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Community College Students' Perceptions of Hybrid Class Elements That Affect Their Academic Achievement

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
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Walden University
2024

Abstract

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Dissertation Submitted in Partial Fulfillment

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Abstract

Despite research and advances in hybrid learning in the field of education, the gap lies in the lack of research focusing on community college students' perceptions of which elements of hybrid classes significantly impact their academic achievement. This problem, often leading to lower completion rates and higher attrition, was particularly important to community colleges supporting rural populations. The purpose of this basic qualitative study was to determine community college students' perceptions of hybrid class elements that affected their academic achievement. Cognitive load theory served as the foundation for a conceptual framework, enabling the interpretation of student perceptions as manifestations of cognitive overload and its effect on performance. The research question that guided this study focused on community college students' perceptions of hybrid class elements that affected their academic achievement to better determine the lack of student academic performance in hybrid classes. Data collection consisted of eight individual semi-structured interviews with adult students at a Southeastern North Carolina community college. Criterion-based purposeful sampling was used to ensure the participants were (a) students enrolled at the study site community college, (b) currently or previously enrolled in a hybrid class, and (c) at least 18 years of age. Descriptive and values coding were used for data analysis. The results revealed recommendations about changes needed in hybrid classes. Based on their experiences, the participants perceived that community colleges need to prioritize improvements focusing on the technology used, teacher presence, and providing training for hybrid classes. The positive social change implication for this study is to enable course designers to create hybrid classes that are engaging and conducive to learning.

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Dedication

This dissertation is dedicated to the memory of my father, James Alexander Morlando. Thank you for teaching me the value of education and for teaching me to persist to reach my academic, professional, and life goals. I love you and I miss you every day.

Acknowledgments

I am eternally grateful to my Heavenly Father for giving me everything I needed to complete this doctoral journey. I would never have been successful without His support and encouragement. Thank you from the bottom of my heart.

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Chapter 1: Introduction to the Study

Educational institutions offer three categories of distance learning classes: asynchronous, synchronous, and hybrid. Asynchronous distance learning is a forum for educational interactions between students and educators who are not together at the same time or place (Kayalar, 2021; Malinovski et al., 2014). Synchronous distance learning, however, is an educational modality where real-time interactions occur between the educator and the student. Synchronous learning, when compared to asynchronous learning, more closely resembles a face-to-face learning environment. Communication in the synchronous learning environment occurs online through audio/visual conferencing, instant messaging, and real-time collaboration applications. The live interactions that occur between the educator and the student and immediate feedback given support both traditional and innovative methods for effective teaching and learning (Malinovski et al., 2014). Hybrid learning is the blending of synchronous and asynchronous instructional modalities (Park et al., 2019). The focus of this study was on hybrid learning because, according to Park et al., 2019, hybrid course offerings increased tremendously in higher learning and will continue to do so in the future. Also, future research was needed to gather information to make hybrid classes a more effective and engaging learning environment (Park et al., 2019).

Hybrid courses were a large part of curriculum course offerings at community colleges prior to the COVID-19 pandemic, but there was a lower level of student academic performance in these courses when compared to courses that were offered in the face-to-face format. According to Park et al. (2019), there was a lower level of

student academic performance in hybrid courses because these courses were not well designed and there was a lack of teacher training. Student academic performance has improved in hybrid courses since the COVID-19 pandemic, but student academic performance is still lower when compared to face-to-face courses. The speed at which the shut-down occurred of educational institutions led to insufficient planning for hybrid courses (Serhan, 2020).

The topic of hybrid learning is vital to the field of education because many institutions offer courses using this instructional delivery format and will continue to do so in the foreseeable future (Turner & Turner, 2017). Many educational institutions, constrained by rising costs associated with additional payroll and adding new physical plant structures, have turned to synchronous technology-driven delivery mechanisms, such as hybrid learning, as an alternative (or in addition) to the face-to-face classroom model. By using hybrid learning, educational institutions can offer all courses required for students to complete their degree programs. Prior to using synchronous technology, including hybrid learning, some educational institutions were not able to offer required courses to their students if they were not able to find a qualified educator to teach the courses (Turner & Turner, 2017).

While the hybrid approach to engaging instruction can be very demanding, this approach is associated with an increase in the numbers in college curriculum programs and enrollment sustainability (Irani-Kermani et al., 2021). Still, the use of hybrid instruction is not without problematic issues. The key problematic issues include the technology, lack of teacher training, and lack of planning for the course on the part of the

educator (Irani-Kermani et al., 2021). In order to improve courses offered in the hybrid learning format and in order to address the problems of decreased student participation and the lack of student academic performance, it is imperative to understand the foundational relationships involved with using technology to mediate learning content delivered through the use of hybrid instruction (Clark et al., 2006). These key problematic issues may lead to a lack of student academic participation, which may lead to a low student retention rate (Thrasher et al., 2014).

The social change implications of better understanding the effective use of hybrid instruction are intertwined with those who rely upon hybrid instruction for formal learning. Baldassarri et al. (2015) determined the importance of hybrid instruction for students who live too far from a campus to economically drive there for classes multiple times a week, high school students who are dual enrolled (completing college courses for college credit while completing high school curriculum), and students who have family and work obligations creating obstacles to attending classes on campus more than once a week. Additionally, hybrid instruction can be used effectively to make courses available to parents with small children who are unable to attend classes on campus multiple days a week (Dada et al., 2019; Jansa & Ringsmuth, 2022).

Meeting the students where they are through hybrid instruction remains a viable instructional option. However, it is an option that comes with its own problem set. The lack of student academic performance in the hybrid classroom is an academic problem that community colleges face today (Dada et al., 2019; Jansa & Ringsmuth, 2022). According to Sarkar et al. (2020), 13% to 17% of students withdraw from their hybrid

courses. Out of the remaining students, 10–20% do not successfully complete the courses. Generally, there are many more learners who earn a letter grade of C (70-75%) in hybrid classes compared to a letter grade of A (90-100%) in face-to-face classes (Sarkar et al., 2020). This lack of student academic performance leads to higher course dropout rates and lower graduation rates (Dada et al., 2019; Yates et al., 2014). Both the good and the bad news is that lack of student academic performance in hybrid classes is not inherent in the concept of hybrid learning, the empirical evidence demonstrating a positive correlation between student participation and successful course completion (Bekkering & Ward, 2020). Therefore, just making hybrid classes available is not enough. It is urgent to make hybrid courses a more effective learning environment for students, thereby increasing lackluster student retention and graduation rates (Turner & Turner, 2017).

This chapter includes a discussion of the research background information, the problem statement, the purpose of the study, and the research question. It also includes a discussion of the conceptual framework, the nature of the study, and the significance of the study. The background section includes information on hybrid learning classes, a discussion on student participation, and the problem of the lack of student participation in the hybrid classroom. The conceptual framework section provides a discussion of the theoretical foundation based upon Sweller's (1988) cognitive load theory. The nature of the study section of this chapter provides the proposed design for the study, participant selection, and data collection method. The final sections of this chapter provide

definitions of terms used in the study, assumptions, limitations, and delimitations of the study.

Background

The use of internet-based hybrid learning in the field of education was first introduced to the field of education in early 2000's because technology was rapidly changing (Mohammadian et al., 2021). As technology advanced, online learning increasingly became a significant part of higher education to provide an accessible and flexible learning environment to students in all walks of life (Mohammadian et al., 2021). Hybrid learning is currently one of the most popular educational methods because it combines the traditional and online formats of learning and because of the ability of educational institutions to reach more students with more course offerings. Administrators began to realize that instruction through the hybrid format is very cost effective because there was no longer the need to hire and pay several educators to teach in the classroom since technology permitted instruction via the computer (Mohammadian et al., 2021).

As hybrid learning continues to progress, research pertaining to face-to-face synchronous distance education (SDE) continues to arise. In 2013, the National Center for Education Statistics (Updated National Survey of Student Engagement, 2013) reported that 51% of educational institutions were using face-to-face SDE. Despite its regular use and continued growth in the contemporary educational environment, hybrid courses are an amalgam of strengths and weaknesses that its human users must work with.

The strengths associated with the hybrid learning format relate to students having access to courses that they may not otherwise have access to. Students do not have to travel to a college or university campus several days a week to take the courses they need to complete their degree program. College administrators also see advantages to hybrid learning, including classroom availability, decreased overhead, and increased enrolment (Ozkan & Boccio, 2022). One challenge associated with the hybrid learning format is students need to be more independent and self-disciplined learners. This challenge created the need for educators to explore pedagogies and technologies that would help them in engaging students and improving their knowledge on the subject matter (Ozkan & Boccio, 2022). The technology that is used in the hybrid learning format can also create challenges for the educator and the student. For example, Dada et al. (2019) described a lack of student academic participation in a synchronous classroom forum due to students not knowing how to use the microphone in the classroom to participate. Synchronous technology can interfere with faculty-to-student interactions and, especially, with student-to-student interactions (Turner & Turner, 2017) creating the sense of an artificial learning environment. A significant drawback associated with synchronous technology is that it often does not serve hearing impaired students very well (Turner & Turner, 2017).

According to McCall et al. (2013), corroborated by Myers et al. (2015), the rate of student noncompletion of hybrid classes, applied specifically to students in the outlying classroom sites, is greater than student non-completion rates in traditional face-to-face courses. Although a lack of student academic performance and low student retention are

problematic in both asynchronous and synchronous online instructional environments (Dada et al., 2019; McLaughlin et al., 2013), hybrid courses, which are offered at many community colleges, have a particularly high dropout rate when compared to face-to-face courses. According to Bird et al. (2022), the change in instructional modality from face-to-face to virtual learning during the COVID 19 pandemic resulted in a 6.1% decrease in hybrid course completion when compared to the pre-COVID course completion rate for face-to-face instructional modality of 80.7%.

This high dropout rate for distance learning classes, especially as it relates to student academic performance, is a persistent and current problem for educational institutions (Jansa & Ringsmuth, 2022; Libby et al., 2017; Turner & Turner, 2017). Although hybrid courses have allowed colleges and universities to reach a wider student audience for several decades, little current research has been conducted to explore the perceptions of community college students as to the effectiveness of these distance courses on student academic performance (Jansa & Ringsmuth, 2022; Lovell-Johnston, 2019). Because hybrid classes will be a part of community college education for the foreseeable future (Jansa & Ringsmuth., 2022), exploring students' perceptions as to the effectiveness of these classes may assist educators and administrators with student retention and better student academic performance.

Previous researchers have expressed the need for additional research on hybrid courses to make the classes more effective. According to Yousry and Azab (2022), future work is needed to build on the results of their study, including more studies on different hybrid courses. Park et al. (2019) added that future research should examine what

motivates students to put their efforts into activities within hybrid courses, or what strategies students use to succeed in hybrid courses. A qualitative approach to future research can be useful to explore students' decision and the rationale behind their decisions while they are completing a hybrid course (Park et al., 2019).

This study helped fill the gap in the knowledge related to student perceptions of the lack of student academic performance by striving to understand the experiences students have, specifically in hybrid courses. The findings of this study could be used by educators to help students reach their academic goals and the finds may also assist educators in designing future hybrid classes that present greater opportunities for learning, positively affecting student completion rates. With the growing reliance upon distance education at community colleges, specifically synchronous venues such as hybrid classes, addressing the lack of student academic performance in hybrid classes may lead to a better understanding of why students encounter greater disassociation from their hybrid courses and ultimately less performance success.

Problem Statement

The specific research problem addressed in this basic qualitative study was the gap in the research on community college students' perceptions of hybrid class elements that affect their academic achievement (Park et al., 2019). Despite the enrollment, financial, and access values. hybrid classes provide to community colleges (Crawford & Persaud, 2013; Dempsey et al., 2021; Weidlich & Bastiaens, 2018), a persistent weakness of the hybrid classroom environment is the lack of student achievement in academics in hybrid courses (Crawford & Persaud, 2013; Dempsey et al., 2021; Weidlich & Bastiaens,

2018). Addressing the problem of poor student achievement in academics, Clark et al. (2006) contended that a lack of student participation could be the observable manifestation of other issues, such as lack of attention, lack of motivation, and lack of opportunity to participate.

Hybrid classes in general, at community colleges especially, appear to have a higher dropout rate than similar face-to-face classes (Crawford & Persaud, 2013). Weidlich and Bastiaens (2018) found the most significant barrier to student completion of hybrid courses was the lack of student participation. A study conducted by Hussain et al. (2018) focused on student participation in web-based learning and found 58% of students failed to complete their courses, with the researchers attributing a significant part of the failure to the lack of student participation. In a similar study focused on the hybrid distance learning classroom, McLaughlin et al. (2013), and later Park et al. (2019), found a lack of student academic performance leading to the researchers' conclusion that students perceive academic participation as a critical factor in distance education leading to enhanced learning and higher satisfaction in more engaging courses. In terms of hybrid classes, McLaughlin et al. (2013), supported by Crawford & Persaud, 2013; Dada et al., 2019; and Weidlich & Bastiaens, 2018, found that the dropout rate of hybrid classes is high due to a lack of student performance and participation.

The problem of the gap in the research on community college students' perceptions of hybrid class elements that affect their academic achievement (Park et al., 2019) is important, current, and relevant to the field of education. According to Dempsey et al. (2021), hybrid instructional modality is currently a sound option to deliver

instruction to students and as students bring modern expectations of the use of technology into current hybrid classes, it is important for educators and administrators to ensure that student experiences in hybrid classes are improving. According to Marcus and Krupnick (2017, as cited in Chisum, 2020), 29% of rural students are enrolled in higher education programs. Nationally, among people over the age of 25, nearly half of the population complete postsecondary education. However, fewer than one in five rural students complete post-secondary programs. To reach more students in rural areas, institutions across the country have focused on ways to provide greater access to higher education to rural students. Greater access to higher education courses and programs for rural students has been, and currently is, achieved through hybrid learning (Marcus & Krupnick, 2017, as cited in Chisum, 2020). Hence, improving hybrid courses is imperative for the field of education and for the students served through the educational system.

Further research was needed to address the problem of the gap in the research on community college students' perceptions of hybrid class elements that affect their academic achievement (Libby et al., 2017; Myers et al., 2015; Park et al., 2019; Thrasher et al., 2014; Turner & Turner, 2017). The research that has been completed on the hybrid classroom has addressed the technology in the classroom (Libby et al., 2017), using synchronous learning in combination with asynchronous learning (Libby et al., 2017; Myers et al., 2015), and exploring what factors in student's lives affect their academic performance (Park et al., 2019) but a gap in the research existed on student achievement in academics and classroom participation as it relates to student perceptions when students are members of a hybrid class.

Purpose

The purpose of this basic qualitative study was to determine community college students' perceptions of hybrid class elements that affect their academic achievement. The setting for the study was hybrid classes at a southeastern U.S. community college. The focus of the study was on community college student perceptions acquired from completing or attending hybrid classes.

The phenomenon I addressed in this study was the lack of knowledge of community college students' perceptions of hybrid class elements that affect their academic achievement. Research has demonstrated a direct correlation between student academic participation and academic performance (e.g., Dada et al., 2019; Yates et al., 2014). Clark et al. (2006) surmised that successful academic performance cannot occur without academic participation, academic participation cannot occur without motivation, motivation cannot occur without opportunity, and opportunity cannot occur when there is too much disruption in the learning environment for the student to handle, especially a student who is new to the content. There are disruptions in the hybrid learning environment that may interfere with the student's opportunity to participate. For example, improper functioning technology, the non-intuitive need to use technology to communicate, poor bandwidth affecting delivery, and the presence of instructional tasks not conducive to remote learning. When a student does not perform to personal or course expectations during the learning process, he or she is at risk of losing interest in the content and perhaps failing or withdrawing from the course (Dada et al., 2019; Yates et al., 2014).

Research Question

To address the problem and the purpose of this study, the following research question was used: What are community college students' perceptions of hybrid class elements that affect their academic achievement?

Conceptual Framework

Park et al. (2019) defined hybrid learning as a blend of face-to-face (or synchronous) instruction and asynchronous instruction. The premise of hybrid learning established by the Park et al.'s definition is that a class meets face-to-face once a week for instruction and the remainder of the instructional time is offered in an asynchronous (online) format to make experiencing the course available to students who may not otherwise have the opportunity to complete the course of instruction. Using online technology, the instructor creates classroom activities for the online portion of the hybrid course that are conducive to learning the required content for the course (Park et al., 2019). While the Park et al.'s definition of hybrid learning describes the format of hybrid learning, it does not explain how the class format and the class activities translate into new learning for the students. Therefore, I used cognitive load theory to supplement Parker et al.'s definition.

As the theoretical foundation for this study, I used cognitive load theory, as interpreted and explained by Clark et al. (2006), as means to explore hybrid student academic performance as the culmination of the key supporting factors of attention to academic content and opportunity to participate. In practice, cognitive load theory was designed to be used in an educational setting to identify and reduce cognitive barriers

negatively affecting the learner's mental effort during new learning experiences. Therefore, by exploring student attention and opportunity to participate as elements of the learning environment affected by cognitive load, I used cognitive load theory to better understand community college students' perceptions of hybrid class elements that affect their academic achievement.

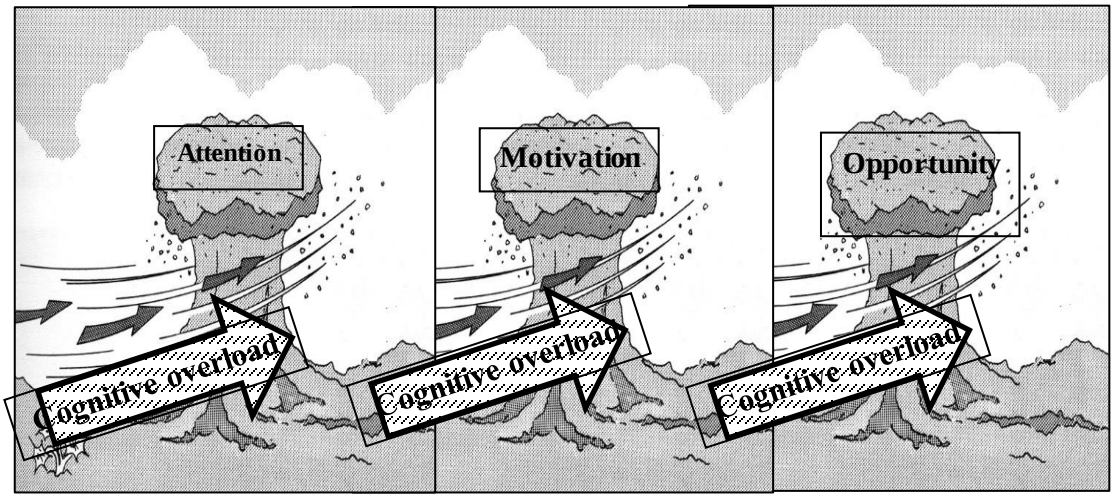
Cognitive load theory is a complete set of instructional principles based on the idea that the human cognitive system is only able to process 7 ± 2 bits of information at one time (Miller, 1956, as cited in Clark et al., 2006, p.7). This premise refers to the influence of short-term and long-term memory on learning. If a learner is presented more than 5-9 items of information at once, the short-term memory becomes overwhelmed. The items of information that can overwhelm the short-term memory are not only limited to the number of facts or the complexity of the content material, but also include elements specific to the hybrid classroom, such as the learner having to use the microphone to communicate and the learner feeling intimidated by the technology (Chisum, 2020). Learning occurs when the learner applies previous learning germane to the new information being moved from the short-term memory into the long-term memory before the short-term memory becomes overwhelmed (Clark et al., 2006) by uncontrolled extraneous and unattended intrinsic characteristics of the educational environment. In short, if a student is experiencing too great a cognitive load, academic participation, academic performance, and academic success decrease. To accommodate the restraints of human short-term memory, cognitive load theory represents a set of heavily tested

universal learning principles that can lead to more efficient instructional environments by using human cognitive learning processes (Clark et al., 2006, p. 7).

To operationalize cognitive load theory for this study, the theory needs to be understood not as inputs but rather as characteristics of performance as they are experienced by the students in the hybrid class. Therefore, the three types of cognitive load – extraneous (extrinsic), intrinsic, and germane – are less relevant to this study as individual components affecting the design and delivery of the course and more relevant in terms of their collective influence on student performance experienced positively as cognitive load and negatively as cognitive overload. Chapter 2 presented a more detailed description and discussion of cognitive load theory. Operationalizing cognitive load theory from a student perspective focuses on their attention to the class and their perceptions of the opportunities available to participate in the learning activities of the class. Figure 1 illustrates performance erosion due to cognitive overload.

Figure 1

Performance Erosion Due to Cognitive Overload (Horvath, 2020)



Note. Figure of academic performance erosion due to cognitive overload.

As shown in this researcher created original Figure 1, successful academic performance has a better chance to occur when learners pay attention during class, are motivated to learn, and recognize each opportunity to participate (Poffenbarger, 2017). Attention, in the hybrid learning environment, refers to a student's ability to focus on the academic content of the lesson, actively taking notes, and interacting with other students (Pavelea & Moldovan, 2020). According to Pavelea and Moldovan (2020), attention, along with attendance and academic involvement, have a positive effect on student academic performance. Attention is crucial for learners to be able to pick out irrelevant information that will overload working memory and to place relevant information into working memory (Clark et al., 2006).

Opportunity refers to a student recognizing the chance to participate effectively in the learning environment such as working with classmates and engaging in meaningful discussions (Lloyd et al., 2016). According to Lloyd et al. (2016), when a student

recognizes opportunities to participate in the lesson, work with classmates, and engage in meaningful discussions, a classroom community is built, which has a positive effect on student performance. To increase student performance, opportunities within the classroom community need to be recognized by the student to increase germane cognitive load without increasing their total cognitive load, that is, without becoming stuck in a cognitive overload situation (Clark et al., 2006). During new learning situations, germane cognitive load, the mental work created by instructional activities that aid the instructional goal, increases its relative proportion of total cognitive load enabling the learners to accommodate more effectively the newly acquired knowledge. Therefore, each student must recognize and seek out ways to connect the newly learned concepts to prior knowledge, so that schemata can be formed, to assist in moving the new information from short-term memory to long-term memory. Although the process of moving information from short-term memory to long-term memory increases germane cognitive load initially, as the student identifies and utilizes additional opportunities to practice applying the newly acquired knowledge, use of that knowledge eventually becomes more automated, reducing cognitive load and enabling additional learning (Clark et al., 2006).

Motivation occurs when the student feels driven to perform in the class (Poffenbarger, 2017). Intrinsic motivation (motivation that comes from within) and extrinsic motivation (behavior that is driven by external rewards such as praise) play a role in student academic performance (Buzdar et al., 2017). When students are of the mindset that they have the ability and the means to succeed in learning in the class and

the ability to be successful in the class, they will be motivated to perform in the class (Clark et al., 2006). If a student feels motivated to learn and perform in the class, they will interact with the learning environment by engaging in activities (e.g., take notes, complete activities) that help move the new information out of short-term memory and into long-term memory (Xu et al., 2021).

As depicted in the original diagram of Figure 1, student academic performance in a hybrid class can be eroded as each component part of effective learning leading to successful performance is undermined by cognitive overload (Poffenbarger, 2017). I used cognitive load theory (Clark et al., 2006) to gain an understanding of the lack of student academic performance in the hybrid classroom by asking the participants questions that will lead to rich data about what aspects of the learning environment appear to lead to or enhance their attention and opportunity to participate. I also used cognitive load theory to gain an understanding of students' perceptions of the lack of student academic performance in the hybrid classroom by asking the participants questions that lead to rich data about what aspects of the hybrid learning environment appear to erode or detract from their attention and opportunity to participate.

Nature of the Study

To gain a working understanding of community college students' perceptions of hybrid class elements that affect their academic achievement, I used a qualitative approach based upon data of the human experience and a basic qualitative design because of its flexibility. My multitiered rationale for using qualitative research was to gain an understanding of how people make sense out of their lives, outline the process (rather

than the outcome) of making meaning, and describe how people interpret their experiences (Merriam, 2015). The qualitative approach, as described by Merriam (2015), aligned with the problem statement and the purpose of this study because the best way to gain insight into an experience is to ask questions and speak directly to the individuals (the students in the hybrid class) about their understanding of the relationship between student academic performance as it is experienced through their attention, motivation, and opportunities to participate within the context of the hybrid learning environment.

The basic qualitative research design that I used differs from the other major qualitative approaches for conducting research, as it allowed me, as the researcher, to borrow tools from the other qualitative designs to use to frame, collect, and analyze data. For example, the basic qualitative design of this study had multiple participants, unlike a typical case study, which generally has only one or very few participants. And, while a phenomenological approach looks at a specific event and the insights of those who have experienced that event, this basic qualitative study looked at multiple elements of several specific events (Merriam, 2015). Still, elements of the phenomenological approach were relevant to this study as I was seeking to learn about the way elements of a learning environment appear to present themselves through unique individual human experiences (Vagle, 2014). An ethnographic approach often immerses the researcher as a subject for extended periods; in this basic qualitative approach, as the researcher, I was not immersed as a coparticipant of the research. However, the key ethnographic consideration of studying people in their own environment will be a crucial element of this study. The grounded theory approach tries to explain why a course of action

evolved the way it did, in other words, the design attempts to create or augment a theory (Thorne, 2016). I incorporated data analysis tools from the grounded theory approach into my study, however, instead of attempting to develop a theory, I used my findings to improve the knowledge of student learning in hybrid courses. The basic qualitative design is more pragmatic in nature, which allowed me to seek practical applications that emerge from the research study (Thorne, 2016).

The basic qualitative approach was the most appropriate for the problem and purpose of my study because this approach allowed me the flexibility to explore the perceptions of community college students regarding achievement in academics and classroom participation by collecting data in person. The problem and purpose of my study required understanding the context and environment the student experiences in the hybrid classroom. A basic qualitative study design is flexible, used to collect data to explore the challenges individuals deal with when attempting to accomplish their goals, and some of the richest data comes from observing and collecting data in person (Merriam, 2015). Hence, the basic qualitative design was appropriate to address the problem, purpose, and to answer the research question posed by my study. A more detailed description of these specific academic participation behaviors that will be documented during my study is presented in the discussion of concepts and variables in Chapter 2 and the research design and rationale section of Chapter 3.

The participants for this study were community college students, 18 years of age or older, who are currently or previously enrolled in hybrid classes at a southeastern North Carolina community college. The participants for data collection consisted of a

sample of 8 students. I conducted semistructured interviews with the participants. For the interviews, I used researcher-created questions, which were strongly based upon cognitive theory literature and reviewed before the interviews by a neutral third party experienced in asking dissertation level interview questions. See Chapter 3 for complete methodological descriptions.

Definitions

The following terms were used throughout this basic qualitative research study:

Attention: Attention is the ability to choose and concentrate on relevant information**.** The cognitive process that makes it possible to place oneself (ex: through self-efficacy) towards relevant information and respond to it accordingly (Clark et al., 2006).

Cognitive load: The amount of information that working memory can hold at one time (Clark et al., 2006, p.13).

Cognitive overload: Cognitive overload occurs when working memory receives more information than it can process (Clark et al., 2006).

Hybrid learning: Hybrid learning is an educational method that combines on-campus (face-to-face) and synchronous online learning classroom hours (Yousry & Azab, 2022).

Motivation: Motivation is an internal and instinctual process that moves individuals to take actions that would allow them to achieve their desired goal (Poffenbarger, 2017).

Opportunity: Opportunity refers to students recognizing (by connecting the new

material to current knowledge and through self-efficacy) the chance to participate in the lesson, work with classmates, and engage in meaningful discussions (Lloyd et al., 2016).

Student academic performance: The degree to which a student has achieved his or her short or long-term academic goals (Swecker et al., 2013).

Student retention: Retention is defined as the continuous enrollment of students from one academic year to the following academic year (Swecker et al., 2013).

Assumptions

Several assumptions underpinned this study. The first assumption to consider is that the student participants were willing and able to answer questions open-mindedly and honestly to provide useful data or rich descriptions based on their experiences in the hybrid classroom. This assumption is important to the study because if participants did not answer the interview questions truthfully, the trustworthiness of the study could have been compromised (Maxwell, 2008).

A second assumption is that participants had critical insight and the ability to express their critical insight in a logical and descriptive manner into what enhanced or detracted from their attention, motivation, and opportunity to participate in the hybrid classroom. This assumption is important because I used student perceptions of their own behaviors to help me identify elements of cognitive load theory that influence learning in the hybrid classroom. While students did not know or need to know cognitive load theory, I assumed that they should know and were able to recall their own behaviors related to the presentation of the hybrid class.

A third assumption was that student participation includes attending class and submitting required work to complete the course. Participation was not limited to answering questions in class and participating in class discussions. This assumption was important to my study because when discussing class participation with students, they may have considered attendance and completing course assignments as class participation.

These assumptions were important for this study to allow the focus to be on the data the student participants provided without the researcher focusing on potentially confounding variables that could have been part of the hybrid classroom environment. The focus of the data collected was exclusively on student perceptions of the hybrid class experience. The data collected were from the students on their experiences in the hybrid classroom that enhanced or detracted from their academic performance in the course.

Scope and Delimitations

The scope of this study focused on hybrid classes because these courses are currently the mainstay of synchronous learning and may continue as such well into the future. The scope of this study included first and second-year community college students who were currently or previously enrolled in one or more hybrid course. Because community colleges traditionally include only freshman and sophomore students, the study excluded any students who were juniors and seniors at the university level. No other types of distance or online learning classes were used in this study; only courses specifically identified in the college course catalog as hybrid classes were studied. Additionally, for this study, data collection was limited to hybrid classes at one

community college in southeastern North Carolina. The study was limited to hybrid classes because the dropout rate in hybrid classes was higher than the dropout rate in face-to-face classes (Kayalar, 2021).

This study was not delimited to a specific subject area or specific instructor. The participants of the study were students in hybrid classes taught by a variety of instructors from a variety of disciplines. To preclude the content matter of the course and the instructor as potentially influencing a lack of student performance in the hybrid class, the scope of the study included participants from various disciplines who had different instructors.

A research study similar to this one was conducted and reported in the literature, but it differs from the current one in substantial ways (Chakraborty & Nafukho, 2014). Chakraborty and Nafukho (2014) completed a study to address the problem of student engagement in the online classroom. The study used the theory of motivation and learning as a guide, which was interpreted by using the behaviorist, cognitivist, and constructivist schools of thought. Their theoretical framework was not used for this study because their theoretical framework was used to understand students' engagement strategies that work, not student experiences that enhance student academic performance influenced by manifestations of cognitive load.

This study has potential transferability to other educational institutions and the hybrid courses they offer. The results of the study can inform course designers and educators as to what they need to do in future hybrid courses to increase student attention, student motivation, and opportunities for student participation. The results of

this study also provide information to course designers and educators so that cognitive overload can be decreased in future hybrid classes.

Limitations

Potential participant attrition was one limitation of this study. There may have been students who dropped out of hybrid courses before my research who could have been potential participants for my study. Therefore, due to college privacy laws, I did not have access to those students who dropped out of the courses earlier in the semester. I prepared for possible participant attrition by creating a larger sample population to assure access to sufficient student participants. I discuss the possibility of a small sample size in more detail in the Trustworthiness section of Chapter 3.

The student participants were not trained in cognitive load theory nor is it likely they knew what it is or how it works. As a result, they may not have responded directly to my data needs as shown in Figure 1. I addressed this potential limitation to my study by creating an interview protocol that will create enough student reflection and recall acquiring the type of data I was seeking.

There may have been researcher bias that could have influenced the outcome of the study. My constructivist worldview could have had an influence on my study in that I believe that the academic environment of the classroom can have a profound effect on how each individual student is enabled and makes meaning through the learning process. I have been teaching hybrid learning classes for several years. Though this experience was used to enhance the evaluation, I was also aware that as a result, I could have had preconceived notions about student engagement and technology in the hybrid

classroom. To control any personal biases that I may have had that could have influenced the outcome if my study, I maintained a journal of what I planned to do and I wrote reflections on any decisions I made. This will be described in more detail under The Role of the Researcher in Chapter 3.

Another limitation to this study was geographic limitation. This study was conducted at one community college in North Carolina. Therefore, the results may not be generalizable to community college hybrid classes at other community colleges or in other states.

Significance

The significance of this basic qualitative study was to determine community college students' perceptions of hybrid class elements that affected their academic achievement. The stakeholders in the educational community benefited from the results of this study were the students, administrators, educators, and student affairs professionals. This study provides community college leaders, administrators, and student affairs professionals with data that may enable them to design courses that are more effective in meeting student needs. This study may bring about social change by enabling community college course designers to create more effective community college classes, thereby increasing student achievement.

There is a need for community college leaders, administrators, and student affairs professionals to focus on the student populations they serve. There is also a need to focus on the instructional or institutional factors that contribute to or hinder student academic performance. Now that the factors that contribute to the lack of student academic

performance in hybrid classes have been identified, college administrators and course designers can begin to examine ways to develop practices that encourage student academic participation, academic performance, and re-enrollment until each student's educational goal of graduation is achieved (Watts, 2016).

Hybrid learning will continue to be a part of higher learning into the future (Park, et al., 2019). Although hybrid courses have allowed colleges and universities to reach a wider audience for several decades, little current research has been conducted to explore the effectiveness of these courses on student academic performance as experienced by individual community college students (Park et al., 2019). By understanding the firsthand experiences of students in hybrid classes who believe they are being challenged by a lack of student performance in their respective hybrid learning environments, this study helped fill the gap in the current research on hybrid learning.

With the growing reliance upon distance education at community colleges, including hybrid classes, plus the disconcerting higher course dropout rates of students taking hybrid courses, addressing the lack of student academic performance in hybrid classes may lead to a better understanding of why students in hybrid classes encounter greater disassociation from their courses. Uncovering the means to increase student academic performance in hybrid courses can lead to an increase in student retention in these courses. An increase in student retention may lead to higher student graduation rates.

There are several potential implications for positive social change that are consistent with and bounded by the scope of this study. Through this research study and

similar studies that may arise, there will be a better understanding as to how students make meaning out of the hybrid learning environment, how students interact with one another in the hybrid learning environment, and what aspects of the technology used in the hybrid learning environment may lead to better student academic performance. The data collected can be used to create a more engaging hybrid classroom environment by changing the specific elements in the classroom that hinder student academic performance.

Summary

In Chapter 1, I introduced the central aspects of student academic performance, synchronous and asynchronous learning environments, and the hybrid learning classroom. I have also sketched the study's background, problem statement, theoretical foundation, and conceptual framework. Finally, I laid out the definitions pertinent to the topic, the research question, and the significance of the study.

In the background section of this chapter, I discussed the use of technology for instructional delivery in the distance learning classroom, the hybrid classroom, the advantages and disadvantages of this type of learning environment, and the dropout rate associated with hybrid courses. In the problem statement section of the chapter, I discussed why the lack of student academic performance in hybrid courses is a problem. In the purpose section of the chapter, I discussed the purpose of this study, which is to better understand student perceptions of the lack of student academic performance in hybrid courses. In the conceptual framework section of this study, I discussed cognitive load theory. In the nature of the study section, I discussed how I would apply the

cognitive load theory to my study, and I discussed the methodology I will use to complete the study, semistructured interviews.

The focus in Chapter 2 now shifts to a review of the literature on the concepts of student academic participation, synchronous and asynchronous learning environments, and the hybrid learning classroom. This literature review culminates in a discussion of cognitive load theory (Clark et al., 2006), the theoretical foundation and conceptual framework for the study. In particular, the chapter includes reference to past methodologies on the study of student participation and their limitations and methodological considerations for the study.

Chapter 2: Literature Review

In this literature review, I examine student academic performance in the hybrid learning classroom. The specific research problem addressed in this basic qualitative study is the gap in the research on community college students' perceptions of hybrid class elements that affect their academic achievement (Park et al., 2019), which is a problem that needs to be addressed at the educational institution level as well as within the student population (Watts, 2016). The literature has demonstrated that there is a lack of student academic performance in hybrid courses, which leads to a high student drop-out rate in many courses delivered through the hybrid modality. Park et al. (2019) found that hybrid courses are not equivalently interactive to face-to-face courses. Park et al. also found the noncompletion rate hybrid classes is greater than the noncompletion rate in traditional courses (as cited in Bekkering & Ward, 2020; Quweider et al., 2019). Notably, Bekkering and Ward (2020) and Clark et al. (2006) contended that a lack of student participation could be the observable manifestation of other issues, such as lack of attention and lack of opportunity to participate. The purpose of this basic qualitative study was to determine community college students' perceptions of hybrid class elements that affect their academic achievement.

The main content sections of Chapter 2 are the Literature Review Related to Key Variables and Concepts and the Conceptual Framework sections. In the Literature Review Related to Key Variables and Concepts, I build a trajectory of current research leading to and supporting the importance of the current study. In the Conceptual Framework section, I will examine and explain the phenomenon to be studied and the

theoretical foundation for that framework and related research. The chapter closes with a summary of the chapter and a transition into Chapter 3.

The Literature Search Strategy

To identify the studies to be included in this review, I conducted an organized search using multiple libraries and search engines. The resources I used include scholarly peer-reviewed articles and books from Walden University's online library and local libraries in my North Carolina community. I also used Google Scholar®, as well as ERIC, ProQuest Central®, Academic Search Complete, and Education Research Complete.

Additionally, I completed a systematic search for materials related to concepts and research associated with student academic performance in distance learning, specifically focusing on the hybrid learning classroom and information on student completion rates in distance learning classrooms. The focus of the majority of the articles found was distance learning, online learning, hybrid classes, and student academic performance. Out of all of the literature that I reviewed, the articles that focused on synchronous learning, student academic performance, and the hybrid classroom became the foundation of the literature that I used to inform and support my study. The best source of data was ProQuest Central.

I also reviewed books and articles on completing a basic qualitative research study to gain knowledge on how to complete my study and to complete this extensive and comprehensive literature review. The search terms I used in Google Scholar®, as well as ERIC, ProQuest® Central, Academic Search Complete, and Education Research

Complete to complete this literature review included *student academic participation, student academic performance, distance learning, motivation, opportunity, attention, technology, hybrid classroom, technology used in hybrid classrooms,* and *student completion rates in synchronous learning classrooms.* These search terms provided the basis to advance the literature review on hybrid classes, student academic performance, and student completion rates in hybrid classes. The search term that worked the best when accessing scholarly and peer-reviewed articles on my topic in ProQuest® Central was *student academic performance*. I also developed synonyms and phrases for each topic including their singular, plural, and abbreviated forms, and then combined them using the Boolean operator AND. A limitation of this search was that only studies in the above-mentioned databases were identified. To account for the possibility of exclusion of relevant articles outside of these databases, I searched Google Scholar® and used citation chaining. Citation chaining means searching backwards and forwards in time for materials that are cited by and that cite an article or resource I already had. As the name implies, one resource links to another, which links to another, and so on to create a chain of relevant literature titles.

I targeted research articles from peer-reviewed journals during my search, and I excluded non-researched articles and dissertations. I excluded non-researched articles and dissertations from my search because the focus of my search was scholarly sources, including primary works. I also excluded articles published in languages other than English. To obtain the latest research on the topics I reviewed for use, I made every effort to locate resources that were published within the last 5 years. Therefore, while I set no

specific time range for my inclusion criteria, the latest publication dates identified and used for the review were from 2019. The literature that I included in this review that are dated prior to 2019 tend to be seminal works and literature that have specific relevance to my study.

The literature has demonstrated that there is a lack of student academic performance in hybrid course, which leads to a high student drop-out rate in many courses delivered through the hybrid modality. Irani-Kermani et al. (2021) found that hybrid courses are not equivalently interactive to face-to-face courses because student academic participation in the hybrid classroom, which is directly related to student academic performance, cannot be monitored as closely as it can be in face-to-face classroom settings. Also, depending on course design and timeframe, instructors cannot be as responsive to student questions in the hybrid classroom as they can be in a face-to face classroom setting (Bekkering & Ward, 2020; Quweider et al., 2019). Educators need to present students with opportunities to participate in the internet-based hybrid classroom and students need to take advantage of each opportunity to participate in order to make the classroom more interactive. As a result, student academic performance will increase and the student drop-out rate will decrease (Bekkering & Ward, 2020; Quweider et al., 2019).

Students are less engaged with their courses and their college when they take hybrid courses instead of face-to-face courses (Bekkering & Ward, 2020; Quweider et al., 2019). The results from a recent evaluation, the National Survey of Student Engagement (2021) revealed that distance learners, including those taking hybrid classes, when

compared to their on-campus counterparts, were not as involved in active and collaborative learning, worked with less frequency with other learners on class projects, and worked with less frequency with other learners to complete class projects or to prepare for class assessments (Fredrickson, 2015). When students and educators employ strategies to reduce cognitive load in the learning environment (which in turn will increase student attention, student motivation, and opportunities to participate), students will become more engaged and the result will be higher academic performance (Bekkering & Ward, 2020; Quweider et al., 2019).

The History and the Future of Hybrid Instruction

Prior to the COVID-19 pandemic, hybrid learning was used in community college institutions to reach students who were not able to attend classes on campus. Student academic performance in hybrid classes was lower than student academic performance in face-to-face classes, which demonstrates that the hybrid learning environment was not as conducive to learning and as efficient as the face-to-face classroom (Szeto, 2014). During the COVID-19 pandemic, community colleges turned to offering a greater number of hybrid classes due to the shut-down of in-person learning. Although hybrid learning has improved through greater use, student academic performance in hybrid classes continues to be lower than student academic performance in face-to-face classes (Park et al., 2019).

The use of hybrid learning enables instruction to be delivered to students who may not otherwise be able to achieve their educational goals of course and program completion. Looking at the history of hybrid instruction, current hybrid instruction, and the future of hybrid instruction is key to gaining an understanding of this learning

environment. Understanding the hybrid learning environment may lead to a more efficient classroom in the future (Park et al., 2019).

The History of Hybrid Instruction

Understanding the history of hybrid classes helps one understand why the classroom format has been and will continue to be an integral part of distance education in the future. Blended learning began in a very primitive form in the 1840s with educators and students corresponding through mail (Singh et al., 2021). As technology advanced, hybrid classes changed, and students gained the capability to submit course work online. According to Singh et al. (2021), the 1970s and the 1980s saw advances in technology that enabled educators to offer hybrid courses from several locations and students were able to submit course work online.

Advances in technology have allowed hybrid courses to be offered at higher learning institutions. According to Gagnon et al. (2020), blended and hybrid instructional modalities have been widely implemented in higher education learning since the early 2000s. Gagnon et al. (2020) pointed out that a 2008 report found that 35% of all 2- and 4-year degree higher education institutions offered hybrid courses, and nearly two-thirds of two-year higher education institutions, including institutions with more than 10,000 students, offered hybrid courses (Gagnon et al., 2020). As enrollment in higher education institutions has declined, enrollment in distance learning courses, particularly hybrid classes, has increased. To demonstrate this trend, during the fall semester of 2016, 31.5% of the students who were enrolled in higher education institutions were taking at least one distance education course, which is a 5.6% increase from the 25.9% enrollment in 2012.

In 2016, there were over 5 million undergraduate students and 1 million graduate students who reported taking distance education courses (Gagnon et al., 2020). Student enrollment statistics in hybrid classes in 2018 indicated that online classes are prevalent in higher education. According to Wang et al. (2022), 34.5% of all undergraduate students took at least one distance education class and 14% of all undergraduate students were enrolled in higher education degree programs that were entirely online.

Current Hybrid Instruction

The use and evolution of hybrid courses in the current educational environment is being driven by student demand for this leaning modality. According to Irani-Kermani et al. (2021), students experienced hybrid learning during the COVID 19 pandemic, and many students decided to continue to learn through this modality once face-to-face learning commenced. Some reasons students decided to continue to learn through hybrid classes are convenience, transportation issues, along with family and work obligations (Irani-Kermani et al., 2021). As a result, student retention in distance learning courses is of interest to researchers because of the cost incurred by the educational institution along with the cost to the students who enroll in distance learning courses. Though the most recent figures available suggest that student enrollment in distance learning classes has increased by 62% from 2016-2020, the dropout rate from distance learning classes is extremely high, 45%-85 (Irani-Kermani et al., 2021). Increased enrollment in distance education courses leads to increasing concerns about the outcomes for the students. Course completion is an important measure of student outcomes and the success of a distance learning program. From the institution of higher learning perspective,

universities and colleges are now required to demonstrate that they are retaining students and that students are completing their academic goals for them to receive necessary funding for continued operation. From the student point of view, dropping out of a course can impede progress towards degree completion, create a financial loss, and the student may experience psychological distress related to the decision to withdraw (Mohammadian et al., 2021).

The primary objective of using hybrid courses has been to give students access to courses that they may not otherwise have access to. Hybrid course offerings may help with student retention because students have more options, and greater access to, the classes they need to complete their degree programs. When students have access to all the classes they need to persist and successfully complete their degree programs, they are more likely to stay at the education institution and complete their plan of study (Szeto, 2014).

The use of hybrid learning in educational institutions has become increasingly driven by cost factors and learning flexibility this modality provides following the COVID-19 pandemic. The application of videoconferencing for the asynchronous portion of hybrid courses has become primarily used to distribute live or pre-recorded lectures to students rather than enrichment of the educational experience (Szeto, 2014). To enhance cost-effectiveness, videoconferencing is often used as a tool for hybrid teaching. The students may also receive instruction from the educator through videoconferencing technology. While hybrid courses have allowed colleges and universities to reach a wider audience for decades, little current research explores the effectiveness of these courses on

student engagement as experienced by community college students (Gagnon et al., 2020; Park et al., 2019).

As technological capabilities have increased (such as faster internet connections, wireless microphones, and document cameras), hybrid courses have evolved to the current state that allows synchronous and asynchronous interactions of multiple types (Gagnon et al., 2020). There have been vast improvements in the technology used to deliver hybrid classes. However, hybrid instruction remains a product of strengths and weaknesses.

The strengths of hybrid learning are related to accessibility, real-time communication, and real-time activities (Thrasher et al., 2014). According to Thrasher et al. (2014), the strengths of hybrid learning courses include the following: Students can take courses that they may not otherwise have access to, which helps them reach their academic goal of degree completion. Students can communicate in real time with the educator and classmates while class is in session during the face-to-face portion of the class.

The weaknesses of hybrid learning are largely focused on technology and teacher training (Mohammadian et al., 2021; Thrasher et al., 2014). According to Thrasher et al. (2014), the weaknesses of the technology used in the hybrid classroom include the following: There may be audio issues with the technology (internet connection or internet speed), issues with the microphones (if the course is offered in a synchronous format); technical difficulties occur, especially in rural areas due to poor internet connection. According to Thrasher et al. (2014), the weaknesses of teacher training in the hybrid

classroom include the following: the educator teaching the hybrid course may not have adequate training in hybrid instruction and there is often a lack of student engagement in hybrid courses.

There are barriers to student academic performance that are associated with hybrid learning. Improvements can be made to the hybrid classroom when barriers to student academic success are identified and removed. Community college students, for example, frequently do not participate in extracurricular activities offered on campus, often do not take advantage of campus student services, have varying backgrounds of academic preparation, and face many competing life and school obligations (Teranishi et al., 2011, as cited in Alicea et al., 2016). According to Van Rhijn et al. (2016), distance learning students struggle to access needed resources to complete coursework, have limited access to support services, and may not have flexible study options, such as working with faculty members and classmates (Suarez-Orozoco et al., 2016; Van Rhijn et al., 2016).

Hybrid Education and the COVID-19 Pandemic of 2019

In 2019, a new airborne illness called COVID-19 quickly spread across the globe, creating a worldwide pandemic. Throughout the United States and throughout the world, there was a lockdown, which preempted and in person gatherings, including university classes. This pandemic and resulting lockdowns caused educations of higher learning to scramble to quickly make in person classes remote classes.

The COVID-19 pandemic of 2019 lockdown occurred on March 20, 2020. Educators and students had to adjust to online course educational format almost

overnight. Hybrid learning continued through the use of technological forums, such as ZOOM and Blackboard Collaborate. The use of technology enabled students and educators to continue to meet as a class in leu of face-to-face meetings (Serhan, 2020).

Although technology enabled hybrid courses to continue, there was not enough preparation time when the COVID-19 lockdown occurred for educators and students to prepare for this shift in educational methodology. Educators did not have sufficient time to design quality hybrid courses when the classes suddenly shifted to ZOOM or Blackboard Collaborate. Students did not have sufficient time to adjust to using the technology, which created frustrations in the learning process and hindered student academic performance (Park et al., 2019).

The COVID-19 pandemic shutdown of in person learning in 2020 had a positive impact on student academic performance in hybrid classes. According to Serhan (2020), student academic performance in hybrid classes has improved since in person learning resumed and hybrid classes are now more conducive to learning. However, student academic performance in hybrid classes continues to be lower than student academic performance in face-to-face classes, which calls for more research on hybrid learning (Serhan, 2020).

Hybrid Instruction and the COVID-19 Pandemic

During the COVID-19 pandemic, even though in person instruction stopped, hybrid learning still occurred by technology. The courses were still considered hybrid because a portion of the instruction occurred online. The face-to-face portion of the hybrid course occurred through ZOOM or Blackboard Collaborate meetings and the

remainder of the instruction occurred through asynchronous (completely online) learning (Park et al., 2019). Since the lockdown was lifted, in person learning has resumed and hybrid classes now meet in a face-to-face format, along with a portion of the instruction occurring online.

Hybrid learning has a very important role in the future of higher education. The COVID-19 pandemic has demonstrated that distance learning plays a bigger role in how instruction is delivered to learners now more than ever. As technology has advanced, educational institutions have shifted focus from second-generation technologies, such as instructional television, to third-generation platforms, such as face-to-face interactive online learning (Chisum, 2020). There remains a current and future need for hybrid courses in educational institutions. The recent COVID-19 pandemic made ZOOM technology a household word as ZOOM internet technology provided individual students with access to course materials presented from a single point of delivery. Even though some academic leaders question the quality of distance learning, they are in general agreement that hybrid courses are more promising for the future than fully online (asynchronous) courses, and the majority believe the outcomes of hybrid courses are the same or may exceed face-to-face instructional modality. The 2016 NMC Horizon report identified hybrid learning as one of the six biggest trends driving the adoption of technology and higher education decision-making. Advances in internet technology, such as improved internet connection speeds, allow for creating, sharing, and streaming video and have accelerated the use of hybrid learning. The flexibility, increased access, and

future innovations have led many educators and administrators to refer to hybrid learning as the new normal (Gagnon et al., 2020).

Virtual hybrid environments, such as ZOOM meetings, will play a big role in educational delivery well into the future (Serhan, 2020) As technology changed to fit the needs of learners and educators during the COVID-19 pandemic, the use of ZOOM meetings as an alternative venue to face-to-face class meeting has become very popular. The use of ZOOM meetings also created a new venue for hybrid students, as they can now attend class from a personal computer at home or on campus anywhere a computer is available (Serhan, 2020). This new technology has new features that resemble a classroom, which made the transition to synchronous classes easier during the COVID-19 pandemic. According to Brainard and Watson (2020), educators and students found features in ZOOM, such a whiteboard, chat capabilities, screenshare capabilities, and a hand raise button very conducive to conducting synchronous classes. There are also drawbacks to using ZOOM as an alternative classroom. Although students and educators expressed that they would like to have more technology implemented into the classroom, the technology used in ZOOM to create a virtual classroom can become a distraction (Brainard & Watson, 2020). Also, there are students who do not have internet access at all and there are rural areas not serviced by broadband. Internet technology is (and will be in the foreseeable future) the primary means of academic access for many students who live in rural areas (Chisum, 2020).

The evolution of hybrid classes, as demonstrated during the recent pandemic, has pointed out that there is a need for more teacher training for future hybrid courses

(Serhan, 2020). In addition to skill development related to evolving technology, another area of focus for teacher training for future hybrid courses will be on how to make hybrid courses more interactive. According to Chisum (2020), most hybrid instruction is delivered in lecture format. Most educators find it easier to deliver instruction through lecture because of the limitations of the technology in the synchronous hybrid classroom (Chisum, 2020).

There is also a need for student training for future hybrid synchronous learning classes. According to Chisum (2020), some students feel overwhelmed by the technology used in the classroom. The educational institution could offer training workshops for the students to teach them how to use the technology. Another option is to have training offered to the students during the first week of class. When students are comfortable with technology, they will be more interactive, more engaged, more motivated, more attentive, and they will take advantage of opportunities to participate (Chisum, 2020).

The future of hybrid instruction is full of possibilities and the virtual classroom will be used well into the future in the field of education (Snow & Coker, 2020). According to Snow and Coker (2020), the use of simulation and gaming technologies have been explored for potential use in the hybrid classroom. The viewpoints of educators and students regarding the effectiveness of hybrid courses as a medium of instructional delivery were measured, and the findings suggested that future technological advancements will be advantageous to student learning, engagement, and overall development of skills (Snow & Coker, 2020).

Literature Review Related to Key Concepts and Variables

While there has been a substantial amount of research related to student engagement, little of it has been conducted from the student perspective. As a result, little is known about the way students perceive engagement, attention, motivation, and participation in the hybrid learning environment (Chisum, 2020). The goal of my study is to gain insights into student perceptions on the lack of student academic performance in the hybrid classroom, which is directly related to the lack of student engagement, manifested as student attention, motivation, and opportunities to participate.

Despite increased enrollment in distance learning classes, the non-completion rate in the distance learning classroom is extremely high. According to Hussain et al. (2018), the noncompletion rate in distance learning classes is 40% to 80%, which is 10% to 20% higher than face-to-face classes (Park et al., 2019). There is a direct correlation between the lack of student engagement, student academic performance in academic courses and student dropout rate (Korobova & Starobin, 2015). Hybrid courses are among the distance learning courses with the lowest student academic performance, which may lead to the high non-completion rate seen in these courses (Hussain et al., 2018). Therefore, examining the lack of student engagement and student performance as they relate to the high noncompletion rates in hybrid courses seems imperative.

According to Korobova and Starobin (2015), the best predictors of whether a student will graduate are academic participation, student motivation, and student attention, often grouped together and referred to as student engagement. An important piece to reducing the student dropout rate in virtual learning environments is to

understand how to engage students in activities that are meaningful to them. If a student perceives academic activities as meaningful to them, their participation in class activities increases, their experiences become more engaging, and the probability of high assessments grades and course completing increases (Hussain et al., 2018). On the other hand, when students are not engaged in the class activities, they are less likely to pay attention to the new content presented by the instructor, they are less motivated to learn, and the students will be less likely to take advantage of opportunities to participate in classroom activities (Lina et al., 2020).

Astin (1985) and Collaçe (2017) found that student engagement is a difficult term to define. Attempting to accommodate what Korobova and Starobin (2015) called academic meaningfulness, definitions of student engagement have included both behavioral and affective components (Collaçe, 2017). Astin and Collaçe characterized student academic engagement as the learners being actively involved in the learning process by asking questions or working collaboratively with classmates. However, they pointed out that there is more, such as an interpersonal component. For example, an interpersonal component to student engagement might be a student working outside of class with classmates to prepare for an assessment or a teacher mentoring a student who is completing a project (Lina et al., 2020). An example of a behavioral component to student engagement from a student's perspective may be, "I want to be active, participate, do what it takes, and take responsibility for my learning." An example of an affective component to student engagement from a student's perspective may be, "I feel at home, I know people and people know me, and I feel safe and included." While it is helpful to

have a reasonable working definition for student engagement, it is also useful to understand that engagement exists as a continuum comprised of multiple levels of engagement. As a result, students and educators may have different perceptions of what it means to be engaged in a course. The student may perceive that they are engaged in the course at the right level, but the educator may not agree. By bringing together the concept of an engagement continuum with a useful working definition of engagement, it becomes possible to expect that student engagement is higher in a course that is interactive enough to maintain student attention, and when the new material is presented in different modalities to reach all types of learners enabling them to participate (Collaçe, 2017).

According to Anderson (2016) and Price and Tovar (2014), the lack of student academic performance in distance learning courses, including hybrid courses, continues to be a problem many educational institutions encounter when students become overwhelmed and frustrated resulting in a lack of student attention, student motivation, and student participation. Student attention can be described as students actively interested as new material is presented in the classroom, taking notes as the new material is presented by the instructor, marking their texts, writing response papers, and being prepared for class with all necessary materials (Lina et al., 2020). Student attention is related to successful engagement because a student paying attention to the new material, actively interested, and prepared for class, is more likely to actively participate in classroom activities (Lina et al., 2020).

It is essential to recognize the signs of a lack of student attention in the classroom in order to assist students and to make the classroom environment more effective. A lack

of student attention can be described as the learners sleeping in class, the learners are engaged in disruptive or disorderly chatting, chronic tardiness, and when students are habitually silent during class discussions. A lack of student attention may lead to a lack of student performance, which may lead to unsuccessful completion of the course (Garrett, 2011).

Student motivation can be described as a willingness or a desire to learn, along with the belief that course completion is an attainable goal (Lina et al., 2020). A student motivated to learn (intrinsically or extrinsically) is more likely to be engaged in classroom activities (Price & Tovar, 2014). In order to identify motivation in students, it is essential to recognize identifiable characteristics of a motivated student. Student motivation can be identified through participation (asking or answering questions), autonomy (working or researching independently), self-confidence (feel more powerful), curiosity, competitiveness, recognition (seek recognition for achievements), membership (boast about their work), engaging in debate, asking any questions and investigating the problems in class that were discovered through independent reading, writing reflection papers, making relevant connections with additional texts and writers, examining deeply a text or research problem, and marking their texts (Lina et al., 2020).

It is important for educators to recognize a lack of student motivation in the classroom so they will be able to assist students and create a classroom environment that will increase student motivation. A lack of student motivation can be described as a student reading material not relevant to the course, chronic student tardiness, a student being habitually silent during class discussions, and a student not submitting assignments.

A lack of student motivation may lead to a lack of student performance, which may lead to unsuccessful completion of the course (Garrett, 2011).

To facilitate learning for students and to make the classroom more interactive, educators need to provide opportunities for students to participate. An interactive classroom, where students have opportunities to actively participate, work together, and apply the new learning material, brings about a sense of belonging for the students while they are actively engaged in the learning process (Lloyd et al., 2016). According to Lloyd et al. (2016), when students find success in a course through attention and motivation, they gain self-confidence and a desire to get involved in their own learning. Once students have a desire to get involved in the classroom and get involved in their own learning, they are more likely to create and take advantage of opportunities to participate (Lloyd et al., 2016). A student taking advantage of opportunities to participate is in all likelihood to be engaged in learning activities and in the lesson (Lina et al., 2020). Student attention, student motivation, and opportunity to participate all increase student engagement, which increases student academic performance (Price & Tovar, 2014). It is critical for educators to provide opportunities for students to participate and for students to take advantage of all of the opportunities to participate in the classroom to make learning more effective.

Finally, it is important to point out that the technology used in the hybrid classroom has an effect on student academic attention, motivation, opportunities to participate, and academic performance. Students may feel intimidated by the technology that is used in this classroom environment. They may not be comfortable being on

camara and it may be difficult for them to get used to using a microphone when speaking (Myers et al., 2015). Also, technical difficulties may occur during the class session, such as loss of the internet connection, causing interruptions to the instruction and negatively impacting student engagement, student attention, student motivation, and opportunities to participate (Myers et al., 2015).

Research has shown that effective student attention to what transpires in class, a positive motivation to use the class resources to achieve academically, and a sense of efficacy associated with seizing on opportunity to participate can lead to higher student performance, which leads to a higher course completion rate. Student attention, motivation, and opportunities to participate are elements that previous researchers have demonstrated are key elements for future research (Lina et al., 2020; Myers et al., 2015; Price & Tovar, 2014). However, researchers have done little with studies on student attention, student motivation, and opportunities to participate in the hybrid classroom from a student perspective. My study focused on the elements of student attention, student motivation, and opportunities to participate in the hybrid classroom from a student perspective to fill this gap in the research.

Conceptual Framework

The phenomenon I addressed in this study is the lack of knowledge of community college students' perceptions of hybrid class elements that affect their academic achievement, which has been overlooked by previous researchers (Dada et al., 2019). To improve hybrid leaning, it is essential to understand community college students' perceptions of hybrid class elements that affect their academic achievement. According to

Dada et al. (2019), having insight as to what students perceive as helping their motivation, academic participation, and opportunity to participate will increase their academic performance and the environment will be more conducive to learning. Gaining insights as to what community college students in hybrid classrooms perceive as helping their academic performance will help instructors make future hybrid courses more efficient and effective, leading to greater student engagement and a higher student retention rate (Pavelea & Moldovan, 2020). This is particularly imperative because there has been an increase in demand for hybrid classes in recent years, especially since the beginning of the COVID19 pandemic (Pavelea & Moldovan, 2020).

I used cognitive load theory as the theoretical foundation supporting the conceptual framework of my study. Cognitive load theory served as a guide to help me recognize and collect the subjective student data specific to the needs of my research question. The operationalization of the conceptual framework will help me to look specifically at student perceived and described manifestations of cognitive overload as those concepts are encountered as increasing or decreasing their attention, motivation, and participation (Figure 1) in the hybrid classroom.

Cognitive load theory is a complicated but heavily researched learning theory comprised of three main cognitive-influencing elements shaped by multiple effects (Sweller et al., 2011, 2019, as cited in Sweller, 2020). That being the case, as opposed to attempting to determine what undergraduate students might know about cognitive load theory, I used the conceptual framework for my study to reinterpret key outcomes of the theory to represent positive and negative aspects of the perceived learning experience

represented by student attention to the instruction, motivation to learn the instructional content, and opportunities to participate in the learning activities. Therefore, after a brief general overview of cognitive load theory, to describe operationalizing the conceptual framework from the student perspective, each element of Figure 1 will be described in terms of how the element is a manifestation of cognitive load theory.

Cognitive load theory is a group of universal learning principles that have been demonstrated to result in efficient learning environments as a result of using human cognitive learning processes (Clark et al., 2006). Cognitive processing is a two-part process involving short-term and long-term memory. A cornerstone of cognitive processing of information is Miller's (1956, as cited in Clark et al., 2006) foundational theory that the human cognitive structure can only process 7 ± 2 items of new information at once. Once this threshold of 7 ± 2 items of new information is reached, the new information in short term memory must be moved to long-term memory to prevent short-term memory cognitive overload and for learning to occur. As the human brain processes new information, it categorizes that information and transfers it from short-term memory into long-term memory, where it is placed in knowledge structures called schemas (Costley & Lange, 2017). It appears that schemas organize information according to how it is used. Schemas fluctuate in their degree of complexity and automation. Once the new information is organized into schemas, the learner can recall the information as needed to connect additional newly presented information to the information stored in the schema. Connecting newly presented information to organized information in the schema is when true learning occurs (Kalyuga & Liu, 2015).

To understand how learning occurs, it is important to understand the three types of cognitive load. When cognitive overload occurs, the new information presented to the learner is not transferred from short-term memory to long-term memory (Clark et al., 2006). In hybrid classes, there are environmental factors that may contribute to cognitive load, such as the technology used or the methods in which the information is presented (Clark et al., 2006; Kalyuga & Liu, 2015).

Germane Cognitive Load

The efficient and effective building of schemas is strongly influenced by three main types of working memory load (Clark et al., 2006; Kalyuga & Liu, 2015). Germane, or relevant load, is associated with the working memory resources that are required for completing a learning task or activity by learners with a specific level of prior knowledge. Germane cognitive load occurs within the learners when they are constructing, processing, and automating mental schemas. Germane cognitive load increases as the learner becomes increasingly aware of how and why to use the newly learned concepts, making the transfer of the new information between short and long-term memory more automatic (Costley & Lange, 2017). Hence, the learner may perceive the activity as enhancing attention, providing more opportunity to perform, and even increasing motivation to perform the academic content of the class (Clark et al., 2006). The amount of germane cognitive load is subject to the degree of element interactivity, that is, the interdependence between the related elements of new information that need to be processed at the same time in working memory.

Germane cognitive load, even though considered to be a good use of one's cognitive resources, can still weigh on the information processing system. When a learner experiences a higher level of germane cognitive load, it is usually caused by learning tasks with high degrees of element interactivity that the learner has not yet established links between. However, as the learner recognizes the interconnectedness between schemas committed to long-term memory, learning becomes more efficient and effective, more automated; as a result, germane cognitive load is substantially decreased during an effective instructional episode (Kalyuga & Liu, 2015). Student motivation and student participation are associated with germane cognitive load, which is crucial to enhance learning automation. The level of allocated resources, in particular germane resources, depends on student motivation and student engagement (opportunity to participate) with the learning tasks (Kalyuga & Liu, 2015). For example, there is a positive correlation between student motivation and germane cognitive load. According to Klepsch and Seufert (2020), higher learning intrinsic motivation resulted in a higher ability for the student to allocate cognitive resources to learning. When students are highly motivated to learn, they have a higher level of germane cognitive load then those students who are less motivated to learn (Costley & Lange, 2018). The good news for the motivated students is their germane cognitive load will begin to decrease as their learning becomes more automated (Costley & Lange, 2018) thus creating a positive (i.e., noneroding) relationship between motivation and germane load.

Intrinsic Cognitive Load

Intrinsic load refers mostly to the complexity of the course structure overall and the academic difficulty of the content being presented (Sweller, 2020). Typically, intrinsic load is acknowledged as course-related issues that a knowledgeable instructor should be able to anticipate and control. A common example of intrinsic cognitive load is when an educator presents too much new material too quickly in one lesson causing students to feel overwhelmed. The student may perceive multiple concepts presented in one class session as detracting from the academic content of the class because too much information at once increases the cognitive load (Clark et al., 2006) on short-term memory. There are element interactivity differences that a learner can experience. In this case, too much required element interactivity at one time can be attributed to intrinsic cognitive load. Intrinsic cognitive load differs from germane cognitive load in the way element interaction occurs. Students try to connect the new information to current knowledge as schema are formed and organized through germane cognitive load. Element interaction related to the effectiveness of how the information is presented occurs in the form of intrinsic cognitive load, which hinders schema development and organization. When the information that is presented in the lesson is too complex or when too much information is presented at once, students will experience cognitive overload with the result that student motivation will decline, student attention will drift, opportunities to participate will decrease, and learning will probably suffer (Klepsch & Seufert, 2020).

Extraneous Cognitive Load

Extraneous load imposes mental work that is not related to the learning goals and, as a result, wastes the limited mental resources of the students attempting to learn new material. According to Kalyuga and Liu (2015), extraneous cognitive load is typically associated with instructional delivery. When students interact with elements that are not relevant to the content presented by the instructor, such as faulty or improperly used technology, extraneous cognitive load will increase. According to Sweller (2020), some instructional practices unnecessarily increase element interactivity, increasing extraneous cognitive load for the learner. For example, when two related information sources are needed to understand the instructional message are presented separately (on a different page or at a different time), working memory resources may be consumed that are needed for meaningful learning (Kalyuga & Liu, 2015). When students experience cognitive overload because of technical difficulties or other distractions during content delivery, they are less likely to be motivated to learn, pay attention to the lesson, or participate in the lesson (Kalyuga & Liu, 2015). In other words, student attention, and opportunity to participate are eroded by extraneous cognitive load.

There are elements in the hybrid class learning environment that can create cognitive overload, including the technology used and course design (Curum & Khedo, 2021; Park et al., 2019). According to Curum and Khedo (2021), if there is not a good design of learning elements and instructional strategies in a hybrid class, the learners are prone to cognitive overload in the working memory. To assist with effective leaning in hybrid classes, the new curriculum material presented by the educator needs to be

readjusted and readapted according to appropriate cognitive theories. Therefore, reducing cognitive load in hybrid classes will create an environment that is effective and conducive to learning.

To make hybrid classes more effective leaning environments because of the technology used to present the new information, knowledge of cognitive overload in the learning process is critical. The way materials are presented by the instructor in the hybrid class with the technology used can create cognitive overload. According to Curum and Khedo (2021), because learning materials presented in hybrid classes are designed to fit mobile screens while allowing good transfer of knowledge on difficult learning topics, the importance of combining instructional design principles with cognitive load theories cannot be dismissed.

Cognitive Load Effects

There are several key effects that are associated with and that describe cognitive load effect on working memory. Split attention effect happens when a learner must divide his or her attention among multiple sources of information that cannot be understood alone (Sweller, 2020). When a learner's attention is split between multiple sources, extraneous cognitive load increases, making it challenging for the learner to cognitively process the new information. When the information is presented from multiple sources, new schema formation or making connections to current knowledge becomes a more difficult process for the learner, aggravating the problem by increasing germane load as the learner attempts to create new schema during an inefficient learning environment. As a result, student motivation, student attention, and opportunities to participate are eroded

by the increased extraneous load placed on the learner's short-term memory (Sweller, 2020).

Another effect, the redundancy effect, occurs when the same information is presented in different forms and this repetition of the same information interferes with the learning process (Sweller, 2020). While redundant information can refer to the presentation of any unnecessary information (extraneous load), such as sounds in the background or background music, redundant information is most often presented as information competing for the same cognitive resources of working memory. Redundant information is when an instructor presents the same information to the learners in a different form, for example introducing information in spoken and written form during a lesson (extraneous load). Processing redundant information using the limited capacity of short-term memory imposes unnecessary cognitive overload on the student (Dousay, 2016). Redundant information increases cognitive load during the learning experience with the result that student motivation, student attention, and opportunities to participate are eroded (Dousay, 2016) and the potential for student learning is decreased.

The expertise reversal effect (Sweller, 2020) almost seems counter intuitive on the surface. Short-term memory load is higher for novice learners than for advanced learners because advanced learners have previous knowledge of the subject matter, which is stored in the long-term memory schema (Sweller, 2020). The expert learner can connect the newly presented information to his or her current knowledge base. As the learner increases expertise related to a topic, element interactivity becomes automated resulting in a decrease in element interactivity. Initially, the decrease in element interactivity has

positive instructional consequences; however, when the student loses interest because he/she is no longer challenged, new learning can suffer (Rey & Fischer, 2013). Thus, the expertise reversal effect is the result of increased learner expertise that is unaccompanied by an appropriate increase in the learner feeling challenged by the courses content, a situation that leads to an increase in intrinsic cognitive load and a potential for less or even no new learning as attention and motivation wane.

The transient information effect (Sweller, 2020) occurs when transient information (for example, spoken information) is learned better by using a more permanent (for example, written information) medium for presenting the information. Lengthy or complex information may require the learner to work through the various aspects of the new information before it can be processed. When information is transient, such as spoken information, returning to it while processing current information may be a difficult or impossible task for the learner because of limited short-term memory capacity. Retaining current information in short-term memory while searching for other new relevant information may be overwhelming for the learner resulting in a reduction in learning. The process of connecting new information to previous knowledge may be less challenging when the new information is presented in a more permanent format that the learner can use to study (Leahy & Sweller, 2016). The transient information effect is relevant in the hybrid class because the majority of the new information presented in the classroom is transient. The transient effect increases cognitive load on the short-term memory. As a result, student motivation, student attention, and opportunities to participate are eroded.

Not all effects decrease learning efficiency thus leading to decreased learning situations. The worked example effect (Sweller, 2020) is generally associated with decreasing cognitive load on the learner. Clarke et al. (2006) stated, "A worked example is a step-by-step demonstration of how to perform a task or how to solve a problem" (p. 190). Cognitive load theory suggests that providing worked examples early in the learning experience followed by the student solving similar problems while successfully taking ownership of more of the steps facilitates student learning (Chen et al., 2020). The assumption is that worked examples provide learners with the necessary preliminary information that needs to be stored in long-term memory for future use. This frees up space in the short-term memory, which reduces cognitive load, and the learner should be able to recall the information in the future to solve problems and make connections (Sweller, 2020). Worked examples reduce intrinsic working memory through the reduction of element interactivity; they reduce germane cognitive load by helping to automate access to long-term memory schemas. As noted above, worked examples do have the potential to evoke the expertise reversal effect when learners are beyond needing the worked examples.

Finally, the modality effect occurs when the use of audio and visual instructions together creates a better learning situation than the use of visual or auditory instructions independently (Sweller, 2020). This effect is a positive effect, as its presence enhances the potential for learning. The learner's cognitive load is decreased when the instructions are presented in two modalities because the instructions are easier to process (Sweller, 2020). The use of visual information for one source (such as a chart) and the use of

auditory information for the other source (such as a video) can increase available short-term memory, thereby increasing the probability for learning. The probability for learning is enhanced when instructions are presented in two modalities because there are individual differences in visuospatial working memory (Greenberg et al., 2021). Mayer and Moreno (2003) completed research that confirms the significance of the modality effect in the hybrid class. They found that because of the technology used in the classroom, the audio may not always be clear or there may be delayed in the audio as instruction is delivered to the remote site. In other words, the modality effect applied properly is helpful for maintaining learner attention, enhancing motivation, and providing more effective learning to enable learner participation during the learning process.

Student attention and opportunities to participate can become eroded by cognitive overload and a variety of cognitive load effects in the hybrid classroom. The learners in a hybrid class generally receive new information in the spoken form (the transient effect), creating a lack of a permanent source of the information (Kalyuga & Liu, 2015; Sweller, 2020). There is empirical evidence demonstrating a positive correlation between student participation and successful course completion (Bekkering & Ward, 2020). For example, participation in class, indicated by attendance and attentiveness, may also be a valid objective way to predict student academic performance. Because student participation can be monitored throughout the semester, it can also be used to identify students who are at risk of failing and students who are underperforming (Bekkering & Ward, 2020). Similarly, Quweider et al. (2019) pointed out that there is a direct correlation between student academic participation and student success. Among the students participating in

the study who failed the course, lack of submitting assignments and lack of exam success were evident. Clark et al. (2006) surmised that successful academic performance cannot occur without academic participation, academic participation cannot occur without motivation, motivation cannot occur without opportunity, and opportunity cannot occur when there is too great a cognitive load being placed upon the student, especially a student who is new to the content.

Previous Uses of Cognitive Load Theory

Cognitive load theory has been used by previous researchers to identify ways to make learning environments more effective and more efficient for learning. The goal of previous research has been to identify ways to decrease all types of cognitive load and to decrease the negative effects of cognitive load (Blayney et al., 2015; Costley & Lange, 2017; Kalyuga & Liu, 2015; Lee et al., 2018; Li, 2016; Mayer & Moreno, 2003). For example, Li (2016) used cognitive load theory to complete a study that proposed an information technology supported pedagogy to teach mobile programming. The goal of the study was to make learning computer programming in an online environment more efficient.

One aspect of cognitive load that Li (2016) used in the study was the modality effect. The modality effect refers to the tendency of new information presented in the same modality to be grouped together (typically by a sense organ) for short-term memory to processing and then again with schema development during recall. As information is received through the senses, it is processed in the short-term memory. When too much information is received by one of the senses (visual, for example), cognitive overload can

occur because the information is processed by the same system (Sweller, 2020). If a student receives information through the different senses, there is a reduction in the number of interactions as the information is split up for processing by different sensory systems (audio, visual, kinesthetic, tactile), thereby reducing the amount of cognitive load the student experiences (Sweller, 2020). For example, when a student studies instructional materials that contains both visual diagrams and spoken information (auditory), more efficient processing of the instructional material may result, and the student may experience a lower cognitive load (Leahy & Sweller, 2016). Li concluded that when a student's attention is split between two or more sensory systems (i.e., looking at a diagram in a textbook and listening to audio describing the diagram), the student experiences a decrease in cognitive load. As opposed to on-screen text and picture representations, there is a decrease in cognitive load and an increase in learning when there is a combination of audio and visual modalities to complement each other (Li, 2016).

Student attention in hybrid classes is negatively affected by high cognitive load (Sweller, 2020). The hybrid class environment and the mode of instructional delivery can also affect student attention. For example, Yang et al. (2020) found that when the speed of the delivery of new information is increased to over 1.5 times the normal speed, student attention decreases and cognitive load increases. Lee et al. (2018) conducted a study that investigated the effects of using a second screen (using two computer screens at the same time to present new material in the learning environment) on student attention, learning performance, and student experience related to content relevance

imposing different amounts of cognitive load: low, medium, and high. During the study, information was presented to the students on both screens. At times, the information on both screens was related and at times the information presented on both screens was not related. The researchers concluded that second screen use reduced learning academic performance and learner satisfaction when the new information presented on the second screen caused high cognitive load. The new information caused high cognitive load when the information presented on both screens was not highly relevant or relatable to the learner. However, the learners experienced increased academic performance, concentration, and satisfaction when the new information presented on the second screen caused a medium level of cognitive load. This occurred when information that was highly relatable to the learners was displayed on both screens simultaneously (Lee et al., 2018).

Blayney et al. (2015) investigated the effects of adaptive instruction that occurs when learners who are initially presented with isolated elements of information in a non-interactive form (followed by a fully interactive form) outperform the learners who are presented with the same information in an interactive form only. Noninteractive information is information that is isolated or presented by itself, such as how to conjugate verbs in a foreign language. Interactive information is information that is used in conjunction with other information, such as how to conjugate verbs in a foreign language, and to be able to use the verbs correctly in a complete sentence related to an everyday activity (Blayney et al., 2015). The researchers concluded that students benefit greatly in terms of reduced cognitive load when educators present information in more than one format, interactive and isolated.

Kalyuga and Liu (2015) focused on using cognitive load theory in learning environments that are technology based. It is crucial to manage cognitive load in learning environments that are technology based because technology can be a distraction and can become a part of the extraneous load on the students. Kalyuga and Liu concluded that it is not which technology is used in the classroom that makes a difference but how that technology is used, whether it would bring out learner activities and cognitive processes that may lead to constructing better and more permanent knowledge. The researchers discovered that cognitive load theory is very useful in determining cognitive load events in classroom environments that are based in technology.

In an older but significant study, Mayer and Moreno (2003) pointed out that in a learning environment that uses multimedia, five cognitive actions are required for active cognitive processing. These cognitive actions include selecting words, selecting images, organizing words, organizing images, and integrating information. The active-processing assumption states that these cognitive actions impose demands on the cognitive capacity of the information-processing system of the learner. Active-processing assumption states that learning does not happen if the learner is passively absorbing information. Instead, learners must engage in active cognitive processes, such as identifying and selecting material that is relevant, organizing the material into visual or verbal models, and attaching those models with previous knowledge (Mayer & Moreno, 2003).

There is a direct correlation between cognitive load and student motivation. Previous researchers have concluded that the higher the level of cognitive load the learner

is experiencing, the less motivated he or she will be. Feldon et al. (2019) completed a review of previous studies that focused on student motivation and cognitive load. They concluded that these numerous studies offered evidence that cognitive load directly effects motivational beliefs independent of the learners' performance following the instruction. The direct effect of cognitive load on student motivation is the higher the cognitive load, the lower the student motivation (Feldon et al., 2019). Cognitive overload on the learner has a negative impact on student participation. The higher the learner's cognitive load, the lower the rate of participation (Sweller, 2020). Chen et al. (2012) found that the students' perceived information overload (too much new information at once) negatively influenced their participation and levels of cognitive processing in discussions.

My study benefits from the previous studies that used cognitive load theory because these studies were all conducted in a learning environment and the main goal of the studies was to make learning more effective and efficient. The findings of the studies provided more information about the learning environment, especially about the way instruction was delivered. For example, it is crucial that the instructor in the hybrid class reduces unnecessary cognitive load to create a more efficient learning environment. When cognitive load is reduced in the learning environment, student attention to the new learning material and student motivation to learn increase (Blayney et al., 2015; Feldon et al., 2019; Mayer & Moreno, 2003). The instructor should also present complimentary information using different modalities (e.g., audio, visual) to make the new information easier for the students to process. In classroom that use technology, it is essential that the

technology used does not become a distraction for the students in the learning environment. When the instructor uses different modalities in the classroom to present new information and when the instructor ensures that the technology used in the classroom does not create a distraction, student attention to the new material and student motivation increase (Blayney et al., 2015; Feldon et al., 2019; Mayer & Moreno, 2003). To make the learning environment more efficient, educators also need to give students the opportunity to participate in the lessons. Students who are motivated, pay attention, and who are given the opportunity to participate experience decreased cognitive load and are more successful in their courses (Blayney et al., 2015; Chen et al., 2012; Feldon et al., 2019; Mayer & Moreno, 2003). My study adds to previous research that uses cognitive load theory by looking specifically at the hybrid learning environment from the student's point of view and how the hybrid environment affects student attention and opportunity to participate.

Improved Learning From a CLT Perspective

Cognitive load is a natural constraint of the human information processing system (Sweller, 2020) that accompanies learning. Learning occurs if cognitive overload in the short-term memory can be minimized by the transfer of the new information into short-term memory and then encoded as schema to long-term memory. The information is then stored in long-term memory where the learner can recall it when needed. Strategies for educators to use for enhancing the processing of new information into short-term memory include presenting new material in manageable segments for the students, helping students connect the new material to current knowledge, decrease distractions in the

classroom, and implementing interactive activities into the lessons (Klepsch & Seufert, 2020). Strategies for learners to devote more into building mental schema in the long-term memory include rehearsal, organizing the new material, and strategies to elaborate, which can help the learner gain a deeper understanding of the information (Klepsch & Seufert, 2020).

Summary

Chapter 2 provided a background, explanation, and rational for using cognitive load theory to complete my study. There is also a discussion of previously completed research using the theory as the foundation for the conceptual framework. In this review, four major themes surfaced: (a) the lack of student engagement is a persistent issue in hybrid courses; (b) the lack of student engagement is a major cause of the high student drop-out rate in hybrid courses; (c) student enrollment in distance learning courses has increased while the student success rate in distance learning courses has decreased; and (d) the continuing evolution of technology will provide both new opportunities as well as new barriers for teachers and students in a virtual learning environment.

The literature demonstrated a lack of student academic performance in hybrid courses (Gagnon et al., 2020; Park et al., 2019) but at the same time specifically lacked robust research on student academic performance in the hybrid classroom. McCall et al. (2013) and Schaddelee and McConnell (2018) looked at student dissatisfaction with the hybrid classroom, although they focused on why students were dissatisfied with the course, not on their attention or opportunities to participate in the hybrid classroom. The

lack of student academic achievement is a continuing problem in the hybrid classroom, but scholars have yet to research how the lack of student academic achievement is perceived by students based on their experiences related to how they personally understand the hybrid classroom. With new information based on research, the impact of the lack of student academic performance on the future of hybrid classroom can be addressed.

Chapter 3 details the methodology I used in this study to explore student experiences in the hybrid classroom and what the students perceive as the engaging aspects of the hybrid classroom. In the Research Design and Rational section of Chapter 3, I discuss why I used a basic qualitative design to complete my study and why it was the best design to answer my research question. In the Role of the Researcher section, I discuss the dual roles that I had as I conducted my research. In the Methodology section, I discuss how the participants of my study were selected, how the interviews for my study were conducted, and how the data were analyzed when the interviews were completed. I also discuss the instrumentation aspects of my study, what questions I asked my study participants and how the questions helped me answer my research question. I also discuss issues of trustworthiness and ethical procedures. In these sections, I discuss threats to validity to my study, such as researcher bias, and procedures I need to keep in mind when interacting with my participants or the data I collected.

Chapter 3: Research Method

The purpose of this basic qualitative study was to determine community college students' perceptions of hybrid class elements that affect their academic achievement. The setting for the study was a southeastern U.S. community college in North Carolina. The focus of the study was on student perceptions acquired from taking hybrid classes. The major sections of this chapter include the rationale for the research design, role of the researcher, methodology, and threats to validity.

Research Design and Rationale

The following research question guided this study: What are community college students' perceptions of hybrid class elements that affect their academic achievement? The phenomenon of this study was the lack of knowledge of community college students' perceptions of hybrid class elements that affect their academic achievement. This phenomenon is important to the field of college education because hybrid courses are currently a significant part of distance learning at the college level and hybrid learning will continue to have a crucial role in the field of education well into the future (Chisum, 2020). Hence, these hybrid courses will need to become more effective and more efficient for current and future learners. The lack of student academic performance and the high dropout rate are indicators that hybrid classes are not currently as effective and efficient as educators would desire.

I conducted my study within the qualitative tradition. The qualitative tradition best fit the purpose of this study and helped answer the research question because the data came directly from the individuals who were currently or previously enrolled in a

hybrid course. The experiences were fresh in the participants' minds, which was helpful when participants shared information about the quality of their experiences in the hybrid class. The quality of the participant's experience is a key characteristic of qualitative research that made the approach appropriate for my study. According to Kahlke (2014), the variables that act upon people in a qualitative situation are not easily measurable and can only be described and interpreted from the given context. Only qualitative research provides the researcher with an in-depth view of the ways people come to understand, act, and manage their everyday situations within given venues.

I used the basic qualitative approach, which is a flexible methodological design within the qualitative tradition. The basic qualitative approach is a design that offered me flexibility to manipulate the established set of philosophic assumptions and techniques associated with the known qualitative methodology of phenomenology. What that means for this study is, although my research question did not fit neatly within the confines of the traditional phenomenological methodology, I blended compatible elements of the phenomenological approach to explore the lived experiences of my participants as they experienced learning in the hybrid course.

In exploring the lived experiences of my participants as they relate to student attention and opportunities to participate in the hybrid class at a remote site, a traditional phenomenological approach might appear to be the most appropriate methodological design for the study. Phenomenological research is a proper fit for studying affective, emotional, and intense experiences to get below the surface of perceptions to discover the shared nature of the experience. Hence, the result of a phenomenological study is a

description that presents the heart of the phenomenon (Worthington, 2013). I did not attempt to define the essence of the phenomenon (the lack of knowledge of students' perceptions of the lack of student academic performance in hybrid classes) but rather determine an understanding of the phenomenon that can ultimately be used to lead educators towards pragmatic solutions that address the lack of student success associated with the phenomenon.

I also adapted a few additional characteristics of a basic qualitative approach to fit the needs of my study. By epitomizing the characteristics of qualitative research (Caelli et al., 2003), I was obligated to choose the best techniques that qualitative methodology has to offer. The characteristic of qualitative methodology that was the cornerstone of my study is focusing on gaining an understanding of the research phenomenon (the lack of knowledge of students' perceptions of the lack of student academic performance in hybrid classes). Focusing on gaining an understanding of the research phenomenon was important to my study because how the variables in the hybrid classroom environment affect student attention and opportunities to participate (which ultimately effect student academic performance) cannot be easily measured. In other words, while attempting to measure each participant's personal experience with the phenomenon is difficult at best, gaining an understanding of their experience with the phenomenon was obtainable by speaking directly to the students to gain their insights.

Role of the Researcher

As the researcher, I had three roles to complete as I conducted this basic qualitative study: organizer, interviewer, and analyzer. My worldview underpinned all

decisions I made regarding the conduct of the study. The worldview I subscribe to is constructivism. As an educator of 26 years, the constructivist idea of knowledge development best aligns with my thoughts, beliefs, and experiences as to how people learn and process new information. Constructivists, such as me, believe that people learn best when the actively construct their own meaning of the new information presented to them (Clark et al., 2006). As a learner, I believe I process, or construct, new information by relating it to my experiences, beliefs, and attitudes, which I believe all learners do. My constructivist worldview aligns with the basic qualitative approach, grounded in phenomenology, that I used for this study (Merriam, 2015). However, my selection of a basic qualitative approach to organize this study demonstrates that my constructivist learning is tempered with a dose of pragmatism. From a pragmatic point of view, I used words and thoughts of the participants of my study to interpret issues in a manner that ultimately might allow educators to take action to make future hybrid classes more efficient and effective.

As a subscriber to a constructivist worldview tempered by pragmatism, I believe that it is the role of educators and educational institutions to serve the students, help all students reach their academic goals, and to facilitate learning. Hence, when there is a lack of student academic performance in the classroom, educators and educational institutions need to take necessary steps to make the learning environment more efficient and effective to increase student academic performance. My worldview as a constructivist affects what I do, think, and believe in many ways. I always do my best to increase student motivation, attention, and opportunities to participate. I am aware also of the lack

of student academic performance in my hybrid classes and I believe it is my job to reach these students. I believe that student input as to what specifically in the hybrid classroom increases or decreases student attention, and opportunity to participate is key to making these classrooms more efficient and effective to meet the needs of the students.

I am an instructor of hybrid classes at the community college level. As such, I may have some biases that I need to be aware of as the researcher. First, I needed to make sure that I looked at the data I collected from the participant's point of view (who were students) as opposed to an instructor's point of view. I had to make sure that I contained my own world views and focus on what the participants shared with me. I contained my own world views by surfacing and acknowledging them in a reflective journal. Focusing on what the participants had to say allowed me to answer my research question with rich data coming directly from the participants.

As an instructor of hybrid classes, the participants may have wanted to tell me what I wanted to hear as opposed to what they were thinking. I addressed this participant bias by using a well-designed and well-rehearsed interview protocol that is built upon the needs of my study for understanding the unit of analysis (the students interviewed). I tested my interview protocol on community college students (in a pilot study) to see if I get the type of responses needed to answer my interview questions. I did not interview students at my place of employment to avoid any biases potentially induced by the setting. I arranged to interview students at a community college that is approximately an hour from my place of employment. The students were individuals I had never met or worked with previously. It was necessary to the validity of my study that the participants

answered my questions openly and that they responded to me as a researcher and not as an educator. To manage this participant bias, I let the participants know that honest answers to the interview questions were critical to the purpose of the study and to improve future hybrid classes. Another participant bias that may have arisen as I conducted my study is the participants may have been concerned that I will share their answers with their instructor. To address this potential bias, I assured the participants that their answers were confidential and that I will not share their answers with anyone.

After the student participants for the study were chosen, I interviewed the participants. After interviews were complete and data was collected, I analyzed the data by using the cluster method where similar answers were grouped together to look for patterns as they developed. As I interviewed my participants to collect data for my study and as I analyzed the data once I completed my interviews, I kept in mind the aspects of my role as the researcher that have possibly affected the type of data I collected or how I will interpreted the data.

Methodology

The purpose of this basic qualitative study was to determine community college students' perceptions of hybrid class elements that affect their academic achievement. Through the interview process, I identified the experiences that the community college student participants have in the hybrid classroom that enhance/detract from student academic achievement. Eight participants shared their experiences of the hybrid class through individual participant interviews. The use of eight purposefully determined participants interviewed according to a rigorous interview protocol provided appropriate

data saturation. Once the data were collected from the interviewees, they were analyzed by using the cluster method (Elliott, 2018). Responses that were related to one another were clustered together so that conclusions could be drawn from the patterns that I saw and interpreted.

Participant Selection Logic

The target population I used to draw participants for my study was community college students who were currently or previously enrolled in a hybrid class. I took advantage of the subjective nature of the purposeful sampling strategy to help ensure that I acquired in-depth and detailed information about the phenomenon under investigation (Shaheen & Pradhan, 2019). Purposeful sampling is a strategy that researchers use to recruit study participants who can provide rich data about the phenomenon under investigation. To mitigate the potential for researcher bias applying purposeful sampling, the scope of the potential participant population is narrowed through the application of specific criteria each participant must meet to be considered for the research study (Shaheen & Pradhan, 2019). As a result, I used criterion-based purposeful sampling to ensure the participants of my study met a specific set of participation criteria. The three qualifying criteria each participant must have met to be considered for my research study included (a) currently enrolled as a student at the community college where I conducted my study, (b) currently or previously enrolled as a student in a hybrid class, and (c) at least 18 years of age. The director of the distance learning department at the college where I conducted my study was supportive of my research, and he assisted me with discerning that the potential study participants meet the qualifying criteria.

After applying the qualifying criteria to the population of all currently or previously enrolled students in a hybrid class at the college, a working sample of eight to 12 study participants were selected. I used the purposive sampling strategy to select the participants for my study because this strategy allowed me to use my judgement and knowledge of the context of the study to select my participants. I selected participants for my study out of the participant pool who were currently taking hybrid classes or who have recently completed a hybrid course. For example, if an individual in the participant pool completed a hybrid class a year ago, I would choose them over an individual in the participant pool who completed a hybrid class 3 years ago. The individual who completed the hybrid class a year ago may be better able to recall details about the class compared to the individual who completed the class 3 years ago.

To avoid a conflict of interest or power differentials, the participants of my study were not students from my workplace. The participants were from a remote site campus, approximately 80 miles travel distance from my place of employment. The participants of my study were 18 years of age or older; therefore, as adults, no parental permission was needed for them to participate. I sent each potential participant an invitation to participate in my study via email. The invitation letter included an explanation of what the participants would be required to do as participants in the study, as well as possible consequences and potential risks they would be taking, and the benefits of participating in the study. The participants were informed that the interviews were recorded and videotaped. They were also informed as to how the data that they provided were used to draw conclusions once the study was completed. The data collected in the interview

process were kept confidential. The identity of the students who participated in the study is also kept confidential and secure. To protect the participants' identity and confidentiality, I used encrypted computer-based files and removed personal identifiers from any study documents used. I let my participants know that the answers they give to my interview questions would be used to help make future hybrid classes more engaging and more conducive to learning to put them at ease. I wanted my participants to realize how important it is for them to answer honestly as opposed to telling me what I want to hear because I am an educator.

After the potential participants received my invitation, read it, met my criteria for participation, and agreed to participate, they acknowledged informed consent and were considered members of the potential participant pool from which I determined the working sample. Follow-up contact was made with each potential participant via email. I let them know that they became a participant in the study or that I appreciated their interest and thanked them for their time.

Instrumentation

I selected the semistructured interview as my data collection instrument because such interviews, being well organizationally structured, make it easier to (a) compare respondent data, (b) obtain detailed information that adheres to a well-prepared interview protocol, and (c) give greater attention to the individual's point of view (Queirós et al., 2017). Combining a basic qualitative design and conducting interviews allowed me to speak directly to my participants to gain an understanding of the phenomenon studied. The questions that were used during each interview were researcher created using a

rigorous interview protocol supported by the literature and focused by my specific understanding of the data needs of the study (see Appendix). The research question was addressed within the protocol by interview questions specifically developed from acknowledged literature sources. Content validity was addressed through the determination of specific data characteristics that were associated in the literature and in practice with what was sought from each interview question, which was enhanced by specific probes, if necessary. The steps I have taken to create the interview protocol establish that conducting interviews as my data collection instrument was sufficient to address my research question.

The specific interview questions, along with a few example probes, and space for written notes have been distilled from the interview protocol as an Interview Guide (see Appendix). The interview questions in the guide were used with each participant in the same order, delivered in the same manner. I interviewed each participant one time, and each interview was about 25 minutes in duration.

Understanding that the relationship between sample size and data saturation has less to do with the number of participants and more to do with how the data from those participants were monitored and managed (see Fusch & Ness, 2015), I made sure that I collected the data I needed during the interviews. I achieved this goal by asking each participant the same interview questions and I was prepared to recognize and record applicable data as I conducted the interviews. Using a robust interview protocol (see Appendix), I remained focused on collecting only data that were applicable to my research question, relying upon carefully crafted interview questions that were

specifically supported by the extant literature that are specific to the understood characteristics of the data I needed for the study, and I used probing questions to assist when a participant response began to drift away from the data I was seeking. The quality of this plan for collecting the data greatly enhanced the probability of achieving data saturation with the sample I used.

Procedures for Recruitment, Participation, and Data Collection

Procedures for Recruitment

I was granted written permission to conduct my study at a local community college by the director of the distance learning department and the president of the college. There is not an institutional review board (IRB) process at the college where my study was conducted. The community college is located in southeastern North Carolina.

To recruit participants for my study, I, with permission, visited four hybrid classes to present my proposed study to the students. I shared with the students the purpose of my study and what was expected of the participants. I shared my contact information for those students to use who were interested in participating in my study. I also asked the instructor of hybrid classes to post a flyer advertising my study that was submitted for review and acceptance by the Walden IRB, in the classroom to recruit participants.

The students interested in participating in my study contacted me by email. I determined if the student fit the criteria to participate in my study. If the student fit the criteria to participate in my study, I sent the student a participation invitation letter and a Letter to Selected Study Participants. The selected participants then responded to my email informing me that they consent to participate in my study and when they were

available to participate. If the interested student did not meet the criteria for participation in my study, I sent them a Letter to Potential Participants Not Selected for the Study.

Participation

Each participant in my study completed an interview that was about 25 minutes in duration. I offered the student the opportunity to complete the interview in a face-to-face format or via a ZOOM meeting. Every participant chose to participate in a Zoom meeting. Once the interview was complete, I presented the participant with a $10.00 Starbucks gift card as a token of my appreciation.

Data Collection

The importance of each semistructured interview question and its relationship to acquiring sufficient good quality data cannot be overstated. As a result, driving the data collection process, including interview question development, was the carefully crafted interview protocol. The underlying purpose of the interview protocol was to ensure that I maximized the potential for each interview question to generate the maximum amount of rich descriptive information possible for addressing the research question of the study. To that end, the interview questions were developed directly from the interview protocol.

Based upon the literature-supported foundation for acquiring the type and quality of data I believed I needed for meaningfully addressing my research question, I used my interview protocol to organize a personal interview with each participant using Zoom meeting technology. To conduct the interviews, I used an Interview Guide (see Appendix), comprised of each interview question supported by the interview protocol

arranged in a specific order for delivery and accompanied by space for adding an occasional important note.

To record the data, I recorded each Zoom meeting using the Zoom recording technology. My exit strategy for each interview was to ask each participant if they have any concerns and I reminded them of the security procedures for their interview data: the data were not shared, and their names were not associated with the data. I then let each participant know that, within a week, I would supply them with a transcript of the interview for member checking purposes. I asked the participants to review the transcript and to contact me by email or phone if they find any errors. I then thanked each participant, and I turned off all recording devices.

Data Analysis Plan

According to Maxwell (2008), a basic concept of qualitative research is that data analysis should be conducted during the data collection process. Analyzing the data while collecting it allowed me to progressively focus on the characteristics of the interview data and to make observations to decide how to test relationships, frequencies, commonalities, and potential ideas or hunches that I surfaced. Therefore, data analysis began with the interview process as I looked for key characteristics within the data, as planned in my interview protocol. The data I collected focused on what the participants perceived, based on their experiences, as enhancing or detracting from their attention and opportunities to participate in the hybrid class. For example, if a participant described a particular aspect of the technology used in the hybrid classroom as detracting their attention, this

information was considered useful data relevant to addressing a specific research question of the study.

The next step in transitioning to the data analysis process was transcribing the interviews. The exact words the participants used to share their experiences were transcribed by me, by hand, into a digital Word document along with notations of any observed body language or voice intonations that were observed. Personally, transcribing the interviews gave me more time to be engaged with the data. I also included in my transcription any notes that I took during the interview process.

After the interviews were transcribed, I read and reread each transcribed interview looking for specific words or phrases characterizing their learning experiences, areas of participant emphasis, relevant repetitions, and other early patterns that arose from an initial encounter with each of the transcripts. In this manner, I used initial recognition to detect similarities within and regularities among the data collected (see Saldaña & Leavy, 2014). This step of early patterning of the data helped me with the organization of the data before the data were coded.

I used two coding methods to analyze my data: descriptive coding and values coding. I used the descriptive coding method as a first cycle coding process to look for unique, informative, surprising, or common descriptions related to their hybrid class learning experiences within the words of the participants (see Saldaña & Leavy, 2014). As a result, the use of descriptive coding gave me an idea of what each participant experienced, a description of what they understood to be taking place in the hybrid classroom as it relates to enhancing or detracting from their learning experiences.

I then used values coding as a second cycle coding process to look for the presence of participant value statements. Values coding helped me to understand why the participants felt the way they felt about their experiences in the hybrid classroom as those experiences related to enhancing or detracting from their capacity to learn the course material. I then compared the codes from descriptive and values coding methodologies to find potential relationships that were uncovered between the two coding methods. Finally, I used any new codes that come from the relationships that I find between the two coding methods to reprise both coding methods again with a more specific focus. This specific focus allowed me to find additional new codes, refine the wording of previous codes, and even begin to collect codes into categories.

Having inductively analyzed the data as objectively as possible, I then deductively analyzed the same codes, categories, and patterns to see if and how they might fit into key predetermined themes residing in the literature and my research question. There were themes that I used to initially help me organize the development of categories and potential patterns from the data, such as attention, motivation, and opportunities to participate. With themes, initial codes, categories, and patterns in mind, there were additional literature-related and theory-related ideas (ex: intrinsic cognitive load, extrinsic cognitive load, germane cognitive load, collaboration, technology, instructional design, classroom community, interactive, and cognitive overload) that I used to reexamine my original analysis. For those categories and patterns that did not appear to fit one or more of the themes, I returned to the codes, categories, and patterns to see if I could inductively find additional themes to supplement the original three. The software I used to assist me

with data analysis was Excel. When I encountered codes, categories, or patterns during data analysis that seemed important but did not fit into any of the themes, I entered them into a codebook, in the form of an Excel spreadsheet, for future access as needed.

Issues of Trustworthiness

Credibility

There are four strategies that I employed to ensure the credibility of my study: methodological triangulation, member checks, data saturation, and reflexivity. To establish internal validity within my study, I employed methodological triangulation. I will use two coding processes (descriptive and values) to analyze the data that were compared and combined. Although there was no prolonged contact with the participants of the study, I employed member checks as a strategy to establish credibility for the data collection of my study. I gave each participant a copy of the interview transcript, and I asked them to review it and inform me if there are any errors in the transcription. Saturation was enhanced through my rigorous interview protocol upon literature supported interview questions that are data characteristic specific. I used the strategy of reflexivity to ensure credibility of my study by maintaining a journal in which I listed and question my major decisions about my study, maintained a record of my inner thoughts and self-assessments as I interacted with situations based upon my feelings, biases, reactions, and motives and how they influenced me. I also maintained a more traditional reflective journal, where I recorded and reflected upon the observed actions of others and the outcomes of the strategies and processes I employed.

Transferability

The main strategy I employed to establish transferability is application of the criterion-based purposeful sampling strategy to enhance functional variation in participant selection. After potential participants were determined, I used my personal knowledge to and understanding of the data needs of my study to select male and female participants, participants from a variety of hybrid classes with different instructors, students who were currently enrolled in hybrid classes, and students who have taken hybrid classes in the past. This enhanced the possibility that the results of my study applied to a variety of individuals who are hybrid learners.

Dependability

The audit trails that I used to establish dependability were my journals. The two journals I kept not only included key decisions and records of important processes, but they also allowed me to have self-awareness through the entire process of the study. As previously described, the dependability of my study was also established through the use of precise and robust interview protocol and methodological triangulation. I have taken great care to align the key components of the study: problem statement, purpose statement, and research question lexically and dialectically leading to a well-aligned conceptual framework that was used to determine the methods for the study.

Confirmability

To establish confirmability, I recorded my thoughts during the process of data collection and analysis. I recorded what topics were unique and interesting during the data collection process (the interviews), wrote down my thoughts about coding, provided

a rationale for why I merged codes together, and explained what the themes mean. This process of recording my thoughts during data collection and data analysis established confirmability because the results and conclusions of my study can be easily followed and confirmed by following my thought processes. A sampling of my notes during the data collection and data analysis process is attached to my dissertation.

Ethical Procedures

I was granted IRB approval to conduct my study by the Walden University IRB. The Walden University IRB approval number for this study is 03-05-24-0494544. I was also granted permission via email and phone conversations to conduct my study at a local community college by the director of the distance learning department and the president of the college. I worked with the director of the distance learning program to reach out to the instructors of hybrid classes to arrange classroom visits to present my proposed study to the students. There is no IRB at the community college where I conducted the study.

The participants were treated with respect. They consented to participation and the participants were voluntarily a part of my study. The participants knew what to expect during the interview process, particularly how long the interview is expected to last.

The participants had privacy when completing the interviews. We conducted the interview in a ZOOM meeting, which was conducive to privacy. The participants had the option to complete a face-to-face interview.

To avoid the ethical concern of a power relationship, I assured the participants that participation in my study will not affect their grade in the course. I also assured them that being a participant in my study did not affect their standing at the college in any way.

I asked the participants to answer the interview questions with their perceptions of the hybrid class, not with the answers that they think I want to hear.

The data collected in the interview process were kept confidential. The identity of the students who participated in the study was also kept confidential and secure. To protect the participants' identity and confidentiality, I encrypted computer-based files and removed personal identifiers from any study documents used.

Summary

In this chapter, I identified the qualitative research tradition as the most appropriate approach for this study. The qualitative tradition best fits the purpose of the current study and helped answer the research question because the data came directly from the individuals who were currently enrolled in a hybrid course. I provided a rationale for the selection of a basic qualitative study design (offered me flexibility to manipulate the established set of philosophic assumptions), explained my role as the researcher, and described data collection instrument (interviews to understand the student's perspective of the hybrid classroom). I also identified protocols, and analysis procedures that I used (descriptive coding to give me an idea what each participant is experiencing and values coding to gain and understanding as to why the participants feel the way they feel). I outlined the criteria for study site selection and how participants would be chosen. The chapter concluded with a discussion of the processes and procedures that I used to increase the trustworthiness of my study (methodological triangulation, member checks, data saturation, reflexivity, criterion-based purposeful sampling strategy, journaling, and recording my thoughts during data collection and

analysis). Further, I addressed ethical procedures including maintaining anonymity of the participants and ethical considerations associated with data collection.

Chapter 4 will include descriptions of the setting, with care to protect the anonymity of the academic institution and the participants. Additionally, demographics, data collection and analyses practices, and evidence of trustworthiness will be presented. Steps taken during data analysis, as well as details of the interview process will be described. The results of the data analyses will be described according to themes that will reflect the conceptual framework of the study and underpin the research question.

Chapter 4: Results

The purpose of this basic qualitative study was to determine community college students' perceptions of hybrid class elements that affect their academic achievement. The conceptual framework for this study design and the research question were based on cognitive load theory. The study was centered on the following research question: What are community college students' perceptions of hybrid class elements that affect their academic achievement?

This chapter presents the results of this study on community college students' perceptions of hybrid class elements that affect their academic achievement. The chapter includes a description of the setting, demographics information from all participants, and the data collection process. This chapter also includes relevant information about the data analysis conducted, the evidence of trustworthiness, and the study results. A summary of the results is noted at the end of this chapter.

Setting

For this study, I reached out to instructors at a community college in southeastern North Carolina to inquire about visiting their hybrid classes to recruit participants. Three instructors responded granting me permission to visit their classes. I visited a total of seven classes, where I introduced myself and I invited the students to participate in my study. I left copies of my Walden University IRB-approved flyer with information about my study in each classroom at the end of my presentation so that potential participants would be able to contact me. I received emails from eight interested individuals. The

interested individuals fit the criteria for my study; hence, they became the participants for my study.

The first interview took place on April 29, 2024, in a Zoom meeting. The meeting was audio recorded using the recording feature in Zoom, and the interview time was 18 minutes and 47 seconds. As per Walden Policy, the committee chair member, Dr. Koss, listened to the interview recording and read the interview transcript to confirm that the interview was conducted as described in the study. All interviews were conducted via a Zoom meeting. One participant had to reschedule our interview due to an unexpected family obligation. All interviews started on time and all participants completed their interview. The average interview time was 14 minutes. Table 1 shows participant interview duration.

My study participants included seven female participants and one male participant. Seven of my study participants were White and one participant was Asian. All participants were 18 years of age or older. The curriculum that the students were studying in their hybrid classes included history, science, and math.

Table 1

Participant Interview Duration

Participant	Interview duration (min)
1	18.47
2	20.15
3	10:25
4	18:46
5	8:47
6	13:20
7	13:33
8	15:15

Data Collection

The data collection process began once I received approval from the IRB at Walden University. I received written permission from the president of the community college in southeastern North Carolina to recruit student participants, and I received written permission from the instructors of the hybrid classes to visit their classes to recruit participants. All of the students in each of the classes I visited were potential participants because they met the inclusion criteria. Once I received an email from each participant and they consented to participate, a time and date for each interview was set.

Each interview took place in a Zoom meeting over the next two weeks. The interviews were conducted at the convenience of the participants, outside of their work and class schedules. The data were collected between April 29, 2024, and June 2, 2024. The Zoom audio recordings, along with the transcripts, of each of the interviews were stored in my password protected personal laptop computer, as approved by the IRB. Once each interview was complete, each participant received a copy of the interview transcript via email for their review to validate the data. One participant corrected a punctuation error in the transcript. I corrected the error and sent the transcript to the participant again for validation.

Data Analysis

I began the data analysis process while conducting each interview. I looked at each interview carefully to develop a list of key characteristics within the data, as planned in my interview protocol. The data I collected focused on the elements in their hybrid classes the participants perceived, based on their experiences, as enhancing or detracting

from their attention and opportunities to participate in the hybrid class. Table 2 lists the elements that the participants perceived, based on their experiences, that enhanced or detracted from their attention and opportunities to participate in their hybrid classes that I noted during the interview process.

Table 2

Enhanced: Attention and Opportunities in Hybrid Classroom

Elements that enhanced student attention and opportunities to participate in the hybrid classroom	Elements that detracted from student attention and opportunities to participate in the hybrid classroom
Clear instructions for assigned work.	Having to wait for the instructor to respond to an email when the student has a question.
The use of instructor made videos.	Not having clear instructions to complete assignments.
The ability to ask questions in real time during the face-to-face session of the hybrid class.	Completing group assignments when there is no time given to work on the assignments during the face-to-face class sessions.
Receiving timely feedback from the instructor on completed work.	The feeling of isolation.
The ability to attend on campus instructor office hours, along with online instructor office hours.	Confusion when it is not clear where to submit completed work.
The ability to complete assignments independently before the due date as time permits prior to the due date.	Issues completing and submitting assignments when there are issues with the technology used in the hybrid class.
	Not able to attend the in-person session of the hybrid class if there are issues with the technology.

The next step I completed in the data analysis process was transcribing each interview to capture the data in written form and to give each participant the opportunity to look at the data for accuracy. While transcribing the interviews, I was able to notate any body language cues or voice changes that I observed. The most noteworthy body

language cues and voice changes with the participants occurred when the participants were asked to discuss how well they did in their hybrid classes. The participants were happy to say that they did well in their hybrid classes even though the course was difficult.

During the next step in the data analysis process, I used initial recognition to detect similarities within and regularities among the data I collected (Saldaña & Leavy, 2014). Initial recognition assisted me with data organization. Figure 2 lists the similarities within and regularities, or initial recognition, among the data I collected.

Figure 2

Similarities and Regularities Among Data Collected (Initial Recognition)

Similarities and regularities among the data
Discussion board assignments assigned in hybrid classes as a forum of communication.
Delay in getting feedback from professor. Professors are learning about hybrid teaching.
Less motivation in hybrid classes. Less accountable because there is a detached feeling.
Technological difficulties in connecting to the class or staying connected.
Higher comfort level asking questions in a face-to-face classroom environment or in-person office hours with the professor. Participation occurred only when required.
Higher motivation in an in-person classroom environment because of comfort level and working directly with peers.
Higher accountability level in a face-to-face classroom. Instructor created videos are helpful in a hybrid class.
Software used in the hybrid class was not compatible with the student's current computer.
Having unlimited access to videos or PowerPoint presentations posted to the hybrid classroom was helpful.
Zoom meetings and Microsoft Teams meetings were helpful. Helpful to have multiple ways to communicate.
Set or staggered due dates for assignments.
Flexibility to complete assignments during free time, as long as the work is submitted by the due date.
The ability to work independently.
Helpful that the professor is available to meet outside of class time.
Repetitive or monotonous assignments were not helpful to learning the content and lowered motivation. For example, weekly discussion board assignments.
It was helpful, in terms of organization, to have all the course content in one place. The technology allowed students to download the lectures for the course and to keep class notes all in one place.
Technological issues occurred when submitting assignments, especially when submitting work at the last minute.
Professor not using in- person or online office hours hurts participation.
More difficult to build a relationship with the professor and classmates in a hybrid class. More likely to ask questions in an in-person classroom.

Similarities and regularities among the data
Lack of experience taking hybrid classes. There is a need for training.
The technology used in the hybrid class, such as the online textbook and the platform, can be stressful if you do not know how to use it.
The technology used in the hybrid classroom is helpful when communicating with the professor and classmates. However, training is needed.
It is helpful when the professor does not pressure students to participate.
Participation is difficult when there is not a variety of options to participate.
Technology offers a variety of ways to learn.
The professor presenting material in an understandable way during the in-person session was helpful in learning the content and with participation.
The professor answering questions in the chat room during the live session was helpful.
Material is self-taught in a hybrid class, so you must be a motivated student.
It is easy to procrastinate in a hybrid class.
Participation included attending an in-person session of the class each week. Functioning cameras and microphones during the in-person sessions were a requirement.
The technology used in the hybrid class can hinder participation and learning if there is a distraction (something pops up or technology fails) during the in-person class session.
The use of breakout rooms during the in-person class session was helpful to the learning process and to participation.
The use of polling (the professor posts a question, and the students have to answer) during the in-person class sessions was helpful to learning and to participation.

The next step that I used in the data analysis process was to use two coding methods to analyze the data, descriptive coding and values coding. The use of descriptive coding gave me an idea of what each participant experienced, a description of what they understood to be taking place in the hybrid classroom as it relates to enhancing or detracting from their learning experiences. Values coding helped me to understand why the participants felt the way they felt about their experiences in the hybrid classroom as those experiences relate to enhancing or detracting from their capacity to learn the course material. Tables 3 and 4 include the codes found from each coding method.

Table 3

Codes from Descriptive Coding Method

Elements that enhance learning and participation in the hybrid classroom.	Elements that detract from learning and participation in the hybrid classroom.
Instructor made videos	Lack of technology training
Instructor availability	Technological issues
Breakout rooms	Textbook training needed
Chat rooms	Platform training needed
Polling	Technological issues when submitting work
Discussion boards	
Understandable course content	Software not compatible with computer
Various ways to learn through technology	Lack of professor feedback
Easy to communicate through technology	

Table 4

Codes from Value Coding

Elements that enhance learning and participation in the hybrid classroom.	Elements that detract from learning and participation in the hybrid classroom.
Easy to participate without pressure	Procrastination
Technology helped with organization	Material is self-taught
Work independently	Self-motivation
Flexibility	Difficult to participate if without variety
Staggered due date for assignments	Lack of hybrid class experience
Unlimited access to videos and PowerPoints	Difficult to build a relationship with professor
	Difficult to build relationship with classmates
	Difficult platform to ask questions
	Lack of in-person office hours
	Repetitive or monotonous assignments
	Lower comfort level in hybrid class
	Feeling detached from professor / classmates
	Feeling isolated

The next step to my data analysis plan was to find codes in common form the descriptive code and values code analysis. This step allowed me to synchronize the codes from my descriptive code and values code analysis. Table 5 contains the codes that the descriptive code analysis and values code analysis have in common.

Table 5

Codes Combining Values Coding and Descriptive Coding

Elements that enhance achievement and participation in the hybrid classroom.	Elements that detract from achievement and participation in the hybrid classroom.
Helpful elements of technology	Isolation
Flexibility	Lack of involvement from the professor
Unlimited access to course materials	Lack of training
Variety of ways to learn course content	Difficult to connect to professor / classmates
Independent work	

The next step I used in analyzing the data from the participant interviews was to deductively analyze the same codes, categories, and patterns to see if and how they might fit into key predetermined themes residing in the literature and my research question. There were themes that were used to initially help me organize the development of categories and potential patterns from the data, such as attention, motivation, and opportunities to participate. With themes, initial codes, categories, and patterns in mind, there were additional literature-related and theory-related ideas (ex: intrinsic cognitive load, extrinsic cognitive load, germane cognitive load, collaboration, technology, instructional design, classroom community, interactive, and cognitive overload) that were used to reexamine my original analysis. Table 6 includes literature-related and theory-related analysis of the data.

Figure 3

Literature Related and Theory Related Analysis of the Data

Literature-related data analysis	Theory-related data analysis
Collaboration- Difficult to collaborate with the professor and classmates in hybrid classes. Technology- The technology used in the hybrid classroom detracted from achievement and participation in the following ways: technological difficulties, feeling distanced and disconnected from the professor and classmates. The technology used in the hybrid classroom helped achievement and participation in the following ways: unlimited access to videos and PowerPoints, the use of technological tools (polling, chat rooms) during in-person sessions. Instructional design- The use of engaging discussion board activities, instructor created videos, and in-person office hours helped achievement and participation. The lack of in-person office hours, lack of accountability, and repetitive discussion board assignments detracted from achievement and participation. Classroom community- The hybrid class format detracted from achievement and participation due to the feeling of isolation and detachment from classmates and the professor. Interactive- The feelings of isolation and detachment detracted from achievement and participation.	Intrinsic cognitive load- A high intrinsic cognitive load is needed to achieve academic goals in hybrid classes because there is a lot of independent work and responsibility. Extrinsic cognitive load- The following elements contribute to a high level of extrinsic cognitive load in hybrid classes: technical difficulties, (Table continues on the next page……...) software / computer incompatibility, feeling disconnected with peers and the professor. Extrinsic cognitive load is lowered in hybrid classes with the following elements: unlimited access to course content (power points and videos), in-person office hours, use of technological tools during in-person session (chat, polls, breakout rooms). Germane cognitive load- Germane cognitive load is increased in hybrid classes with the following elements: instructor made videos, engaging discussion board assignments, unlimited access to course materials. Cognitive overload- The following elements in the hybrid classroom contributed to cognitive overload: technological issues, lack of connection to the professor and classmates, lack of professor feedback, repetitive discussion board assignments, and the lack of in-person office hours. The following elements in the hybrid classroom lowered cognitive overload: In-person office hours, the use of technological tool (polling, chatroom) during in-person sessions, unique discussion board assignments, unlimited access to videos and PowerPoints, the ability to work independently, and flexibility with due dates.

The final step in data analysis was keeping the data organized in a self-created Excel spreadsheet. The Excel spreadsheet is securely stored in my password protected person laptop. The data do not include any participant identifying information.

Results

The results from the data using the interview transcripts are presented below according to the participant's answers and according to the research question. Table 7 presents the preliminary codes and the final codes from the interview questions pertaining to the elements in hybrid classes that help academic achievement and participation.

Table 6

Coding from Interview Questions

Preliminary codes	Final codes
Lack of motivation, lack of connection with the professor and classmates, procrastination, technological errors, lack of feedback from the instructor, repetitive assignments, lack of course training.	Elements in the hybrid classroom that hinder academic achievement and participation.
Flexibility, unlimited access to the course materials, the ability to work independently, useful technological tools.	Elements in the hybrid classroom that help academic achievement and participation.

Every participant expressed at least one of the elements listed in Table 1 as an element in their hybrid classes that either hindered or helped academic achievement and participation. The final codes listed in Table 7 are discussed in Chapter 5 as they relate to the research question for this study. The research question for this study was the following: What are community college students' perceptions of hybrid class elements that affect their academic achievement? The codes related to the research question for this study are presented in Table 8.

Table 7

Codes Related to the Research Question

Research question	Code
Community college students' perceptions of hybrid class elements that affect their participation.	Instructor involvement Activities / assignments Technology Student motivation Student preparation and training

I discovered through participant interviews that the technology used in the hybrid classroom can hinder and can also help academic achievement and participation. The technology used in the hybrid classroom hinders academic achievement and participation when it does not function as it should. The technology used in the hybrid classroom helps academic achievement and participation when the technological tools are used during the in-person class sessions. Participant 8 said,

> The instructor used polling and the chat rooms during the Zoom meeting sessions and that helped me to learn the content. The polling forced me to pay attention during the class session and the chat room allowed me to ask questions and have my questions answered in real-time.

Participants 1 and 3 echoed this sentiment.

I also discovered that students did not feel adequately trained to begin taking classes in the hybrid format, and this lack of preparation hindered their academic achievement and participation. Participant 2 stated,

> I did not feel prepared at all to take my hybrid classes. I did not know how to access my classes, participate in the discussion board assignments and the in-

person sessions. I also had no idea how to submit my work to my professor. There needs to be training offered to the students who are going to take hybrid classes. Participants 6, 7, and 8 echoed this sentiment.

Evidence of Trustworthiness

The dependability, credibility, transferability, and confirmability implementation process were conducted as specified in Chapter 3 of this dissertation. No adjustments were needed. The evidence of trustworthiness was presented in this study.

As I collected data, I kept a journal of my thoughts to provide transparency and to avoid researcher bias. I also took copious notes during the interviews to notate any observation that I made, such as body language of the participants or voice intonations of the participants. I described the process I used to code the data and followed that process to ensure the validity of my conclusions.

Summary

In Chapter 4, I presented the results of this study, detailed the setting of the study, the participant selection strategy used to conduct this study, and the data collection process. I also summarized participants' responses that address the research question. The data analysis presented in this chapter demonstrates the trustworthiness of this study. The final codes from the data were elements in the hybrid classroom that hinder academic achievement and participation and elements in the hybrid classroom that help academic achievement and participation. Therefore, the final codes from the research question were technology, instructor involvement, activities / assignments, student preparation / training, and motivation. The final chapter of this dissertation, Chapter 5, includes a

discussion, conclusions, and recommendations based on an interpretation of the results presented in this chapter. Chapter 5 also presents the limitations of this study and implications for positive social change.

Chapter 5: Discussion, Conclusions, and Recommendations

The hybrid class environment used in this study is designed to offer community college students an alternative format to complete course requirements, complete their degree program, and ultimately achieve their academic goals. The data collected supported the problem and the purpose of this study. Below, I present the findings and recommendations to the research question from the participants' perspective regarding hybrid class elements that affect their academic achievement as they relate to the final codes for the research question.

Interpretation of the Findings

The research question was as follows: What are community college students' perceptions of hybrid class elements that affect their academic achievement? The community college students' perceptions of hybrid class elements that affect their academic achievement are categorized in two ways based on the data collected. The two categories are elements that hinder and elements that help community college students' academic achievement. I will discuss both aspects below by breaking the categories into four themes: (a) instructor involvement; (b) activities/assignments; (c) technology; and (d) student motivation/student preparation and training.

Elements of Hybrid Class that Hinder Students' Academic Achievement

Instructor Involvement

The lack of instructor involvement is an element in the hybrid class that hinders community college students' academic achievement. The participants of the study perceived that there is a lack of instructor involvement in the hybrid class various ways.

First, the instructor does not give feedback on submitted work at all or there is not immediate feedback on submitted work. For example, Participants 1 said,

> When I do not receive feedback from my professor or if the professor is slow at giving me feedback on my work, I am lost, and I do not know if I am on the right track to continue completing and submitting work.

Participants 3, 4, and 5 echoed this sentiment. Second, there is a lack of in-person office hours with the professor. The lack of in-person office hours affects community college academic achievement because there is often a delay in having a question answered when a student is not able to have the question answered in person, if email communication is used instead. Participant 7 stated,

> In one of my hybrid classes, the professor did not answer my email communication at all and that made it difficult for me to complete my work. I had to guess half of the time what he expected out of me.

Also, students may be too timid to ask questions during the in-person session or there may not be time to ask questions during the in-person session. Participant 2 said,

> I was too shy to ask questions during the in-person class sessions because it was not easy. I would rather go in person to ask my specific questions. For example, if I had a question about assignment #4, I did not want to hold up my notebook during the in-person class session just to ask my question. I felt the professor would not be able to see my notes anyway.

Participants 5 and 6 echoed this sentiment. Third, there is the use of videos and PowerPoint presentations that are not instructor made, but from an outside source. The

participants perceived that they did not get to know that professor in a hybrid class format. They perceived that the instructor was involved in the class, and they perceived that the instructor was teaching them if they used instructor made videos and PowerPoint presentations as opposed to videos and PowerPoint presentations from an outside source. Participant 6 said,

> I learn so much more and I feel connected to the class when the professor made her own videos instead of using YouTube videos. I feel like the teacher is actually teaching us with her videos. I can always watch the YouTube videos on my own time, outside of class.

Participant 8 said, “When my professor uses PowerPoint presentation that came from the textbook publisher, he was not involved in our learning."

Assignments/Activities

The participants perceived that activities and assignments in the hybrid classroom can hinder their academic achievement if the assignments are repetitive and if there is the same due date each week for the assignments and activities. Participant 1 stated,

> It was difficult to complete all of the work each week by the same due date. The weeks that the professor staggered the due date for the work helped a lot. I achieved better grades when I had options when I could submit my work. Life happens and the same due date each week hindered me from getting all of my work done.

Participant 3 echoed this sentiment.

Technology

Every participant perceived the technology used in the hybrid classroom as hindering their academic achievement when it did not function properly and when the software is not compatible with their computer. There were instances in every participant's experience in the hybrid classroom when they were not able to log into the classroom or participate in the in-person class sessions due to technical difficulties. Participant 8 said, "There were many times when my professor was not able to sign on for your in-person session, so he just canceled class. That hindered my learning a lot." Participant 1 said, "I had to get a new laptop because the software we used in my anatomy hybrid class was not compatible with my old laptop. That definitely hindered my achievement."

Student Motivation/Student Participation

Every participant expressed that a lack of motivation hindered their academic achievement in hybrid classes. Based on their experiences, hybrid classes made them feel disconnected from the class, isolated, and that decreased their motivation. All participants perceived a feeling of disconnection from their peers and their professor in their hybrid classes. Participant 6 said,

> You have to really be motivated to achieve your academic goals in hybrid classes. You have to remember to sign in to do the work, actually do the work, and submit it by the due date. This requires motivation and independent work to succeed.

The participants expressed that a lack of preparation and training for their hybrid classes hindered their academic success. Based on their experiences, the participants

perceived that they were not prepared for their hybrid classes, and they expressed a need for training at the beginning of the semester. Participant 4 said,

> I was not sufficiently prepared to participate in my hybrid classes and that hindered my academic achievement. I did not know how to access the course or the course materials. I also did not know how to find my assignments or how to submit my work. Training is definitely needed to resolve this issue.

Participant 6 echoed this sentiment.

Elements of the Hybrid Class That Help Students' Academic Achievement

Instructor Involvement

Based on the participant's perceptions and experiences, instructor involvement is an element of the hybrid class that can help community college students' academic achievement in various ways. First, it is important that the instructor offers in-person office hours. The participants perceived that instructor in-person office hours helped their academic achievement because they were able to ask questions and have their questions answered in real-time. The participants also perceived that in-person office hours helped student academic achievement in the hybrid class because they were able to connect to the instructor as a person, as opposed to a stranger on the screen. Participant 1 said,

> When I was able to see my professor during her office hours, she didn't feel like a stranger anymore. I was more motivated to do my work once I met her and I was able to have my questions answered right away. I didn't have to wait for her to respond to my email I also felt as though she cared about the class once I met her.

Second, the use of instructor created videos and PowerPoint presentations is important. The participants perceived the use of instructor created videos and PowerPoint presentations in their hybrid classes as helpful to their academic achievement because they experienced a connection to the instructor, and they perceived that the instructor was involved in the class. The participants perceived that they learned more when instructor created videos and PowerPoint presentations were used. Participant 5 said,

> When the instructor did not create videos or PowerPoint presentations, I did not feel that she was teaching the class. I saw that as a disconnect because I can watch YouTube videos on my own. I don't have to pay for a class to watch YouTube videos. When the instructor for my hybrid classes posted videos that he created, I learned more, and I felt like he was teaching us.

Participant 7 echoed this sentiment. Third, the use of technological tools during the in-person class sessions, such as polling, chat rooms, and breakout rooms is important.

Assignments/Activities

Each participant perceived assignment and activities used in their hybrid classes that were original and nonrepetitive as helpful to their academic achievement. For example, not having the same type of discussion board assignment each week or not having the same writing assignment each week helped their academic achievement. Participant 2 said,

> If I had to complete the same type of assignments each week in my hybrid class, I was not motivated to complete them. I only did them because I had to. I did not

> learn a lot from repetitive assignments. I have to have a variety to keep me learning and motivated.

Participant 5 echoed this sentiment.

Technology

Every participant perceived properly functioning technology used in their hybrid classes as helpful to their academic achievement. The aspects of the technology used in the hybrid class the participants perceived as helpful to their academic achievement were the tools used during the in-person class sessions, such as chat rooms, breakout rooms and polling (the professor asked a question in real time that the students must answer in a poll). Participant 8 said,

> It was really helpful when my professor used polling and breakout rooms during the in-person class sessions. I had to pay attention to be able to answer the poll question and I was held accountable for the work that was done in the breakout rooms.

Participant 2 and 4 perceived the use of chat rooms as helpful to get their questions answered in real-time.

Student Motivation/Student Preparation

Every participant perceived that there were elements in the hybrid classroom that increased their motivation, which helped their academic achievement. The motivational elements in the hybrid classroom that the participants experienced that they perceived as helpful to their academic achievement are instructor involvement (feedback, the use of

instructor made videos and PowerPoint presentations, and in-person office hours), unique assignments, and functioning technology.

Every participant perceived that preparation and training for their hybrid classes were helpful to their academic achievement. Once the students were knowledgeable in the dynamics of the hybrid classes (how to access their online sessions, where to find their assignments, how to submit their work), they were able to function in the class, helping their academic achievement. Participant 2 said, "I had no idea where to submit my work. Once I learned that process, I was more successful in the class." Participant 4 echoed this sentiment.

Limitations of the Study

One limitation of this study was the scope of the participants from one community college. This study included participants from one community college located in southeastern North Carolina. This limitation granted me as a researcher access to data from only one higher education institution.

Another limitation of this study was transferability to other settings. The community college where the data were collected is in a rural area of North Carolina, which may affect internet access for the participants and access to other technology used in hybrid classes. In some cases, internet access is limited in rural areas.

Another limitation of this study is the participants may not represent the general population of students. I visited four classes at the community college where this study was conducted, and my participants were chosen from those four classes. Seven out of

the eight participants were female, and the participants were all first and second year college students.

Conducting interviews via Zoom was also a limitation of this study. Although all of the participants were comfortable completing the interview through Zoom, they may have presented themselves differently than they would have if the interviews were conducted in a face-to-face format. For example, it may not be possible to see all of the participant's body language though a ZOOM meeting.

Recommendations

For future research, I recommend expanding the scope of the study to include participants at the university level. Expanding the scope of the study to include participants at the university level may allow the researcher to gain a deeper understanding of the students' perspective of the elements in the hybrid classes that affect academic achievement in the hybrid class. It may add useful information to interview junior and senior college students, as they may have a different perspective on hybrid classes with more experience.

Based on the findings and results of this study, I recommend that that instructors of hybrid classes implement the findings of this study into their hybrid classes, particularly the findings related to instructor presence in the hybrid class. Instructor presence in the hybrid class include in-person office hours, using technological tools during in-person session, using unique weekly assignments, and providing timely feedback to students. I recommend that community college administrators offer training

for students and faculty prior to the start date of classes for those teaching and taking hybrid classes.

Implications for Social Change

This study promotes positive social change by providing data for community college faculty, administrators, and course designers to enable them to create future community college hybrid classes that are engaging and conducive to learning. Based on the literature presented in previous chapters, hybrid classes are an important part of higher education, and they will be for the foreseeable future. Based on this reason and based on the results of this study, community colleges need to prioritize improving hybrid classes, focusing on the technology used in the hybrid classroom, teacher presence, and providing faculty and study training for future hybrid classes.

Conclusion

The conceptual framework, the theoretical foundation, were aligned with the research question, purpose, and the problem statement of this study. The research problem was the gap in the research on community college students' perceptions of hybrid class elements that affect their academic achievement. My study presented significant data to improve hybrid classes at community colleges. Previous research on hybrid classes discussed in the literature review did not focus on the student's perspective on elements in the hybrid class that affected their academic achievement. Hence, this study was necessary to begin to understand the student's perspective about their experiences in the hybrid class.

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Appendix A: Interview Protocol

Participant ID: _____ Date: _____ Time: _____

Location: _____ Recording ID: _____

Interview Questions	**Researcher Notes**
Did you participate in your hybrid classes? *Probe: How often and when did you participate in your hybrid classes?*	
Please discuss how well you did in the hybrid classes you have taken. *Probe: Did you achieve the same grades in all the hybrid classes you have taken, or did you achieve different grades?*	
What did the instructor of your hybrid classes do that helped you to learn the course content? *Probe: What type of class activities or discussion forums can the instructor use to help you learn the course content in hybrid classes?*	
How did the technology used in your hybrid classes help or hinder you in learning the course content? *Probe: In what ways did the technology used in your hybrid classes help you or hinder you in learning the course content?*	
What aspects of your hybrid classes do you believe may have helped your participation? *Probe: What aspects of your hybrid classes do you believe made it easy for you to participate?*	
What did the instructor of your hybrid classes do to make your participation in the class easier*? Probe: What type of class activities or discussion forums did the instructor use in your hybrid classes to maximize your participation?*	

What aspects of your hybrid classes do you believe may have hindered your participation? *Probe: What aspects of your hybrid classes do you believe made it difficult for you to participate?*	
What did the instructor of your hybrid classes do to make your participation in the class difficult*? Probe: What type of class activities or discussion forums did the instructor use in your hybrid classes that hindered your participation?*	
How do you think the technology (platforms, programs, software, hardware, etc.) used in your hybrid classes helped or hindered your participation? Probe: *Explain how the technology used in your hybrid class helped or hindered your participation in the class.*	