the face-to-face portion of their classes. These games involved ways for the students to get to know each other and therefore, fostered a stronger sense of community. The teachers perceived this assisted with the students being more comfortable with engaging in their learning together. Hence, these face-to-face games increased the social presence of Garrison et al.’s (2001) CoI, which the participants found to assist with student learning.
Luke also brought up games to assist with getting his student engaged with their learning. He uses Kahoot, https://kahoot.com/, with his students. While speaking about the benefit of incorporating games, Luke also discussed the importance of not losing concentration on the course content. Luke explained,

“… Kahoot, that’s an instantaneous one and that requires access through technology whether it’s a tablet, phone, a computer. It’s something different. I find that if you can make it feel like a game, that gets them engaged pretty good. But you also don’t want to get so caught up in the aesthetics of it that we start to lose the content.”

Leah implements a wide variety of these supplemental software activities with her science students. On a regular basis, she uses Quizlet and Kahoot! for academic review games. Leah also uses EDPuzzle to present virtual student lessons in an mp4 format consisting of a PowerPoint with her voice over. Furthermore, Leah has found great success with her students using ExploreLearning for interactive science labs. Her district purchases this subscription.

Additionally, Lila discussed the option her credit recovery students have to play vocabulary arcade. She described this software as having “… silly looking cartoon characters.” The students have the option to play this or move directly into their work. Lila explained that some of her students enjoyed the game interactivity first.

Hence, as Pellas (2017) found in his study, the teacher participants believed their students benefited from having the opportunity to play educational games. By participating in the collaborative three-dimensional game in the blended learning environment, Pellas found the students were more engaged in their learning. This positively impacted students’ cognitive development and enhanced their socio-cognitive thinking skills.
Similarly, Cara and Bossomaier (2014) reported positive participant perceptions regarding the effect of students playing a created Physics-based Asteroid game. The teachers explained that student participation in the game led to more engaged classroom discussions and provided helpful visual representations of Physics concepts. Thus, the authors found the inclusion of virtual games to increase student engagement and motivation (Cara & Bossomaier, 2014).

Finally, upon reviewing various instructional games and researcher reports on the benefits, Icard (2014) reported very positive benefits regarding game-based learning. She specifically discussed the use of Kahoot! which Leah and Luke use with their students. Icard also reported on Kahoot! to be a useful educational game for engaging students in their learning and competition with one another. Likewise, Luke, Leah, Lila, Sophia, and Claire believe the inclusion of games in their blended learning courses increase student engagement and collaboration while increasing their content knowledge. They also perceived student motivation was increased through students having the opportunity to play the learning games.

Another method some of the teachers in the study used to increase student engagement, motivation, and collaboration was discussion boards or other software, such as Google Classroom and Remind App, for students to have available to talk about a variety of topics. These involved a combination of teacher and student interaction in discussing course content and related information. Hence, in this way, the cognitive and teaching presence of Garrison et al.’s (2001) CoI were found to be beneficial in instruction.

One teacher, Luke, used the mobile phone software, Remind app, for this, as well. The participants found these opportunities increased student engagement and motivation and assisted with them staying on task while also increasing the sense of community. Hence, this also
increased the CoI social presence (Garrison et al, 2001) as the students had another opportunity to engage with each other and with their teacher. While Leah has used the Remind App in the past to remind her students of upcoming assignments due, she currently is not using this as she is contemplating if this is taking away from her students learning about being responsible for keeping track of their deadlines on their own. She is considering bringing this back into her blended learning.

The difference in Luke and Leah’s perspectives on the use of the Remind App in their blended learning instruction is reflected in the Technology Acceptance Model (Davis, 1989). Luke finds a high level of usefulness in using the Remind App to remind students of approaching deadlines and providing a means for everyone to share about content-related information. On the other hand, Leah is considering the usefulness of this application. Her focus is on the usefulness of the Remind App to assist students with remembering deadlines and contemplating if this takes away from them being responsible for remembering independently.

Victoria has found discussion boards to be useful in her classroom as her students in multiple sections of the same course are able to interact with one another in answering each other’s questions. She brought up the importance of her monitoring the boards and working with her students on netiquette. Victoria also uses discussion boards for student engagement with having her students write and correspond about assigned “mini-research” and provides them with a rubric. She emphasized how she makes sure to provide informative feedback. This aligns with Oliver and Kellogg’s (2015) study findings regarding the importance of frequent teacher feedback as well as teachers being patient with student learning.

Evan also believes his use of discussion boards in his blended learning courses increase student engagement. For example, students may post their solution to a mathematics problem in
the discussion board. Then, other students have the opportunity to comment on this as well as reply with an alternate solution. He references student engagement as students “showing humility” and “showing interest in a topic.” This intrinsic motivator is in alignment with Cho and Shen’s (2013) research finding a positive association between student intrinsic goal orientation and academic self-efficacy.

   Evan emphasized the importance of student-to-student interaction to “closely monitor the discourse that would take place” in a face-to-face classroom. This is representative of the findings in Shea & Bidjerano’s (2009) research regarding the importance of social and cognitive presence through student interaction. Additionally, this is in alignment with Armenelli and De Stefani (2015) concluding social presence in online/blended learning to be the core of all three presences rather than being an equally overlapping presence with teaching and cognitive presences.

   Although Wyatt does not currently use discussion boards in his classroom, he has plans to do so in the upcoming school year. He stated that he plans to use these “to pose those inquiry questions and have them weigh in and see if they can come up with some answers.” Wyatt believes this will increase student engagement as students may use these boards to ask one another questions and commented that students would have access to boards such as these during their careers on trade sites.

   This aligns with Kerr’s (2011) research in which he spoke about the importance of peer student learning. In Kerr’s study, he found that although there was sufficient virtual teacher-to-student interaction, there was a lack of virtual student-to-student interaction. Both Victoria and Evan are implementing the virtual peer student interactions on their discussion boards and Wyatt has plans to do the same.
The participants’ perception of how they believe student use of discussion boards is beneficial also aligns with Jahnke’s (2010) study on student perceptions of using discussion boards. The students reported the interactivity to be the most beneficial and shared they gained content knowledge by hearing other students’ perspectives and experiences. The students also appreciated having the social aspect integrated with their content learning through the boards (Jahnke, 2010). Likewise, Victoria and Evan spoke of all these perceived benefits as well with student learning, engagement, and sense of community.

The participants also used software to supplement their LMS. They found these advantageous in increasing student learning by providing opportunities for hands-on learning and collaboration. Thus, they believe the additional software increases student motivation and feeling of being part of a community. While two of the teachers used Remind App to assist students with self-regulation in regards to assignment due dates and a method of class communication, participants also used supplemental software for virtual activities such as interactive labs, practice quizzes, and competitive games.

Although Leah has used Remind App during the prior year and then decided to not use this, she is now reconsidering implementing this again to assist her students with reminders about upcoming assignment due dates. Luke has been using Remind App and extends this use beyond providing students with reminders. He also uses this as another way students and their parents can interact with one another in discussing topics. Furthermore, the co-teachers, Sophia and Claire, and Wyatt make their course assignments and deadlines clear to their students. Sophia and Claire use the LMS for this purpose and Wyatt uses a whiteboard.

This is similar to the findings in Oliver and Kellogg’s (2015) study. The researchers found students in online credit recovery courses wanted teacher guidance regarding monitoring
their progress on assignments and goal setting. Furthermore, both Barbour and Siko (2012) and
Oliver and Kellogg found the at-risk students in their studies gained from having an organized
course design.

Leah uses Google Spreadsheets and Google Slides with her students for a collaborative
science project. With the new standards, Leah came up with the idea of having a “Mystery Box
Lab.” After the students figure out what to do with the supplies and complete the project, they
create a Google Spreadsheet with their work. Then, the students jigsaw to explain their findings
with other groups using Google Slides. Leah found the “Mystery Box Lab” to involve higher
level student thinking. This activity incorporates high levels of Garrison et al.’s (2001) CoI
social and cognitive presences with the students interacting with each other and learning the
content together through exploration and applying science concepts.

Leah found the “Mystery Box Lab” hands-on activity to increase student engagement and
collaboration while efficiently covering the science material. Although Leah commented that
she did not believe the Social Studies teacher would also find this tool effective to implement,
this is an assumption of the applicability of the tool to other content areas. During the second
interview, in response to question 2.k. regarding the activities Leach believes increase student
engagement and whether she is doing this in her blended learning classes during the second
interview, she stated,

“Right now, we just started it on Friday, I gave them a box and in that box I gave them
some tools that they need to produce their own heat lab. Every group got a different box.
Every group has different tools but they’re all doing different labs. I’ve got the control
on this because I know what tools are in each box and what labs they should be able to do
with those tools.”
Furthermore, Luke integrates Google Classroom and Google Docs with his LMS for blended learning. Claire and Sophia also use this integration method. Luke has been pleased with “...how many apps you can have off of that with different educational programs embedded right within the Google structure.” The participants believe this supplemental software enhances student learning and collaboration. Claire and Sophia also explain this is a good solution for providing a portfolio of student work in the Google Cloud. Therefore, in accordance with Davis’s (1989) Technology Acceptance Model, Luke, Claire, and Sophia found Google software to be very useful in multiple ways for student instruction and presentation of their work.

Hence, this supports the findings of the prior research conducted by Suwantarathip and Wichadee (2014) and Zhou et al. (2012). In Suwantarathip & Wichadee’s (2014) study, students reported that Google Docs helped with idea sharing, increasing student-to-student interaction, and stimulating collaborative learning. Additionally, this is in alignment with Zhou et al.’s (2012) research showing that 85% of the students rated their use of Google Docs for collaborative writing as either “positive” or “very positive” (p. 362). Hence, the authors concluded the use of Google Docs for collaborative writing to be beneficial and have an impact on how students learned (Zhou et al., 2012).

The teacher participant reports of using educational games, discussion boards, and other supplemental software are in alignment with the research by Behara and Davis (2015) and Flavin (2012) regarding disruptive innovation theories. These authors also found students to benefit from educational disruptions such as alternative ways of learning and use of technologies (Behara & Davis, 2015) and the use of easy to use software for learning such as Google (Flavin, 2012). The participants implemented ways for students to learn differing from traditional lecture delivery.
Therefore, the participants all used some form of software to assist with pedagogical approaches. Some of them used a combination of methods. In this way, blended learning was found by the participants to assist greatly with addressing individual student needs as well as provide for meeting diverse student learning styles. These included using virtual interactive games, discussion boards, and other collaborative software, such as Google tools. In all these cases, the study participants found valuable perceived benefits for students which is in alignment with the related research. Hence, the Disruptive Innovation theory (Christensen et al. 2017) was found to be applied by the participants. The teachers supplanted traditional lecture-based methods of teaching with computer-based methods that involved student-centric and project-based learning (Christensen et al., 2017).

Furthermore, the participant instructional practices of using technology with their students incorporated the Technology Acceptance Model (Davis, 1989). While some teachers made more use of the virtual instructional games, others focused more on discussion boards. These decisions reflected the participant beliefs of the use and usefulness of the technology options they had available.

Included with these pedagogical approaches, all the participants spoke of the importance of student inquiry. They worked at creating environments in which their students would feel comfortable asking questions. The inquiries could occur either in a virtual or face-to-face format. The participants also spoke of striving for a balance of students asking questions and researching their own questions for answers. This is in alignment with the research of Shea and Bidjerano (2009) regarding Garrison et al.’s (2001) Community of Inquiry model which speaks of students having active inquiry. The balance of students finding their answers is also in
alignment with Shea and Bidjerano’s (2010) research on self-regulated learning which entails individual students taking an active part in their own learning process.

Therefore, the teachers perceived many benefits regarding their experiences in using a wide range of pedagogical approaches. The teachers found they were able to use blended learning as a way to offer a variety of opportunities for student engagement, motivation, and collaboration. Additionally, the teachers perceived the blended learning environment as very helpful in adapting lessons to a variety of student learning styles and individual student needs. The teachers also found that blended learning provided opportunities for a variety of approaches involving higher level student thinking.

5.1.3 Theme 3: Teacher Perceptions of Administrative Support and Opportunities for Professional Development

Although the participants reported having excellent technical support, all of the eight participants spoke of ways in which additional professional development would be helpful. The participants discussed desiring more professional development in the areas of LMS functionality, related integrated software, and pedagogy. They also shared their preferences for receiving the professional development to include webinars, blended learning, conferences, and informal meetings.

This is in support of Hall and Hord’s (2001) Concerns Based Adoption Model as cited in Saidin & Sam, 2013 and Christen et al.’s (2017) Disruptive Innovation theory. The participants’ CBAM Level of Use is directly impacted by the knowledge they have regarding using instructional technology in their classrooms. The participants expressed wanting to learn more about the functionality of their LMS. Moreover, they stated that they need more instruction regarding blended learning strategies. Furthermore, with blended learning being a disruptive
innovation (Christensen et al.), the participants found they need more guidance in making the transition in using technology to a greater extent for student interactive computer-based learning.

This also is in alignment with Davis’s (1989) Technology Acceptance Model. The more the participants perceive instructional technology to be easy to use and find value in the usefulness, the more likely they will be to infuse the technology into their blended learning. All of the participants found professional development pertaining to blended learning to be beneficial in their ability to provide effective blended learning instruction. However, a need for increased access to professional development and a greater emphasis on strategies of implementing blended learning were reported.

Four of the participants discussed the value they found regarding the opportunities to learn about their LMS. This was highlighted by Leah in stating, “The primary one of course was the training on my LMS, the Learning Management System. That obviously was key. That was started and kind of steamrolled everything.” Furthermore, Luke, Evan, and Victoria expressed how they wanted to be knowledgeable about as many features as possible their LMS had to offer. Victoria and Evan provided their perspectives on how they made use of information gathered about their learning management systems.

Victoria expressed, “if ever they have a new bell or whistle … I want to know how to use it immediately.” Similarly, Evan shared, “There’s so much functionality and we probably could always use more support … I don’t usually find out what I really want this thing to do … until I start playing around with it, looking through the menus and I find something I like.” This is in alignment with Emelyanova and Voronina’s (2014) research stating the process in which stakeholders accept and perceive a LMS is directly related to the success and efficiency of the system being used. By having this increased knowledge, blended learning teachers would be
able to have a higher Level of Use as discussed in Hall and Hord’s (2001) Concerns Based Adoption Model as cited in Saidin & Sam, 2013.

Learning about integrated software with the LMS was also mentioned by three of the participants. Claire and Luke both described how they would like to learn more about using Google software, such as Google Docs and Google Classroom with Buzz. Claire explained, “Whatever program goes along with that platform, Buzz, it would nice to be proficient in that prior. We had a disadvantage in that we were going from Microsoft Word over to Google at the same time that we brought on Brain Honey.”

Hence, Claire believed having knowledge of the integrated software, such as Google, before learning about Buzz as well would have been more proficient than learning the two systems simultaneously. Evan also brought up that when new software is to be implemented into a blended learning course, this should be done between sessions so teachers have adequate time to learn about these. He also brought up that software started in the school year needs to be available for the entire school year for continuity in learning. Although the participants perceived usefulness of Google and Buzz, they did not perceive learning multiple systems simultaneously to provide ease-of-use of the systems as discussed in Davis’s (1989) Technology Acceptance Model.

The blended learning teacher participants reported perceptions of experiences when being presented with technology tools to use in their classrooms demonstrated the applicability of Hall and Hord’s (2001) CBAM Stages of Concern (SoC), Innovation Configuration (IC), and Levels of Use (LoU) as cited in Saidin & Sam, 2013. Regarding the SoC, the participants need to find out more about the technology tools and implementation to reach different stages of how this may be used in their teaching. The IC relates to the expectations the participants may develop
about the technology and the LoU is directly affected by the knowledge the participants are provided with being able to navigate and know how to effectively implement the technology into classroom instruction (Hall & Hord, 2001, as cited in Saidin & Sam, 2013).

Web 2.0 tools were also often found to be challenging for teachers to learn and use for instruction in Barbour and Bennett’s (2013) study. Although Google Docs was not used by any of the teachers in their research, four of the teachers acknowledged the software as being potentially used for class collaboration. Student use of Google Docs for academic work was found in the research by Zhou et al. (2012) and Suwantarathip & Wichadee (2014). Both studies found the use of this software to be helpful with increasing student writing collaboration and enhancing student learning. Thus, this supports the value of teachers receiving training with integrated software options, such as Google.

Seven of the eight participants also discussed how they believe professional development needs to be ongoing. Wyatt’s idea of having blended learning professional development sessions on BOCES conference days supports the findings in Kear et al.’s (2014) and Barbour and Bennett’s (2013) studies. The researchers shared that the teachers expressed the need for receiving ongoing professional development about the pedagogy of teaching online.

BOCES and districts could provide ongoing professional development by incorporating these sessions into a portion of their conference days. This is also in alignment with Hosman and Cvetanoska (2013) finding the importance of ongoing professional development as the authors found the change process of innovation takes time. Wyatt, Leah, Sophia, and Claire also spoke of their perceived benefits of informal peer discussions regarding blended learning.

Luke and Evan both expressed their interest in learning more about way to increase their pedagogical knowledge in teaching blended learning courses. Luke specifically mentioned
wanting to gain information about adolescents and their use of technology, such as practices for increasing student motivation. He spoke of learning “… more of exploring the adolescent mind and how does it interact with technology.” Evan brought up preferring more professional development “… with pedagogy for anyone in any setting.” This also aligned with Kear et al.’s (2014) and Barbour and Bennett’s (2013) studies in which the online teachers expressed desiring professional development in pedagogy.

Luke also elaborated about the importance about having ongoing professional development. While he would like to have blended learning professional development on district staff development days, he expressed the need for receiving this on a more regular basis. Luke explained,

“We have like two full staff days and two half-days. It would probably be nice to try to see us make those types of opportunities available. But three times a year is also not very, it’s not going to make you grow very fast either … Just trying to find a way to make it more consistent, more often.”

Zweig et al.’s (2015) study also reported about online teachers receiving professional development within the past year. Four-fifths of the teachers in the study engaged in these opportunities. The most common method for receiving these was through conferences, workshops lasting more than one day, and training sessions that were offered continuously. Therefore, this study is also in alignment regarding professional development delivery.

Similarly, another format the participants found as a favored method of professional development was conferences. Luke, Wyatt, Sophia, and Claire all found attending conferences to be valuable in gaining information about teaching blended learning courses and networking. Luke stated, “So, I definitely like the conferences just for the networking and the ability to build
off each other’s own successes ...” Likewise, Wyatt shared how he believes he has gained from networking with other teachers in face-to-face settings.

This participant satisfaction with the conference format for professional development aligns with the findings in Barbour and Bennett’s (2013) study. They found the participants were pleased with the 2-day conference and video-conferencing to receive additional training (Barbour & Bennett, 2013). Zweig et al.’s (2015) study also reported virtual teachers attending conferences.

Although Claire, Sophia, Wyatt, and Luke enjoyed the networking and learning opportunities from attending conferences, they reported challenges from their school district and BOCES regarding gaining these opportunities more frequently. These challenges involved administrative concerns regarding school budgets and teacher time out of the classroom. When speaking about attending NYSCATE, Claire stated, “It’s kind of sad because they said we will not be able to do that next year because it’s not in the budget.” Regarding attending training that involves travel, Sophia shared, “… they’re kind of discouraging paying for that kind of stuff.”

Likewise, even with Wyatt presenting on his work in the field of blended learning and sharing his experiences with many administrators around the state, he shared that he was recently turned down by his administration regarding attending a one-day workshop to achieve Google Level 2 certification. The cost was $125. His administration cited him being out of the classroom for one day and cost as reasons for the decline. On the other hand, Victoria brought up how supportive her BOCES is of her having access to professional development on blended learning. She shared, “… they make sure that I get to attend any workshop, any webinar, anything I ask for that’s going to better my ability to teach in a blended learning environment, they have always supported.”
Both Luke and Sophia brought up the challenges of being out of the classroom for a conference. Luke was pressured by the Regents testing. He stated, “Anything where we can minimize the impact on time in classroom is I think my big concern. … June’s coming up, I’ve got a Regents.” Sophia also expressed the challenge with being out of the classroom to attend a conference in stating, “It’s hard for us to take off work to actually go to a conference, so to attend that, it’s more difficult.”

This variety of professional development topic and format preferences is in alignment with the research by Saidin and Sam (2013). They concluded that a variety of implementations would likely assist in increasing teachers’ LoU of Geometers’ Sketchpad. These included providing an in-service support group, conducting regular courses, having an expert group to help prepare teaching templates, and offering a method for teachers to share their lesson materials. Likewise, the participants emphasized the importance of receiving more professional development regarding blended learning so they may increase their Level of Use (Hall & Hord, 2001, as cited in Saidin & Sam, 2013).

5.2 Recommendations Based on This Study

The following are recommendations for researchers, administrators, and state education representatives. Researchers may contribute further by discovering more about how students may gain greater access to technology and gain increased technology and writing skills. Additionally, these recommendations are for administrators and state education representatives to see the importance of ensuring adequate technology infrastructure, take steps to increase student access to technology in their homes, provide academic opportunities for students to enhance their technology and writing skills, and give teachers access to professional development on providing blended learning courses.
5.2.1 Recommendation 1: Discover ways to increase student home access to technology hardware and the Internet and improve school technology infrastructure.

The participants reported a wide disparity in their students’ level of access to technology at home. Only one teacher, Evan, commented that his BOCES provides students with a loaner computer for use during the blended learning courses. In addition to computer hardware, the students would benefit from Wi-fi access while at their homes to have more opportunities to interact with the virtual portion of their blended learning classes.

This was readily apparent with Wyatt’s statement of, “So, the haves and have nots disparity is really, that’s probably one of the biggest challenges I’ve encountered. Do they all have access to the same level of technology? And the answer usually is, ‘No.’” While he acknowledged one of his students still persevered with this challenge, he shared the student went through frustration along the way.

Similarly, regarding student technology access at home, Luke commented, “So as far as outside the classroom having that opportunity, it can be a little tough … So part of that is making sure my students who maybe don’t have the resources at home, helping them overcome that.” All the participants aside from the credit recovery summer school teacher, Lila, shared this belief in students needing support with access to technology outside of class hours.

By students being able to check out a technology device for use in their blended learning courses along with the needed software, they will benefit from the same access as their peers in higher socio-economic households. In this way, the students may engage in activities such as writing papers in Word, constructing PowerPoint presentations, presenting data in Excel, and editing photographs in visual editing software.
Moreover, students need more access to the Internet outside of class time. In regards to challenges in blended learning classes, Leah stated, “The biggest one will always be kids not having Internet access because where we live, there are a lot of locations that physically don’t have Internet ... and the kids who can’t afford it.” While there is the possibility of students traveling to libraries, they may have obstacles with transportation and the hours are limited to when the library near their home is open.

One way students may gain access to the Internet at home, when this is available, is through schools applying for grants to assist with their students having the funds. Another way students may gain additional Internet access is to provide supervised time after school and transportation home. There may also be the possibility of accessing the Internet using a portable Wi-Fi device using a cellular company’s signal.

In addition to improvement needed to student technology access at home, a recommendation is for districts and BOCES to invest more money and time into improving their technology infrastructure. Participants expressed several challenges because of technological limitations in their school buildings. This resulted in more limited learning time on the computers because of a low level of access and at times even prevented students from accessing the online aspects of their blended learning courses.

Luke and Leah both shared experiences demonstrating the need for improved technology infrastructure at their schools. Luke commented that the district’s inadequate infrastructure has been the greatest challenge he has faced while transitioning to blended learning. Luke described this as “… not having infrastructure there to make a blended learning system work” and specifically brought up the lack of having enough bandwidth. Leah also shared her frustrations
with not having adequate bandwidth and switching from Dell laptops to Chromebooks to accommodate this.

Hence, the recommendation is for districts, BOCES, and the state education department to take into consideration the advantages of increased student access to technology both at home and at school. Although there is an investment cost involved, consideration should be made in regards to the outcomes of not providing adequate investment into increasing student technology access beyond the school hours and the technology infrastructure so that blended learning can take place efficiently. In this way, more use may be made of the professional development and portable computers.

5.2.2 Recommendation 2: Offer office computer technology classes and other ways for students to increase their knowledge of using computer software for class assignments, such as Microsoft Office software, folder navigation, and multimedia.

Although high school students use technology on a regular basis, overall, participants found their students to be lacking in basic technology skills. The student technology skills the participants mentioned as valuable in a blended learning class included creating a desktop folder, organizing their Google folders, using a flash drive, and producing Microsoft Office documents. The participants also brought up student tendency to write for class assignments the same way they write for social media postings.

Leah reported the students’ lack of computer skills to be the most challenging part of the transition to blended learning. She identified one of the reasons for the low level of student technology skills to be the elimination of the district providing courses in Microsoft Office due to budget cuts. Leah shared the following regarding the greatest challenge she is finding.
“The kids’ lack of computer skills. Complete total lack of computer skills. Even though we consider them to be tech savvy, they can run devices. They don’t actually know computers ... they can’t make file folders. They don’t know the concept of organizing their data.”

Leah shared that at one point the district had a teacher who offered Microsoft Office classes. However, through budget cuts these have been lost. She stated that there were two people in the department and now there is only one. Hence, Leah noticed a negative direct impact on the elimination of offering these computer classes at her high school.

Wyatt also found his students to be lacking in computer skills. Like Leah, he believes the students are capable of learning these. Regarding high school students, he stated, “...it’s a very small step to move them toward good computing skills because they’re familiar with the format.”

Evan and Leah found the students were able to navigate the LMS. Thus, whereas the participants found the students to have the potential to gain computer skills, a recommendation is for districts and BOCES to provide these learning opportunities for their students.

Therefore, based on the study findings of high school students lacking technology skills, along with Brumberger’s (2011) research with college students finding the same, the recommendation is to provide ways for students to increase their computer literacy. Considering all the finances that are invested into computer infrastructure and software in education, the cost of providing courses to increase student technology skills is merited. Districts and BOCES should take all of this into consideration when making budgetary decisions that have a great impact on student learning.
5.2.3 Recommendation 3: Seek additional ways to support teachers in strengthening students’ writing skills.

The participants expressed shortcomings in students’ writing skills. Particularly, they reported students completing their writing assignments in the same manner as they communicate with their peers on social media. This includes writing acronyms rather than full words.

Victoria, Claire, and Sophia all compared their student writing to the ways their students write to each other informally. Victoria stated that she models talking and writing formally to assist her students with doing the same in the classes. Claire found her students’ writing skills to be the biggest challenge in the blended learning classes. Claire stated, “... they don’t know how to write. They are so used to doing the lol’s or the abbreviations on their phones that they have a hard time formulating sentences.”

Claire’s co-teacher, Sophia, agreed with the challenge regarding students’ writing skills with using acronyms rather than full words. Sophia also spoke about their lack of grammar skills such as not capitalizing the first word of a sentence. Sophia and Claire found the collaboration they engage in with the English teacher to assist with this.

Hence, cross-curricular instructor collaboration may assist teachers of all content areas with enhancing students’ writing abilities. Additionally, as Victoria practices, Premont et al. (2017) found teacher modeling of their writing to be beneficial to students. Furthermore, Annamali and Tan (2015) found a correlation in their study with teacher engagement with students being linked to improved student writing. As Sophia brought up regarding the lack of students capitalizing the first word of sentences, Premont et al. reported students in need of improving their writing conventions. Premont et al. present the use of picture books with high school students to assist with improving writing skills.
5.2.4 Recommendation 4: Provide more workshops about blended learning on the pedagogical aspects and features of the LMS and be open to teachers attending conferences.

The participants have found their professional development to be helpful and all the teachers expressed the need to continue their learning. Teachers could benefit even further by learning more about pedagogical approaches within their blended learning courses and from gaining more information about features of their LMS. In this way, teachers could learn more about using computers for learning that is student-based and project-centered as Christensen et al. (2017) recommends in relation to their Disruptive Innovation theory.

The participants found both informal and formal professional development to assist them with delivering instruction in the blended learning format. However, based on participant feedback, districts and BOCES could better meet blended learning teachers’ professional development needs by providing more conference opportunities. There are obstacles to overcome regarding administrators gaining a better understanding of the value of these.

Wyatt, Claire, and Sophia all shared about their frustrations regarding not receiving approval to attend requested conferences because of time out of the classroom and budget. Wyatt stated that he “was flat out denied.” Sophia stated that her BOCES administration is “discouraging” attending professional development that involves staying overnight. Additionally, Luke shared his concern about being out of the classroom for conferences because of the pressure for students to prepare well for the New York State Regents examinations. The participants spoke about the benefit they gained from these to include having the opportunity to network with other teachers and learn from the variety of sessions.
Therefore, in alignment with Barbour and Bennett’s (2013) findings, a recommendation is to provide funding for blended learning teachers to have year-round opportunities for professional development to include attending conferences. Blended learning teachers have the ability to gain new ideas and incorporate more interactive student learning activities into their courses by having access to conference sessions and an extended network of colleagues. Teacher access to professional development in other forms as well should be offered throughout the school year to assist teachers with continuity in their learning.

Furthermore, a recommendation is to provide more professional development about pedagogy, such as student engagement, motivation, and collaboration, as well as on additional LMS features that go beyond the fundamental training. The participants shared a wide range of approaches they have been taking regarding student engagement, motivation, and collaboration within their blended learning courses. Thus, teachers would benefit from having more opportunities to discuss their strategies with each other.

In Barbour and Bennett’s (2013) study, the teachers also expressed the need for ongoing professional development regarding the pedagogy of teaching online. Luke specifically mentioned is desire to learn “... more of exploring the adolescent mind and how does it interact with technology” and “how to keep kids motivated.” Evan also brought up the importance of professional development on pedagogy in stating, “... the things that have been most helpful to me have been the things that are just with pedagogy for anyone in any setting.” Hence, focused professional development on pedagogy within the blended learning classroom is highly recommended.

Additionally, by blended learning teachers being provided with professional development on additional LMS features, they will have the ability to use the systems to a greater extent with
their students. Evan made the point that the software developers invest a lot of time and work into LMS features. However, the blended learning teachers are not always aware of all their LMS has to offer.

Evan stated, “... developers of this have put in a lot of effort into these different features and options, and then sometimes a lot of people don’t even know they’re there or fully how to use them.” He also brought up that this would make it possible for the teachers to provide more feedback to the LMS vendors for more improvement. Hence, he speaks about this recommendation to be a “win-win.”

Luke also expressed the benefit of learning more about the LMS. As class started, the teachers were finding the need to learn more about the components of the program and found being able to have access to the vendor to learn more about these to be very helpful. Luke made use of this so much that he stated, “... we were calling them so frequently just for ‘How can we do this better?’, ‘How can we make this easier for not just us but the students?’” Hence, there is a strong need for blended learning teachers to have a high level of understanding about the features of their LMS.

Thus, based on this study and related research, the recommendation regarding professional development is to expand the content beyond the basics of navigating an LMS. In order to best assist teachers with their professional development growth for teaching blended learning, both pedagogical aspects and LMS advanced features should be thoroughly covered. Along with this, the recommendation is for administration and state education representatives to gain an understanding that there is great value to investing money into providing the option for blended learning teachers to have conference opportunities. Although there will be some face-
to-face class time missed between the teachers and students, the teachers will be gaining ideas for making their blended learning classes all the better.

5.3 Recommendations for Future Research

The goal of this study was to provide additional insight into teacher perceptions, experiences and recommendations regarding blended learning in the high school setting. Much of the related research has focused on post-secondary blended learning (Suwantarathip & Wichadee, 2014). Although teachers of a variety of content areas were included in this study, there were a total of eight participants so additional related research would be beneficial.

First, a recommendation for future research is to focus on teacher insights regarding student access to technology both at home and at school. This would be helpful to learn more about the potential of implementing blended learning in high school settings. This may provide additional information on the challenges of technology access that impede students from engaging in blended learning courses.

Second, a recommendation is to study the trends over recent years regarding course offerings in building student computer skills and compare these with the perspectives of teachers who have been teaching blended learning courses during the same years in regards to student computer skills. In this way, more can be learned about the correlation between students having school opportunities to enhance their computer skills and student technological performance in their blended learning courses. This may provide additional information to administrators when making decisions on course offerings.

A third recommendation is to learn more about methods which blended learning teachers use with their students to increase student engagement, motivation, and collaboration. There have been many studies which show student learning to be increased when students have the
opportunity to fully engage with their learning along with teacher guidance (Barbour & Hill, 2010; Henry et al., 2012; Jahnke, 2010; Russell & Curtis, 2013). Teachers and administrators would then have more information for reference regarding implementing these pedagogical approaches in their blended learning classes.

A fourth recommendation is to investigate further teacher feedback regarding professional development sessions. These may be on ones focused on blended learning or in general on other pedagogical practices. This recommendation includes gaining information on teacher perspectives regarding the value of the content as well as their input on the format in which the professional development was delivered.

Finally, a recommendation is to conduct a blended learning study on student beliefs, perceptions of experiences, and recommendations. This would provide a lens from the student perspective to complement the findings from the teacher perspective. Students would have an opportunity to share their experiences on transitioning from face-to-face learning to blended learning.

5.4 Delimitations and Limitations of the Study

There are delimitations and limitations of my study. A delimitation of my study is that I focused solely on high school blended learning teacher beliefs, perceptions of experiences, and recommendations. By narrowing my focus, I was able to learn more in-depth about the beliefs and perceptions of this population. Although this provided insight regarding the possibilities of other blended learning teacher beliefs and perceptions, the study results are not able to be extended to blended learning teachers of other grade levels or teachers of other content areas.

Furthermore, with this being a case study, a limitation is that generalizations are not able to be made to “populations or universes” (Yin, 2009, p.15). Rather, outcomes of this case study
contribute to related theories regarding teacher beliefs and perceptions of experiences with transitioning to blended learning. As Yin (2009) advises, I used triangulation of data to provide “convergence of evidence” (p. 117) in my data analysis to support my conclusions.

5.5 Conclusion

In conclusion, blended learning in the high schools is continuing to grow. My research was able to support and add to the existing research on teacher beliefs, perceptions of experiences, and recommendations regarding blended learning in high schools. Hence, my research has yielded five conclusions regarding transitioning to blended learning.

The first conclusion found from teacher perceptions in transitioning to blended learning is that high school students need greater access to technology both during and after school hours. Leah and Luke both experienced shortcomings with their school infrastructure in regards to the bandwidth. Additionally, Wyatt, Leah, Sophia, and Claire perceived their students who lacked technology access at home to be at a disadvantage in the blended learning classes.

The teachers perceived disparity of student access to technology outside of school hours and the divide this creates in student learning opportunities in blended learning classes. Barbour and Siko (2012) and Oliver and Kellogg (2015) also found in their research that students had more challenges with the virtual portions of courses when they do not have technology access at home. Evan spoke of the value of being able to loan students technology devices from the BOCES.

Secondly, the teachers perceived students also need more access to technology instruction. Although they use social media, the teachers perceived their students to be lacking in academically-related technology skills, such as navigating the Internet, using spreadsheets, and setting up folder structure. Leah perceived her students to be lacking in technology skills for
her class and believes this is related to the district eliminating Microsoft Office classes due to budget cuts. Similarly, Brumberger (2011) found college students to be lacking in having sufficient technology skills.

Thirdly, based on teacher perceptions, high school students need more opportunities to increase their writing skills. Victoria, Claire, and Sophia all perceived having students who wrote informally for their coursework. Victoria spoke about her beliefs that teacher modeling of professional writing assisted students with their writing. This is similar to the findings in Premont et al.’s (2017) and Anamali and Tan’s (2015) research of finding a positive correlation with teacher engagement leading to an improvement in student writing. Premont et al. (2017) also found that students were in need of improving their writing conventions.

Additionally, the participants in the study perceived that their students were more engaged with their learning by having more interactive and creative opportunities. The teachers found the blended learning environment provided ways for them to meet a variety of student learning styles and meet individual student needs. They also found blended learning assisted with higher level thinking. Additionally, the teachers perceived that when students are more engaged with their learning, they are more likely to stay in school until graduation. Cara and Bossomaier (2014) also reported positive participant perceptions regarding student engagement to assist with student learning, such as with students playing a virtual Physics-based game. Pellias (2017) also found in his study a positive connection with students having the opportunity to play educational games.

The results of this study suggest that teachers are eager to learn more about how to effectively teach in the blended learning model and are creative in arriving at ways to increase student engagement, motivation, and collaboration. This research presents ideas the teacher
participants have perceived to be successful in their blended learning classes, such as how they have worked toward establishing a sense of community and increased student engagement.

Finally, the participants perceived the people available as resources to them in providing blended learning as being very helpful. They believe that more opportunities should be set up so teachers have greater access to this assistance. However, the teachers believed that the professional development provided for online learning has much room for improvement. Hawkins et al. (2012) also suggested additional access for teachers to learn about teaching virtually such as having a virtual space for teachers only to discuss topics such as lesson plans.

The teachers believe blended learning professional development should move from the basics of navigating an LMS to covering the pedagogical aspects, such as student engagement, motivation, and collaboration. While teachers are doing this to an extent, this would increase student learning all the more. Additionally, based on this study, teachers want to delve deep into the possibilities of their LMS and to do so, are in need of advanced training and exposure to the available features.

The teachers recommend the professional development offerings should include a variety of options, such as opportunities for informal sharing among blended learning teachers, webinars for convenience, and conferences for focused learning on selection of teachers’ choosing as well as networking with other blended learning teachers in other locations. Barbour and Bennett (2013) also recommended from their study providing relevant professional development during the school year and including funding for online teachers to attend conferences and network. From teacher beliefs and perceptions of their experiences, the results suggest the additional administrator support needed includes having more investment in related professional
development funds, as well as being more open to teachers having time out of the classroom to enhance their craft.

Hence, blended learning is a disruptive innovation in the high schools (Christensen et al., 2017). Because of this, the teachers expressed the desire to learn as much as possible about strategies to implement to engage their students virtually and in the face-to-face learning environment. Similarly, the teachers believe the students need to have opportunities in school to build their technology and writing skills. The teachers perceive blended learning instruction to be student-centered and project-based. This permits for students and teachers to be involved in the Community of Inquiry with teaching, social, cognitive, and learner presence (Shea & Bidjerano, 2010). Thus, there are many diverse ways that blended learning disrupts education innovatively (Christensen et al., 2017).
References


New York State Online Learning Advisory Council. (2015). New York State Online Learning Advisory Council’s report to New York’s governor, legislature, and commissioner of
education. Retrieved from


http://dx.doi.org/10.1080/10494820.2015.1127819.


Appendix A: Background Survey Questions

1. What is your full name?
2. What is your e-mail address?
3. What is your gender?
4. What is your age?
5. How many total years have you been teaching including this year?
6. How many total years have you been teaching either online or blended learning including this year?
7. How many total years have you been teaching credit recovery courses including this year?
8. Prior to earning your teaching credentials, did you receive instruction regarding online or blended teaching methodologies?
9. Have you taken any courses after becoming certified as a teacher regarding online or blended teaching methodologies?
10. Have you been a student in fully online courses?
11. Have you been a student in blended courses?
12. How many total years have you been teaching credit recovery courses in either an online or blended format including this year?
13. Which content area(s) do you teach?
14. How many courses do you typically teach at once?
15. What is your highest level of education?
16. How do you perceive your level of technology skills?

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Appendix B: Interview Questions categorized by Research Questions

1) How do high school teachers compare and contrast pedagogical methods used in face-to-face and blended learning courses?

Interview 1:

a) Did you complete any college courses that provided instruction in online or blended teaching methodologies? If so, please explain what you have used from the courses in your instructional practices. Would you like to use more of what you learned from these courses?

b) After you earned your teaching certification, have you enrolled in any college courses that provided instruction in online or blended teaching methodologies? If so, please explain what you have used from the courses in your instructional practices. Would you like to use more of what you learned from these courses?

c) How different, if at all, did you find your experiences with taking college courses pertaining to online or blended teaching methodologies as compared to taking courses after being a certified teacher?

Note: This question will only be asked if participants responded with “Yes” to both questions “a” and “b.”

d) Have you been a student in an online or blended course? If so, how may these experiences be impacting your decisions as an instructor of high school blended credit recovery courses?

e) How may have your past experiences in education influenced your decision to be a blended learning teacher?
f) How have you been assisted by your school district with transitioning to providing blended credit recovery courses?

g) What steps have you taken independently to assist with this transition?

Interview 2:

h) Have you felt alone or supported as you have been progressing from teaching face-to-face to teaching credit recovery courses in a blended format? In what ways? Any other feelings during this time?

i) Which parts of the transition have you found to be the most challenging and why?

j) Which parts of the transition have you found to go the most smoothly and why?

2) How do high school blended credit recovery teachers determine the online activities they believe will increase student engagement?

Interview 1:

a) Please describe any methods you are using with your students to assist them with motivation.

b) Why did you arrive at the decision to incorporate the ideas for increasing student motivation?

c) Please describe any steps you are taking to assist your students with self-regulation, such as time management.

d) Why did you arrive at the decision to incorporate the ideas for assisting your students with self-regulated learning?
e) Please describe any academic online activities you are offering for your students with the goal of increasing student engagement. For example, the use of technology tools such as Google Docs, videos, and online quizzes. Any other ways you are increasing student engagement?

f) Why did you arrive at the decision to incorporate your ideas for working toward increased student academic engagement?

g) Please describe any non-academic activities you are offering for your students with the goal of increasing student engagement.

h) Why did you arrive at the decision to incorporate these ideas for non-academic student engagement?

Interview 2:

i) Which teaching methods do you believe you should be doing to increase student motivation? Are you doing this?

j) Which teaching approaches do you believe increase student self-regulation? Are you doing this?

k) Which academic activities do you believe increase student engagement? Are you doing this?

l) Which non-academic activities do you believe increase student engagement? Are you doing this?

3) What are teacher beliefs and perceptions derived from direct pedagogical experiences regarding special opportunities and/or challenges teachers find students bring in regards to blended learning?
Interview 1:

a) Have you found your credit recovery students present special opportunities in delivering your instruction in a blended format? If so, please explain.

b) Have you found your credit recovery students present challenges in delivering your instruction in a blended format? If so, please explain.

c) Do you take steps to build community within your blended credit recovery courses? In what ways? Why or why not?

d) Do you take steps to increase student engagement within these courses? In what ways? Why or why not?

e) Do you take steps to assist students with collaborative learning, such as in discussions and projects if applicable? In what ways? Why or why not?

f) Do you take steps to encourage students to ask questions within your credit recovery blended courses? In what ways? Why or why not?

Interview 2:

g) How do you believe the following types of supportive strategies have enabled your students to learn?

i) Community building
ii) Student engagement
iii) Collaborative learning
iv) Active inquiry

h) Which of your supportive strategies have you found to be the most effective and why?

i) Please describe any supportive strategies you are considering adding to assist your credit recovery students in blended courses.

j) Why do you believe these additional supportive strategies enabled your students to learn?
4) What are facilitators, barriers, and constraints teachers have encountered in transitioning to teaching blended credit recovery courses?

Interview 1:

a) Please describe the professional development currently available to you that is provided by your district/BOCES organizations.

b) Have you been able to participate in professional development sessions over the past year? If so, have you been able to attend all the sessions you found interesting and applicable to your work? If not, what are the barriers that have prevented you from participating?

c) Please explain other ways your district/BOCES has assisted you and/or are currently assisting you with transitioning to teaching blended learning courses.

Interview 2:

d) What kinds of support have assisted you in delivering your instruction in a blended learning format? What kinds of support do you believe would assist you and why?

e) Now, particularly with respect to professional development, what topics have assisted you in transitioning? What are additional professional development topics you believe would assist as you continue to provide blended learning courses and why?

f) What format(s) of professional development do you feel would be most convenient for you to attend and why?
Appendix C: Time-Ordered Matrix

<table>
<thead>
<tr>
<th>Syllabus Sections</th>
<th>Face-to-Face Courses</th>
<th>Blended Courses</th>
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<tbody>
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<td>Projects/Labs</td>
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