THE RELATIONSHIP BETWEEN THE FLIPPED CLASSROOM AND CRITICAL THINKING, ACADEMIC PERFORMANCE, STUDENT PERCEPTIONS, AND STUDENT EVALUATIONS IN AN INTRODUCTORY PSYCHOLOGY COURSE

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ABSTRACT

For more than two centuries, traditional college instruction in America has relied upon the use of the lecture as the model for the college classroom learning environment (Christensen & Eyring, 2011; Costin, 1972; Woodard, 2011). However, criticism of the lecture has led to the development of alternative instruction models (Dillenbourg, 1999a; Prince, 2004). The flipped classroom is one of these models. The flipped classroom flips the traditional model by moving content typically delivered through a lecture to an online environment and using class time for learning activities that are active and collaborative (Abeysekera & Dawson, 2015b).

Despite many advocates for using the flipped classroom model, there has been little research on how effective the model is at generating desired student outcomes. Understanding the viability of the flipped classroom for promoting learning is necessary if college educators are going to utilize the model. This study considers the flipped classroom's effectiveness in three areas: academic performance, critical thinking, and evaluation and perception of the learning environment. Additional consideration was given to the relationship between student perception and academic performance.

This mixed methods study used a quasi-experimental, within subjects design. The population was comprised of students from two sections of a General Psychology course at a private, liberal arts university during one full fall semester. Treatments were counterbalanced so that each group of participants experienced the models in a different order. Individual qualitative interviews were conducted with 11 students who were recruited from the original sample.

Results showed no significant differences between the instruction models for perception and evaluation or critical thinking. There were mixed results on the differences in academic performance. Despite this, a majority of participants preferred the flipped classroom model to the traditional model. Ultimately, this study demonstrated no detriment to students when using the flipped classroom.

DEDICATION

This work is dedicated to my wife for her patience and forgiveness and my children for keeping me attuned to what is most valuable in my life.

ACKNOWLEDGEMENTS

Dr. Ted Miller who, from the point of initiation into this scholarly endeavor, provided guidance, perspective, and encouragement throughout my doctoral journey. Dr. Beth Crawford who served as professor, advisor, and believer in this study and in me. Dr. David Rausch and Dr. Dawn Ford for their support and enthusiasm for this project. I would also like to thank Cristy Pratt for her willingness to attempt something new despite the effort required and Mike Hastilow for his invaluable contributions, without which I am not sure how this work would have been completed.

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LIST OF ABBREVIATIONS

IHE, Institutions of higher education

IRB, Institutional research board

LMS, Learning management system

PCT, Psychological critical thinking

PCTE, Psychological critical thinking exam

SDT, Self-determination theory

SAU, Southern Adventist University

SPSS, Statistical Package for the Social Sciences

TOS, Table of specifications

U.S., United States

UTC, University of Tennessee at Chattanooga

ZPD, Zone of proximal development

CHAPTER I

INTRODUCTION

For more than two centuries, traditional college instruction in America has relied upon the use of the lecture as the model for the college classroom learning environment (Christensen & Eyring, 2011; Costin, 1972; Woodard, 2011). The lecture was first recognized in American higher education in 1727 by Isaac Greenwood (as cited in Christensen & Eyring, 2011), a Harvard College professor of mathematics and natural philosophy who used the lecture as an innovative model of instruction to relate new scientific discoveries to his students. With the lecture, the professor delivers course content through a speech to students attending class while students took specific notes to be studied later based upon what they were hearing. Since beginning in the 18th century, college instruction has evolved, incorporating other models of instruction that often supplement the instructor's lecturing (Bishop & Verleger, 2013b; Bonwell & Eison, 1991; Cross, 1987). Despite this evolution, the lecture has remained a common pedagogy for college instructors over the years (Burgan, 2006).

Background of the Problem

The lecture has not been without criticism (Costin, 1972). Slosson (as cited in Miller, 1927), defined lecturing as a mysterious process where information from a professor's notes flows directly to the student's notes without passing through the mind of either, suggesting that there is little learning that takes place during a lecture. Schueler (1951) stated that lecturing "is probably the most ineffective and wasteful of all methods" (p. 92) for imparting information.

Isaacs (1994) suggested that lecturing is not as valuable for learning as other methods and King (1993) promoted the "guide on the side" (p. 30) as an alternative to the lecturing "sage on the stage" (p. 30). More recently, studies of the lecture model of instruction continue to show that other pedagogies are often more effective at facilitating student achievement of learning outcomes (Reber, Downs, & Peterson Nelson, 2017a; Sadeghi & Sedaghat, 2014; Stetzik, Deeter, Parker, & Yukech, 2015). Importantly, Hartley (1967) found that students only remember 20% of lectured material. Despite such pejorative criticism, the lecture is still suggested as an important component of the college classroom (Exley & Dennick, 2009), with some proffering that lecturing is necessary for some types of learning (Burgan, 2006; Schwerdt & Wuppermann, 2011).

To understand criticism of the lecture, it is important to identify what methods of instruction have been used in the traditional classroom. The traditional classroom focused on the instructor giving a speech and students taking notes on what the lecturer said (MacManaway, 1970). Notes would be studied later so that students could prepare for upcoming assessments. Eventually the use of tape recording of lectures became a supplement to note taking (Popham, 1961), and technology evolved to become an integral part of the lecture (Saettler, 2004). Classic technologies include the textbook and the chalkboard as instructional tools, however, with the advent of school museums and the invention of slide projectors, lecturers were able to offer visual representations of lecture content (Reiser, 2001). Overhead projectors became popular machines allowing for lecturers to write on transparencies during the lecture in an attempt to engage students, and, eventually, these innovations gave way to digital presentations using computers to generate slides of information (Reiser, 2001). The modern classroom has also moved beyond strict speeches given by the instructors and instead incorporated some discussion

time, such as allowing students to ask questions of what has been presented (Barr & Tagg, 1995). Despite the addition of more student interaction and the progressive use of technology, this did not represent a fundamental change in pedagogy, but only supplemented the instructor-centric delivery of course content (Barr & Tagg, 1995; Costin, 1972; Reiser, 2001).

Criticism of the lecture has given rise to other pedagogies that college instructors have used for engaging students for the purpose of, and potential improvement of, student performance. Methods such as active learning (Prince, 2004) and collaborative learning (Dillenbourg, 1999a) have been shown to increase student engagement. Active learning, first promoted in the 1980's, is a concept promoting the active engagement of students in the practice of doing things in the classroom environment (Bonwell & Eison, 1991). Likewise, collaborative learning, which is defined as a learning opportunity in which two or more people work together to learn or attempt to learn something (Dillenbourg, 1999a), is a concept that has been researched since the 1990's and is advocated by researchers and practitioners of the flipped classroom model. Additionally, colleges are increasingly utilizing online technology for the delivery of classes (Allen & Seaman, 2016). The use of online technology allows the incorporation of alternative pedagogies including online discussion forums, the use of video, and interactive online textbooks (Means, Toyama, Murphy, Bakia, & Jones, 2009). The many available options provide college instructors the opportunity to choose some approach other than lecturing for the instructional design of their courses.

But even with these options, lecture has been reported as being the most frequently utilized instructional practice despite being reported as being the least effective (Smith, 2010). For instance, Smith (2010) found that, despite lectures being rated as less effective in every category than strategies such as practical exercises, hands-on activities, and group discussions,

more than half of faculty in the study chose to lecture. Additionally, a study testing the hypothesis that lecturing maximizes learning found that active learning techniques were more effective at improving course performance than lecturing (Freeman et al., 2014b). In this study, student exam scores improved by 6% and students in a lecture-dominant course were 1.5 times more likely to fail than students in active learning courses. Despite its popularity with college and university faculty, current research on college teaching suggests the need for strategies other than the lecture (T. C. Andrews & Lemons, 2015; Freeman et al., 2014b; Grunspan, Kline, & Brownell, 2018).

One of the more recent instructional design models that has been offered as an alternative to a lecture model is the flipped model of instruction (Baker, 2000). Since its inception at the beginning of the 21st Century, the flipped classroom has taken many forms, an evolution that has made defining the model difficult. Abeysekera and Dawson (2015b) broadly define the flipped classroom as moving most content delivery out of class to an online learning management system (LMS) and using class time for learning activities that are active, collaborative, and require students to complete pre- and/or post-class activities to fully benefit from in-class work. Through the use of an LMS, content is delivered through audio recordings or videos in addition to textbook-related materials either in printed form or through various online mediums. Students are expected to listen to the audio lectures or watch the videos before coming to class, with some studies showing an increase in engagement with these preclass activities (Critz & Knight, 2013; Forsey, Low, & Glance, 2013; McLaughlin et al., 2013). The in-class experience consists of activities intended to actively engage students for the purpose of facilitating the development of critical thinking skills and demonstrating student achievement of learning outcomes (Abeysekera & Dawson, 2015b; Domagk, 2015). In this way, what has traditionally been a classroom

activity, lecturing, as well as what has typically been an out of class activity, homework, have been flipped (Lage, Platt, & Treglia, 2000).

The term "flipped" was first coined by Bergmann and Sams (2012) who used the term to describe the way they incorporated an online LMS for the delivery of course content. However, this strategy had documented implementation at the beginning of the 21st century when using online options was still quite new (Lage et al., 2000). As online education continued to develop, online management tools were created to facilitate a more engaging experience through online technologies and the opportunity to facilitate online classes increased (Allen & Seaman, 2011). The advent of hybrid learning promoted combining both online and face-to-face environments (Allen, Seaman, & Garrett, 2007) and, with these innovations, the flipped classroom model of instruction was more fully developed. With the increase in the use of online instruction, emerging technologies have dominated the flipped classroom and have become a primary component of the model (Abeysekera & Dawson, 2015b).

The flipped classroom is not so much a new concept as a reframing of widely recognized pedagogies. Numerous studies have found that active learning techniques promote better learning than traditional methods (Haak, HilleRisLambers, Pitre, & Freeman, 2011; Hake, 1998; Ruiz-Primo, Briggs, Iverson, Talbot, & Shepard, 2011), with Abeysekera and Dawson (2015b) suggesting active learning is a necessary component of the flipped classroom. Berrett (2012a) posits that the flipped classroom should incorporate group learning activities while Sweet and Michaelsen (2012) suggest team-based learning for problem-solving activities that are often a part of the flipped classroom (Abeysekera & Dawson, 2015b). Though the terminology for these kinds of classrooms may have only recently been developed, the methods are well-established by a variety of research studies (Dillenbourg, 1999b; Prince, 2004).

One of the benefits of the flipped classroom may be the promotion of critical thinking skills. Critical thinking has been the focus of higher education for many years (Bloom, 1956; Halpern, 2002). Some colleges and universities mandate critical thinking as a part of long-term goals and instructors often report the skills as being of great importance in courses they teach (Kim, Sharma, Land, & Furlong, 2013; McConnell, Steer, Owens, & Knight, 2005) even though research conclusions are mixed on the effectiveness of teaching strategies on the development of critical thinking (Riddell, 2007). Still, students have reported a positive relationship with how well teaching is organized and the development of critical thinking skills (Loes, Salisbury, & Pascarella, 2015).

Though the term has been widely used, and the concept highly promoted, defining critical thinking has been difficult. Dewey (1910) identified critical thinking as the scientific attitude of reflective thought. More modern iterations have identified critical thinking as higher-order-thinking (Bloom, 1956) or a "habit of mind" (Mulnix, 2012, p. 465). A simple definition of critical thinking is the comprehensive exploration of issues, ideas, artifacts, and events before an opinion or conclusion is accepted or formulated (Rhodes, 2010). Once defined, however, the question of how to promote this type of thinking in students remains. Halpern (2002) discussed the importance of using a skills approach to learning to think critically. Both active learning and collaborative learning strategies have been promoted as enhancing the development of critical thinking (Mulnix, 2012), with Van Gelder (2005) stating that like learning other skills, critical thinking skills must incorporate the opportunity for practice. Creating a learning environment that is active and collaborative as well as giving students the opportunity to practice important skills is vital for promoting critical thinking. The flipped classroom model emphasizes this kind

of learning environment, which may facilitate the development of critical thinking in ways a lecture classroom does not.

Purpose of the Study

The purpose of this study was to investigate potential differences between the flipped model of instruction and the traditional model of instruction in four distinct areas. First, this study examined the relationship between student perception of the learning environment and student academic performance within the instructional environment. Student perception indicates how students understand their role within the learning environment, specifically, whether or not they perceive themselves as either active or passive participants in the learning process. Second, this study examined the relationship of the flipped classroom with academic performance. A primary component of academic performance is student achievement of course learning outcomes. Learning outcomes are statements that describe what learners should know, do, or feel on completion of a learning experience (Rothwell & Kazanas, 2011). Third, this study examined the relationship of the flipped classroom and critical thinking. Critical thinking is characterized by the comprehensive exploration of issues, ideas, artifacts, and events before an opinion or conclusion is accepted or formulated (Rhodes, 2010). Finally, this study examined the relationship of the flipped classroom with student evaluation of the course instructional model. Evaluation here is defined as "judging the merit or worth of something" (Fitzpatrick, Christie, & Mark, 2009, p. 1).

Research Questions

The principal aim of the study was to explore the relationship between the flipped classroom model of instruction and student perception, academic performance, critical thinking, and evaluation. The following research questions generated the attendant research hypotheses:

R1: Is there a relationship between student perception of the learning environment and student academic performance within the flipped classroom learning environment as well as the traditional classroom learning environment?

H1: There is a relationship between student perception of the learning environment and student academic performance within the flipped classroom learning environment as well as the traditional classroom learning environment.

R2: Is there a difference in academic performance for students engaged in the flipped classroom model of instruction compared with the traditional model of instruction?

H2: There is a difference in academic performance for students engaged in the flipped classroom model of instruction compared with the traditional model of instruction.

R3: Is there a difference in critical thinking for students engaged in the flipped classroom model of instruction compared with the traditional model of instruction?

H3: There is a difference in critical thinking for students engaged in the flipped classroom model of instruction compared with the traditional model of instruction.

R4: Is there a difference in participants' evaluation of the flipped classroom model of instruction compared with the traditional model of instruction?

H4: There is a difference in participants' evaluation of the flipped classroom model of instruction compared with the traditional model of instruction.

Importance of the Study

The lecture has been the subject of educators' research and concern for at least 100 years (Christensen & Eyring, 2011; Costin, 1972). Due to its prominence in higher education, the lecture has promoted criticism and challenge by practitioners of other models throughout this time (Hartley & Cameron, 1967; Isaacs, 1994; King, 1993); this prominence has resulted in the development of alternative models. For instance, active learning and collaborative learning have been proposed as alternatives to the lecture with the intent of shifting the focus of the learning experience from the instructor to the student (Dillenbourg, 1999a; Prince, 2004). Still, instructors continue to rely on lecturing for much of the delivery of course content (Exley & Dennick, 2009; Smith & Valentine, 2012) thus limiting the opportunities for active or collaborative learning in the classroom. The flipped classroom model was developed as a way to make in-class interaction more active and collaborative while often, but not always, retaining direct instruction through a lecture (Bishop & Verleger, 2013a).

According to Abeysekera and Dawson (2015b), there is need for more research on the flipped classroom. Many existing articles are of either student perception of the learning experience or anecdotal experiences of instructors on the perceived effectiveness of the model (Bishop & Verleger, 2013a). Far fewer empirical studies have been completed on the effectiveness of the model for helping students achieve learning outcomes (Bishop & Verleger, 2013a). Some research has focused upon the impact of the flipped model on student grades and/or student achievement (Ferreri & O'Connor, 2013b; Findlay-Thompson & Mombourquette, 2014b; Haughton & Kelly, 2015; Moravec, Williams, Aguilar-Roca, & O'Dowd, 2010; Talley &

Scherer, 2013), however the literature is mixed on the benefits of using the model (Findlay-Thompson & Mombourquette, 2014b). Findlay-Thompson and Mombourquette (2014b) incorporated a flipped classroom model into a business class and compared it to two sections of a lecture to study the impact the model had on student grades. Students watched videos outside of class and participated in discussions and other assignments in class. There were no differences in student grades between the two models. Conversely, Ferreri and O'Connor (2013b) incorporated the flipped model into a pharmacy course, using videos outside of class while applying patient information to case studies in class and found significant grade increases as compared to a lecture-based model. The reasons for the differential outcomes between these findings are unknown.

Though the use of the flipped classroom model has spanned a variety of disciplines such as business (Albert & Beatty, 2014; Findlay-Thompson & Mombourquette, 2014a), mathematics (Love, Hodge, Grandgenett, & Swift, 2014; Wilson, 2013), nursing (Missildine, Fountain, Summers, & Gosselin, 2013), nutrition (Mary Beth Gilboy, Scott Heinerichs, & Gina Pazzaglia, 2015), and pharmacology (Ferreri & O'Connor, 2013a), very few studies have investigated the use of the flipped classroom model in psychology (Sletten, 2015; Talley & Scherer, 2013). Talley and Scherer (2013) implemented the flipped classroom into a course on physiological psychology and compared exam scores with a traditional, lecture-based classroom. Although exam scores in the flipped section were higher, the course was not entirely flipped, with only 25% of class sessions incorporating the flipped design. Sletten (2015) compared exam grades from a flipped introductory psychology course with a traditional, lecture-based course and found no significant difference. Unfortunately, it is unclear how the classroom utilizing the flipped

model was designed in this study and, therefore, the relationship between the flipped classroom and learning is difficult to determine.

In preparing this investigation, the researcher found only one study researching the connection between the flipped classroom and critical thinking (Kong, 2014). In a study of the use of digital classrooms, Kong (2014) attempted to measure whether critical thinking could be learned through the use of a flipped classroom design. The data show that students were able to learn critical thinking skills through this model to a significant degree, however, the study did not compare the amount of critical thinking gained compared to other models. Further research in understanding the relationship between the flipped classroom and the development of critical thinking skills as compared to more traditional models of instruction is warranted. Thus, there is an apparent gap in the literature for understanding the flipped classroom model, and this seems especially true as it relates to psychology courses. Research is needed to understand any relationship that may exist between the flipped classroom model of instruction and academic performance as compared to a traditional classroom model of instruction. Furthermore, research is needed to understand any relationship that may exist between the flipped classroom model of instruction and the development of critical thinking skills and how this relationship may be influenced by specific content areas.

The need for more research on the flipped classroom model of instruction is well-established (Abeysekera & Dawson, 2015b), especially as a number of deficiencies in the literature have been identified. These deficiencies include the following recognized issues. First, available research has been primarily of student perception of the model and not student performance (Butt, 2014). Second, of those studies that do attempt to measure student academic performance, the findings are mixed (Findlay-Thompson & Mombourquette, 2014b). Third, an

obvious gap in the literature exists for studies on the flipped classroom model across course content and in particular within psychology courses (Sletten, 2015; Talley & Scherer, 2013). Finally, there appears to be no research of a relationship between the flipped classroom model and critical thinking as compared to traditional models of instruction (Kong, 2014). This study sought to provide evidence concerning each of the gaps within the literature.

Theoretical Framework of the Flipped Classroom

Though Bergmann and Sams (2012) suggested the flipped classroom as a way to engage students, increased student learning, critical thinking, and satisfaction of the learning environment may also be impacted by the flipped classroom model. Abeysekera and Dawson (2015b) developed a theoretical model of the flipped classroom that incorporates self-determination theory (SDT) as the foundation upon which the flipped classroom can be based. Additionally, the flipped classroom model provides alternative engagement opportunities for students (Bergmann & Sams, 2012). Both active learning (Bonwell & Eison, 1991) and collaborative learning (Dillenbourg, 1999a) have also been proposed as theoretical underpinnings of the flipped classroom's relationship with student engagement. The combination of these concepts provides a theoretical framework for the application of the flipped classroom.

SDT proffers that learners are motivated to learn based upon how well the learning environment meets innate cognitive needs. Learner motivation has been widely studied as a necessary component of the learning process and can be defined as "the willingness to attend and learn material in a development program" (Cole, Feild, & Harris, 2004, p. 67). Learning is greatly affected by how motivated students are to attend to the learning environment and engage

with the instructor in the learning process. SDT suggests that by meeting core cognitive needs of learners, motivation can be enhanced and improved for the learning experience and therefore result in higher academic performance.

SDT identifies three cognitive needs: competence, autonomy, and relatedness (Deci & Ryan, 1985a). In order to feel competent, students master knowledge, behavior, and skills important for success. Feelings of control and independence are satisfied by their need for autonomy. The need for relatedness is associated with belonging or a sense of connection to a social group within a given situation (Dillenbourg, 1999a; Pintrich, 2003). A flipped classroom that uses SDT is intended to meet students' needs of competence, autonomy, and relatedness. Deci and Ryan (1985a) first promoted SDT as a motivational theory of human behavior. As such, the level of students' motivation will influence their level of effort and focus on a learning activity (Abeysekera & Dawson, 2015b). The flipped classroom requires students to engage and complete a portion of the course requirements outside of class, requiring students to be motivated to complete this work. It is believed that a lack of student motivation is a fundamental reason for this discrepancy (Abeysekera & Dawson, 2015b). Due to its emphasis on meeting these specific motivational needs within the learning environment, SDT is foundational for the flipped classroom model of instruction (Cole et al., 2004).

Definition of Terms

The following definitions were in operation during this study.

- Active Learning: Instructional activities involving students doing things and thinking about what they are doing (Bonwell & Eison, 1991).

- Collaborative Learning: A situation in which two or more people learn or attempt to learn something together (Dillenbourg, 1999a).
- Critical Thinking: Critical thinking is thinking characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion (Rhodes, 2010).
- Flipped Classroom Model: Operationally defined as moving most content delivery out of class to an online LMS, using class time for learning activities that are active and social, and requiring students to complete pre- and/or post-class activities to fully benefit from in-class work (Abeysekera & Dawson, 2015b).
- Hybrid Course: A hybrid course is a college course that blends online and face-to-face delivery. A substantial portion of the content is delivered online, from 30-70% of course content (Allen et al., 2007).
- Learning Management System: Operationally defined as software systems designed to support student learning (Ellis & Calvo, 2007).
- Learning Outcomes: Learning outcomes are statements that describe what learners should know, do, or feel on completion of a learning experience (Rothwell & Kazanas, 2011).
- Traditional Model of Instruction: Operationally defined as a model wherein the instructor primarily lectures, students mainly take notes, and out of class homework problems are assigned for students to complete on their own (Wasserman, Norris, & Carr, 2013).
- Student Academic Performance: Student scores on exams (Freeman et al., 2014a).
- Student Engagement: The combination of student involvement, the effort of the student in the learning process through studying and other activities, and the instructor's

organization of learning opportunities to encourage student participation in these learning activities (Wolf-Wendel, Ward, & Kinzie, 2009).

Methodological Assumptions

There were several assumptions for this study. First, it was assumed that all students were willing participants and answered all queries objectively and honestly. Second, due to the active nature of the learning environment, it was assumed that students followed the direction of the instructor while in the classroom. Third, when interacting with online materials, it was assumed that all students followed the directions of the instructor and fulfilled expectations of online coursework. Fourth, it was assumed the instructor carefully followed arranged guidelines for delivery of the course design elements with fidelity. Finally, there were seven different instruments that were used for measurement in this study, and it was assumed they were sufficiently sensitive to detect changes in behaviors and perceptions. Ultimately, the assumption was that there was a difference between the flipped classroom and traditional models of instruction as evidenced by students' perception of the learning environment, academic performance, critical thinking, and evaluation of the learning environment.

Delimitations of the Study

The location for this study, Southern Adventist University, is a private, liberal arts college. Students enrolled in the courses to be utilized were primarily psychology, health, and prehealth majors with similar interests in psychology. General psychology is a freshman level course and was held in the fall semester. As a result, many students were within their first year of college. Each class, and therefore each treatment condition, was taught by the same

instructor. Additionally, the university has been recognized as the most ethnically diverse in the southern United States (U.S.) ("Campus Ethnic Diversity," n.d.) and, because health and pre-health majors make up the largest portion of students enrolled at the university, the population of participants enrolled in the General Psychology course is representative of the overall university population. The sample was chosen in nonrandom fashion by students enrolling in the sections of the General Psychology course that fit best within their overall academic schedule and the needs of their degree program. For this reason, this study was quasi-experimental in design using intergroup comparisons across a content and timeframe delineated period. Due to issues of potential researcher bias, the researcher was not an instructor for any of the sections assessed.

Limitations of the Study

This study was conducted in a midsized private faith-based liberal arts university, and results may not be generalizable to two-year colleges or public universities. Research conducted within a classroom setting has a unique set of constraints that must be addressed. First, because the focus of this study is on the instructional design within a classroom, students were enrolled in the course section that fit their individual semester schedules. For this reason, randomization of participants was not possible. Second, the course where the treatment was implemented uses an online textbook. For a lecture class, an online text is unnecessary, however, in order to provide a primary resource for students that is consistent across conditions, an online text was used. Third, the course was taught by a single instructor who had little experience using the flipped model of instruction. Due to the instructor's background in using a more traditional instructional model, adjusting to the flipped classroom model was challenging. Fourth, the length of this study was a university semester, which could have affected academic performance and critical thinking skills

development outcomes. Fifth, because each section of the course received both conditions, students participated in both conditions and, therefore, became aware of these conditions. Finally, due to each student's individual academic goals, some students chose to drop the course during either condition, leading to attrition and a reduction of the potential sample.

CHAPTER II

LITERATURE REVIEW

Higher education has relied upon a consistent strategy of instruction for two centuries (Christensen & Eyring, 2011; Costin, 1972; Schueler, 1951; Woodard, 2011). Students attend classes to hear a professor lecture about different topics and take notes during the process (Isaacs, 1994; MacManaway, 1970). Students are then assigned work intended to deepen their knowledge of individual topics and, once completed, the assignments are graded to assess how well they understand each one. After a time, students are then assessed, often through a summative assessment like an exam, to ascertain how much of each topic is known by the students. Students are then assigned a grade based upon the entirety of their work within the course of study. But how well does this traditional model of instruction facilitate learning for college and university students? Are there other pedagogies that work better? How do these different models compare? These questions, among others, are vital to instructors in guiding their instructional strategies.

Researchers have been analyzing how college professors teach for decades (Costin, 1972; Lage et al., 2000; Miller, 1927; Prince, 2004; Velegol, Zappe, & Mahoney, 2015). Though lecturing became a primary form of instruction for college and university faculty (Lammers & Murphy, 2002), there have been many other models used. For instance, methods such as instructor-led class discussion has been widely adopted by many professors for many years (MacManaway, 1970). The methods of active learning (Prince, 2004) and collaborative learning (Dillenbourg, 1999a) have been shown to increase student engagement and Stetzik (2015)

demonstrated how using puzzle-based pedagogy improved student performance over a traditional lecture-based classroom. Additionally, colleges and universities are increasingly utilizing online technology for the delivery of classes (Allen & Seaman, 2011). The use of online technology allows the incorporation of alternative pedagogies including online discussion forums, the use of video, and interactive online textbooks (Means et al., 2009). The many available options provide instructors the opportunity to choose some approach other than lecturing for the instructional design of their courses. But even with these options, lecture has been reported as being the most frequently utilized instructional practice despite being reported as the least effective (Smith & Valentine, 2012). Considering this, the research questions for the current study focus on (a) student perception of the learning environment, (b) student academic performance in the flipped classroom, (c) critical thinking in the flipped classroom, and (d) student evaluation of the classroom. This review of related literature will discuss relevant issues related to these research questions.

The State of Higher Education Pedagogy

The lecture has been a staple in American higher education since the 17th century (Christensen & Eyring, 2011). Harvard College professor of mathematics and natural philosophy, Isaac Greenwood (as cited in Christensen & Eyring, 2011), incorporated the lecture to bring to students new and exciting scientific discoveries, most of which had not yet been published in books or periodicals. This instruction was considered innovative at the time and soon became the model used across all colleges and universities in the United States. In the lecture, course content was delivered by the professor through a speech to students attending class, and those students took specific notes to be studied later based upon what they were

hearing. This model placed the professor at the center of the learning experience and, as the source of knowledge for students, elevated him to a position of privilege that pervades to this day (Barr & Tagg, 1995; Freeman et al., 2014b). Since then, college instruction has evolved, incorporating other models of instruction that often supplement the instructor's lecturing (Bishop & Verleger, 2013b; Bonwell & Eison, 1991; Cross, 1987; MacManaway, 1970). Despite this evolution, the lecture has remained a common pedagogy for college instructors (Burgan, 2006; Schwerdt & Wuppermann, 2011).

The traditional classroom instructional model consists of a lecture and discussion format that utilizes instructor delivered content and question and answering periods for students to clarify what has been presented (Barr & Tagg, 1995; Freeman et al., 2014b). Note taking is considered vital to student learning as it allows students to study later to prepare for upcoming assessments. Technology has taken a more prominent role in the classroom as an integral part of the lecture (Saettler, 2004). Originally, the textbook and chalkboard were innovative technologies used as instructional tools. However, with the invention of slide projectors, lecturers were able to offer visual representations of lecture content (Reiser, 2001). Overhead projectors allowed lecturers to modify their visual content on transparencies during the lecture in an attempt to engage students. Eventually, the use of digital projectors became a standard for delivering content through the use of computers in presenting information (Reiser, 2001). Though the addition of more student interaction and the progressive use of technology have long been valuable components of higher education, these tools did not represent a fundamental change in pedagogy, but only supplemented the basic lecture and discussion model as the primary pedagogy (Bishop & Verleger, 2013b; Costin, 1972; Reiser, 2001). But this is changing.

The ways in which the public prefers to participate in learning experiences have prompted changes to how institutions of higher education (IHE) deliver learning experiences. In the 21st century, students are expecting more freedom and more innovation, and technology is developing at such a rapid pace that it is difficult for instructors to stay current. Education is changing from a traditional face-to-face classroom to synchronous and asynchronous courses, increasingly free of charge to the public (Picciano, 2009). Due to the rise of online education in the late 20th century, students no longer need to be physically present for their education. Instead, students are able to further their education while still continuing their typical lives. The flexibility that online education provides is valuable, though online-only education requires self-directed learning, with students who are disciplined to guide themselves. Online education is being adopted rapidly (Allen & Seaman, 2016), but there remain some educators that are concerned about how to design courses for a purely online environment that will address the needs of their students. Many students still crave face-to-face contact with instructors.

Twenty-first century educators recognized the desire for a hybrid, or blended (Picciano, 2009), model of learning with students interacting with a learning management system (LMS) as well as attending face-to-face classes, and IHEs evolved to meet the growing need. Many educators believe that teaching online sacrifices some important aspects of teaching, mainly the opportunity for instructors to support students both socially and emotionally (Picciano, 2009). Blended learning affords an opportunity to combine both the benefits of online technology with the support students receive through direct interaction with a professor. These educators realize that, with such a variety of learners, requiring only one mode of learning will not accomplish the goals of the learning environment. Even in today's information-rich environment through the use of the internet and online technologies, some still struggle with understanding the new world

of technology-based education (Picciano, 2009). With so many new facets to college pedagogy, college instructors are creating classrooms, both online and face-to-face, to meet the growing needs of students. In many ways, faculty must be sensitive to the changes to external environments and adjust their strategies accordingly (Burke, 2011). By doing so instructors will not only stay current to innovative technologies and be sensitive to students' changing needs, but also create learning environments that can make use of the technical innovations of education in the 21st century.

Flipped Classroom

Despite the innovation in online education and the introduction of blended learning, most university classrooms still regularly incorporate lecture (T. C. Andrews & Lemons, 2015; Grunspan et al., 2018; Henderson, Beach, & Finkelstein, 2011; Schwerdt & Wuppermann, 2011; Smith, 2010). In this model, the instructor is viewed as the source of content knowledge (Barr & Tagg, 1995) and, though classroom environments are potentially more engaging due to increased use of technology and the incorporation of discussion, students are still relegated to passive listeners rather than active participants. Active participation in the learning process, referred to as active learning (Abeysekera & Dawson, 2015b; Prince, 2004), has been widely recognized as more effective at facilitating student learning (T. Andrews, Leonard, Colgrove, & Kalinowski, 2011; Berrett, 2012b; Freeman et al., 2014a; Richardson, Abraham, & Bond, 2012). Due to the discrepancy, educators have attempted to find ways to combine both a traditional, lecture-based pedagogy with more active learning strategies. This effort has resulted in a variety of models of instruction (Bishop & Verleger, 2013b; Bonwell & Eison, 1991). One of these models, the

flipped classroom, has risen in popularity primarily because of its combination of online technologies, content delivery methods similar to the lecture, and active learning strategies.

Bergmann and Sams (2012) first coined the term, flipped classroom, to describe the way they utilized an online LMS to deliver course content for a high school science class. Though the term was new, the strategy of inverting the way content was delivered had documented implementation at the beginning of the 21st century when using online options was still quite new (Lage et al., 2000). As online education continued to develop and online management tools were created to facilitate a more engaging experience through online technologies, the opportunity to facilitate online classes increased (Allen & Seaman, 2011). Once blended learning became popular by combining both online and face-to-face environments (Allen et al., 2007) the flipped classroom model of instruction was able to develop further. The increase in the use of online instruction led to emerging technologies dominating the flipped classroom and they have become a primary component of the model (Abeysekera & Dawson, 2015b).

Despite its growing popularity, few empirical studies had been completed on the effectiveness of the flipped classroom model for increasing student academic performance before 2013 (Bishop & Verleger, 2013a). Though research focused upon the impact of the flipped model on student grades and student achievement is available (Ferreri & O'Connor, 2013b; Findlay-Thompson & Mombourquette, 2014b; Haughton & Kelly, 2015; Moravec et al., 2010; Talley & Scherer, 2013), the literature is mixed on the benefits of using the model to improve academic performance (Findlay-Thompson & Mombourquette, 2014b). For example, Findlay-Thompson and Mombourquette (2014b) incorporated a flipped classroom model into a business class and compared it to two sections of a lecture to study the impact the model had on student grades. Students watched videos outside of class and participated in discussions and other

assignments in class. There were no differences in student grades between the two models. Conversely, Ferreri and O'Connor (2013b) incorporated the flipped model into a pharmacy course, using videos outside of class while applying patient information to case studies in class and found significant grade increases as compared to a lecture-based model. The reasons for the differential outcomes between these findings are unknown. Still, research that shows benefits for academic performance through the flipped classroom is growing (Talley & Scherer, 2013; Winquist & Carlson, 2014).

The Flipped Classroom in Psychology

Though the use of the flipped classroom model has spanned a variety of disciplines, very few studies have focused on psychology courses (Sletten, 2015; Talley & Scherer, 2013). Talley and Sherer (2013) compared student exam scores from a flipped course on physiological psychology , which used online video lectures and in class practice test sessions, to scores from previous semesters of a traditional, lecture-based classroom. Researchers found that student exam scores were significantly higher in the flipped classroom than the traditional classroom. Though this study did show a positive correlation between the flipped classroom and exam scores, students did not participate in a purely flipped classroom. In this case, only one in four classes used the flipped classroom model.

Sletten (2015) incorporated the flipped classroom into an introductory psychology course and compared it to a traditional, lecture-based course. There were relationships discovered between student perceptions of the flipped model and the kinds of strategies students used to learn the material, however, student grades on exams were compared and no significant difference between the traditional classroom and flipped classroom were found. The sample size

was small in this case, with 45 students enrolled in the traditional classroom and 27 students enrolled in the flipped classroom. It is unclear how the flipped classroom was designed in this study and it is apparent more research is needed to determine the relationship between the flipped classroom and academic performance in psychology courses.

Critical Thinking

One of the benefits of the flipped classroom may be the promotion of critical thinking skills. Critical thinking has been the focus of higher education for many years (Bloom, 1956; Dewey, 1997; Halpern, 2002). Colleges and universities often incorporate critical thinking as a part of long-term goals and instructors report the skills as being of great importance in courses they teach. Still, though the term has been widely used, and the concept consistently promoted, defining critical thinking has been difficult. Definitions vary from reflective thinking (Dewey, 1997) to a focus on higher-order thinking (Bloom, 1956) to a "habit of mind" (Mulnix, 2012, p. 465). Dewey (1997), who was one of the first to identify the skills that eventually became known as critical thinking, identified the need for a more scientific attitude of metacognition that allows us to better understand where our thought originates and how best to use it to think better. Paul and Elder (2005) broadly state that critical thinking is the attempt at improving one's thinking through the process of analyzing and assessing it. Bensley and Murtagh (2012) suggested a multidimensional perspective to understanding critical thinking.

Many experts agree that critical thinking is not only a set of thinking skills but also a disposition related to reasoning (Clifford, Boufal, & Kurtz, 2004; Ennis, 1987; Halpern, 1998). Examples of critical thinking skills are skills for argument analysis, methodological reasoning, causal reasoning, and statistical reasoning (Bensley & Murtagh, 2012). Critical thinking

dispositions consist more of "the willingness to engage in effortful thinking and the tendency to be open- and fair-minded in evaluating claims, yet remain skeptical of unsubstantiated claims" (Bensley & Murtagh, 2012, p. 6). Additionally, it must be understood that critical thinkers self-regulate, using critical thinking to develop beliefs and often guide behavior (Halpern, 1998). With such a broad understanding of critical thinking applied to educational settings, confusion and disagreement on what definition to use are common. For a scientific study, a more focused definition becomes necessary. A simple definition of critical thinking is the comprehensive exploration of issues, ideas, artifacts, and events before an opinion or conclusion is accepted or formulated (Rhodes, 2010).

Psychological Critical Thinking

In addition to an overall definition of critical thinking, evidence has shown that psychology provides a unique set of critical thinking skills that differs from the general population (Bensley & Murtagh, 2012; Lawson, Jordan-Fleming, & Bodle, 2015; Williams, Oliver, & Stockdale, 2004). Psychological critical thinking (PCT) consists of specific reasoning skills such as statistical and methodological reasoning, which are different from conditional reasoning shown in students in the natural sciences or the humanities (Bensley & Murtagh, 2012). Lawson et al. (1999) defines PCT as the ability to "evaluate claims in a way that explicitly incorporates basic principles of psychological science" (p. 207). This concept has been supported by studies showing improvement in PCT for students enrolled in psychology courses over those in comparison groups (Penningroth, Despain, & Gray, 2007) as well as those compared to philosophy students critical thinking performance (Burke, Sears, Kraus, & Roberts-Cady, 2013). Lawson (2015) proffers seven distinct questions of PCT that he addressed using a

psychological critical thinking exam (PCTE). This exam presents scenarios that consisted of a problem that students, using critical thinking, must identify. These questions focus on seven areas of PCT. The PCTE has been shown to be a valid and reliable measure of PCT (Burke et al., 2013; Lawson et al., 2015; Penningroth et al., 2007; Williams, Oliver, Allin, Winn, & Booher, 2003). The importance of differentiating general critical thinking and PCT is well-established (Haw, 2011; Lawson et al., 2015; Williams et al., 2003).

Once defined, however, the question of how to promote this type of thinking in students remains. Halpern (2002) discusses the importance of using a skills approach to learning to think critically and Haw (2011) showed that direct instruction on the development of critical thinking skills has a significant effect in students' improvement in critical thinking. Lawson (1999) promoted the PCTE as a measure of specific PCT skills, which has been supported by multiple studies (Burke et al., 2013; Penningroth et al., 2007; Williams et al., 2003). Additionally, both active learning and collaborative learning strategies have been promoted as enhancing the development of critical thinking (Mulnix, 2012), with Van Gelder (2005) stating that like learning other skills, critical thinking skills must incorporate the opportunity for practice. Creating a learning environment that is active and collaborative as well as giving students the opportunity to practice important skills are vital for promoting critical thinking. The flipped classroom model emphasizes this kind of learning environment, which may facilitate the development of critical thinking in ways a lecture classroom does not.

The Learner-Centered Environment

The flipped classroom model may be a response to what Prensky (2001) coined the rise of "digital natives" (p. 1), a newer generation of students who were raised with computers and

the internet. This concept is even more relevant now with the introduction of smartphone technology as students now have technology with the capacity to access the internet at any moment. With this type of access, any student has the opportunity to direct their own learning. With the world's available knowledge now at students' fingertips, educators searched for new ways to engage students in learning experiences. The flipped classroom model represents an opportunity to utilize the benefits of recent technology to provide a structured opportunity to actively engage in knowledge construction, placing them at the center of the learning experience.

Many educational theorists, especially constructivist theorists, have focused on student perception of the learning environment. Dewey (1959) highlighted the importance of active involvement through a hands-on approach to learning. With his theory of the schema, Piaget (1955) suggested that learning was a component of the learner, rather than other factors such as the learning environment. Vygotsky (1978) established the necessity of scaffolding as an effort of the learner to achieve greater learning goals. The flipped classroom promotes learner-centered experience, allowing the learner to construct knowledge through interaction with content and teacher. The perception of this reality is important for a learning atmosphere that motivates learners to engage in the experience.

One theory that promotes the learner as the center of the learning environment is constructivism. Constructivism emerged through Dewey (1959), Piaget (1955), and Vygotsky (1978). In a constructive classroom, learning is what the learner does, rather than something that a teacher imposes on the learner (Sjøberg, 2007). Teachers view learners as autonomous thinkers and attempt to facilitate the transformation of content understanding through active learning experiences rather than more passive strategies (Brooks, 1999). In this way, knowledge is not waiting to be discovered but, through engagement with the environment and other learners,

actively constructed (Felder, 2012; Gordon, 2008; Neo & Neo, 2009; Nie & Lau, 2010; Prakash, 2010). Piaget's (2008) focus was that the means by which children gain knowledge is more important than the knowledge itself and Vygotsky (1978) conceptualized the zone of proximal development (ZPD) to describe the social context of this learning process, where teachers guide learners through the content and facilitate the attainment of learning goals. Learning through this kind of collaboration, interaction, and engagement are fundamental to constructivism and can lead to increased critical thinking such as problem-solving (Felder, 2012).

Active and collaborative learning have been found to be effective at inspiring students to reach deeper levels of understanding (Kilgo, Sheets, & Pascarella, 2015; Menchaca & Bekele, 2008; Merrill, 2008; Neo & Neo, 2009; Nie & Lau, 2010). This is why the American Association of Colleges and Universities (AAC&U) recommends the use of these strategies as high impact practices for instructors (Kilgo et al., 2015). Tynjala (1999) suggested that students in the constructivist learning environment acquire more diversified knowledge and are able to apply that knowledge to real life situations better than those in other environments. The learner develops new ideas and alters existing ideas when interacting with content and collaborating with other learners and the instructor (Felder, 2012; Prakash, 2010; Prince & Felder, 2006, 2007). Nowhere is this better conceptualized than through social constructivism.

The term, social constructivism, was first proposed by Berger and Luckman (1966) to describe the theory of knowledge that suggests human development is socially situated and knowledge is constructed through social interaction. Berger et al. (1966) based their theory on the sociology of knowledge developed by Schutz (1967), which explores the relationship between knowledge and social context as well as Durkheim's (1974) concepts of how social structures and social institutions develop. However, before these researchers began their work,

Vygotsky (1978) had developed many of the principles of social constructivism used today, including the zone of proximal development and the use of sociocultural context in education. His seminal work, *Mind and Society* (Vygotsky, 1978), was not published in English until the late 1970's, though it made a remarkable impact on the field. Vygotsky (1978) posited that knowledge is constructed through both individual processes and in social contexts. This idea was furthered by Glaser (1991), who suggesting that learners construct new knowledge on top of existing knowledge. He believed that the individual's inherent social nature must be considered in a discussion about cognition. The cultural context, he claimed, is fundamental to learners' cognitive activity. Gergen (1999) also furthers this idea, suggesting that the interaction within groups of learners facilitates their rethinking of their world through problem-solving is essential to social construction. Research has shown that cooperative learning can substantially increase learner achievement, thereby supporting the concept of social construction as a viable theory of the learning process (Hrynchak & Batty, 2012; Stockdale & Williams, 2004).

Self-Determination Theory

Self-determination theory (SDT) consists of three cognitive needs: competence, autonomy, and relatedness (Deci & Ryan, 1985a). In order to feel competent, students master knowledge, behavior, and skills important for success. Feelings of control and independence are satisfied by their need for autonomy. The need for relatedness is associated with belonging or a sense of connection to a social group within a given situation (Dillenbourg, 1999a; Pintrich, 2003). A flipped classroom that uses SDT is intended to meet students' needs of competence, autonomy, and relatedness.

Deci and Ryan (1985a) first promoted SDT as a motivational theory of human behavior. Motivation can be defined as "the willingness to attend and learn material in a development program" (Cole et al., 2004, p. 67). As such, the level of students' motivation will influence their level of effort and focus on a learning activity (Abeysekera & Dawson, 2015b). The flipped classroom requires students to engage and complete a portion of the course requirements outside of class, requiring students to be motivated to complete this work. Though most colleges and universities suggest two hours of studying for each class ("How much time should you devote to studying?," n. d.; "Surviving College," n. d.), actual student time spent studying, completing homework, and preparing for all classes averages 17 hours per week (National Survey of Student Engagement, 2014), a total significantly lower than expected for a student spending 15 hours in class per week. It is believed that a lack of student motivation is a fundamental reason for this discrepancy (Abeysekera & Dawson, 2015b).

Insomuch as the flipped classroom meets a student's cognitive needs, a student's orientation to motivation can be affected by a flipped classroom that incorporates SDT (Abeysekera & Dawson, 2015b). Additionally, orientation to motivation has been identified as a key factor in student performance and satisfaction (Guay, Ratelle, & Chanal, 2008; Ryan & Deci, 2000a). For instance, an external locus of control, motivated by the potential reward of a good grade if a student works hard, denotes an orientation to motivation that is primarily extrinsic. Ryan and Deci (2000b), however, promote the development of intrinsic motivation through the use of SDT. Additionally, Cole, Field, and Harris (2004) proffer that student effort within learning activities is directly related to their level of motivation for doing the work. A flipped classroom utilizing SDT can effectively improve student intrinsic motivation as long as it

contributes to a sense of competence, autonomy, and relatedness (Abeysekera & Dawson, 2015b).

SDT suggests that through meeting the needs of competence, autonomy, and relatedness, students can become more intrinsically motivated. Deci and Ryan (2008) define intrinsic motivation as behavior that is performed due to being inherently enjoyable or interesting. Within SDT, feelings of competence within a social context enhance intrinsic motivation for actions performed, though only when paired with satisfaction of the need for autonomy (Ryan & Deci, 2000a). Thus, when students choose to complete work out of class and are able to master the material, they will be more intrinsically motivated than students who were required to complete their work based upon an expected reward or impending punishment. Additionally, learning environments that incorporate a social component aimed at increasing students' feelings of relatedness are more likely to produce students who are intrinsically motivated (Niemiec & Ryan, 2009). In this way, SDT is able to meet the needs of competence, autonomy, and relatedness and, through them, foster the development of intrinsic motivation within the flipped classroom.

The development of intrinsic motivation is vital to the concept of student engagement; a primary motivation for the adoption of the flipped classroom (Bergmann & Sams, 2012). Student engagement represents the time and energy invested by students in educational activities combined with the effort institutions devote to creating effective learning environments (Kuh, 2003; Wolf-Wendel et al., 2009). This concept is important in understanding student performance (Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008). Instructors have traditionally created the learning environment through lecturing even though student engagement is not as strong in a lecture classroom (M. B. Gilboy, S. Heinerichs, & G. Pazzaglia, 2015). The lecture

requires minimal active engagement by students and does not promote student autonomy and competence (Gauci, Dantas, Williams, & Kemm, 2009; Huba & Freed, 2000). For an environment that promotes intrinsically motivated, engaged students, the flipped classroom must work to meet the needs of students through an active and collaborative process (M. B. Gilboy et al., 2015).

SDT is foundational for the flipped classroom due to its emphasis on the meeting of specific motivational needs that students have within a learning environment (Cole et al., 2004). By providing opportunities for feelings of competence, autonomy, and relatedness, instructors within the flipped classroom can assist in the development of intrinsic motivation, which is valuable for students that must complete a large portion of coursework outside of the classroom (Abeysekera & Dawson, 2015b). Intrinsically motivated students will be most likely to engage in the preparation necessary for face-to-face interactions to be most effective (Ryan & Deci, 2000a). In the classroom, the use of active and collaborative learning provides opportunities for increased student engagement, increased academic performance, and increased relatedness (Dillenbourg, 1999a; Johnson, Johnson, & Smith, 1998).

Active Learning

Bonwell and Eison (1991) define active learning as instructional activities involving students doing things and thinking about what they are doing. This has been applied by practitioners in a variety of ways, for example through discussion breaks during a lecture or actively working on classwork assignments (Prince, 2004). Due to the broad nature of its application, it is considered by some to be more of an approach to instruction rather than a separate model (Prince, 2004). Still, much evidence supports active learning as leading to an

increase in student learning (Bonwell & Eison, 1991). Andrews, Leonard, Colgrove, and Kalinowski (2011) recommend active learning for increasing student learning, and Berret (2012a) suggests active learning also is important for the flipped classroom. The active learning classroom promotes conscientiousness and concentration, qualities that have been associated with increased learning (Richardson et al., 2012). The flipped classroom works to incorporate active learning in face-to-face environments and has been shown to increase student engagement, especially when paired with collaborative learning (M. B. Gilboy et al., 2015).

Collaborative Learning

The flipped classroom creates opportunities for collaborative and cooperative learning in the classroom that strict lecturing does not. Dillenbourg (1999a) defines collaborative learning as "a situation in which two or more people learn or attempt to learn something together" (p. 1). As with active learning, collaborative learning provides a broad definition within which many variations have been included (Slavin, 1999). Johnson, Johnson, and Smith (1998) found that collaborative learning contributes to improved academic success as opposed to individual learning across the board. With an emphasis on active learning strategies in face-to-face classes, the opportunity for collaborative learning is prevalent. The flipped classroom that incorporates collaborative learning can provide energy and new opportunities for learning.

Chapter Summary

This chapter investigated several areas of research relevant to understanding learning, critical thinking, motivation, and the flipped classroom instructional model in order to serve as a foundation for this study. An overview of instructional strategies in higher education revealed

the changing nature of the field from the wide use of lecture-based models of instruction to a more active, collaborative form of instruction. Through the advent of online instruction and the development of blending online and face-to-face instruction, teaching in higher education has evolved and is continuing to evolve. The flipped classroom was identified as another step in this evolution. By moving the delivery of course content out of the classroom, students can be more actively engaged in constructing knowledge in the classroom with direct assistance from teachers and other students.

One area that the flipped classroom may address is the development of critical thinking skills. Critical thinking has long been a focus of higher education with a variety of attempts to increase the development of critical thinking in higher education students. Dewey (1959) famously identified the necessity for reflective thinking and Bloom (1956) worked at developing nomenclature to assist teachers in building learning experiences. However, there is some evidence to suggest that active, problem-based learning is more effective at developing these skills than traditional, lecture-based models of instruction. Considering the flipped classroom model utilizes these active and collaborative techniques, it is suggested that it might have more success at developing critical thinking skills than other models.

Theories that are used to support the flipped classroom model of instruction are the theories of constructivism, social constructivism, and self-determination theory. Developed by theorists such as Dewey (1959) and Piaget (1955), constructivism highlights learning experiences that emphasize learner-centered environments that facilitate students' active construction of knowledge (Wood, 2009; Zuckerman, 2004). Vygotsky (1978) built on this by advocating for a primary role of the teacher to scaffold learning through social constructivism. Through ZPD, the teacher could stretch student construction and facilitate greater gains in

knowledge acquisition. Though these theories provide a strong foundation for how the teacher creates a learning environment, the motivation of students to engage with the learning process is vital to finding success in the flipped classroom. Finding opportunities for control, relatedness, and autonomy are key to students determining for themselves how to engage with the teacher for learning. Through the use of intrinsic and extrinsic rewards as well as active and collaborative learning strategies, student motivation can be enhanced and learning increased.

The current study was designed to investigate how the flipped classroom model of instruction compares with more traditional, lecture-based models in facilitating key components of learning within higher education. These components consist of regular academic performance, the development of critical thinking skills necessary for success in and out of the higher education environment, and the overall experience students have within an instructional setting. These components were examined within the context of a university classroom to determine if there is any difference between the flipped classroom model and a traditional model of instruction.

CHAPTER III

METHODOLOGY

This study investigated potential differences between two distinct models of instruction: a traditional model and the flipped classroom model. Traditional models of instruction emphasize an instructor-focused delivery of content during class time and the assignment of out-of-class work for students to complete (Barr & Tagg, 1995). The flipped classroom model inverts the traditional model, moving the delivery of content to an online learning management system (LMS) and utilizing class time for active and collaborative learning strategies (Abeysekera & Dawson, 2015b; Dillenbourg, 1999b; Prince, 2004). Considering that university teaching is typically limited to the university semester, this study was conducted during one university semester with students enrolled in a university course at Southern Adventist University (SAU). Two sections of the course were offered at SAU in the fall 2018 semester.

Institutional Research Board (IRB) approval was sought from SAU as well as from the University of Tennessee at Chattanooga (UTC) before data collection began. All participants were university students of at least 18 years of age. Participants were students enrolled in each section based upon their semester schedule. Students were informed of the study only after they had been enrolled through a welcome statement located on the course site in the LMS (see Appendix A). Students were sent an informed consent form (see Appendix B) to their university email address. For students who declined to participate, no data was collected for research purposes. Students were expected to comply with all course requirements as they would for any other university course.

Population and Sample

The target population consisted of students enrolled in a General Psychology course at SAU, a midsized private faith-based liberal arts university in the southeast United States. The university enrolls approximately 3,500 students each fall semester and 2,300 students each spring semester. The average age of students at this college is 27 years. This study focused upon two sections of the psychology course, General Psychology, in the fall 2018 semester. The student population of this course consisted of primarily first-year students of various backgrounds and chosen academic majors. All students in each section were invited to participate, with only those that volunteered comprising the research sample.

Variables Analysis

A variables analysis was developed for this study (see Appendix C). There were three dependent variables and one independent variable. The three dependent variables were: (a) academic performance, (b) learner critical thinking, and (c) learner appreciation of the learning experience. The independent variable was the complete classroom model of instruction, either traditional or flipped. Extraneous variables were also collected in this study to better understand the sample's characteristics. These variables included age, gender, previous university experience, and ethnicity.

Instrumentation

A variety of instruments were used for the collection of data in this study: (a) an objective survey, (b) four researcher-created summative tests, (c) the psychological critical thinking exam (PCTE), and (d) qualitative interview questions. The objective survey was administered in person by the instructor during class periods using paper and a pencil, with students responding

directly on the survey instrument. Summative tests were administered using paper booklets with students answering each question using a pencil on a corresponding scantron sheet. The PCTE was administered through the online LMS available at the university. The qualitative interview questions were administered by the researcher through individual interviews after the semester ended.

Perception and Evaluation Survey

The researcher administered a survey (see Appendix D) created to measure student perception and evaluation of the learning environment. The items on the instrument were developed to address two of the research questions of the final study: (a) Is there a relationship between student perception of the learning environment and student academic performance within the flipped classroom learning environment as well as the traditional classroom learning environment? and, (b) Is there a difference in participants' evaluation of the flipped classroom model of instruction as compared to the lecture model?

The instrument was divided into four sections. The first section included closed-ended unordered items regarding demographic information such as gender, age, previous college experience, and ethnicity. Closed-ended questions are recommended when a questionnaire requests respondents to rate "items from strongly disagree to strongly agree" (Gliner, Morgan, & Leech, 2011, p. 185). Each item was included to determine either the category within which each participant falls such as male or female or specific ethnic groups, or closed-ended questions with ordered choices (Gliner et al., 2011). The second section included 12 closed-ended questions regarding student judgment and valuation of the instruction methods used in the course as well as participant judgment of how well the instruction methods contributed to learning. The

third section also asked closed-ended questions regarding student judgment and valuation of instruction methods used in the course in order to improve internal consistency of the instrument. The fourth section included eight questions related to participant perception of how conducive the learning environment was to participant agency in the learning process.

The researcher determined the feasibility of the survey instrument through a verification process before the final study began by submitting the survey to a sample of psychology majors and psychology graduates not involved in the study to assist in determining that the questions were clear and had sufficient content validity ("Questionnaire Design," 2018). During the study, the instrument was administered under both conditions to determine student reported impressions of how well the flipped classroom model of instruction compared to the traditional model of instruction.

Summative Tests

Four researcher-created summative tests (see Appendix E) were created to measure student academic performance. The multiple-choice items on each test were developed to address research question two: Is there a difference in academic performance for students undergoing the flipped classroom model of instruction as compared to the traditional model of instruction? The tests were developed using a table of specifications (TOS) to align test questions to the learning objectives of the course and to ensure content validity (Gronlund, 1998). The instructor of the course was asked to review the TOS to make sure that each question was aligned appropriately with each learning objective. Once completed, the tests were submitted to a sample of psychology majors and psychology graduates to assist in determining that the questions were clear. A sample of participants for this process was requested from the

psychology department of the university, and reviews were completed before the beginning of the study.

General Psychology is a broad course covering many psychological concepts over the semester. For this reason, the summative tests were administered at the end of distinct content sections throughout the semester. This was implemented in order to reduce the amount of information students needed to retain for the tests. The concepts covered within each section were as follows:

- Content Section 1—Psychological science, neuroscience, and human development
- Content Section 2—Principles of learning and memory, cognition and intelligence, and sensory and perception
- Content Section 3—States of consciousness, emotion and motivation, and personality
- Content Section 4—Well-being and stress, psychological disorders, and social psychology

Psychological Critical Thinking Exam

To measure critical thinking among students, the PCTE was selected (see Appendix F). The PCTE is an instrument that was designed to measure critical thinking specific to the field of psychology. Psychological critical thinking has been defined as the ability to "evaluate claims in a way that explicitly incorporates basic principles of psychological science" (Lawson et al., 1999, p. 207). The PCTE consists of 14 statements related to psychological phenomena that violate various scientific principles related to psychology (Lawson et al., 2015). Students were

asked to identify the problem with each claim. Critical thinking was assessed from scoring their written responses. Lawson (2015) tested the PCTE and found the split-half reliability (n= 98, r = .88) as well as the test-retest reliability (n = 42, r = .90) to be quite good. The instrument was administered under both conditions to determine any difference in critical thinking skill development between the flipped classroom model of instruction and the traditional model of instruction.

Qualitative Interview Questions

Interview questions were developed by the researcher to measure student impressions and experience within each learning environment. Due to the potential of the recency effect (Gliner et al., 2011), interviews were conducted with a small sample from each class using a series of eight open-ended questions (see Appendix G). The series of interview questions were developed to address two of the research questions of the final study: (a) Is there a relationship between student perception of the learning environment and student academic performance within the flipped classroom learning environment as well as the traditional classroom learning environment? and, (b) Is there a difference in participants' evaluation of the flipped classroom model of instruction as compared to the lecture model? The qualitative information was intended to complement the quantitative information gathered through the survey by asking questions related to the above research questions. The questions were open-ended so as to allow participants the opportunity to elaborate on their experiences within the two instructional models.

Research Design and Implementation

This mixed-methods study was designed as a within-subjects quasi-experiment (Gliner et al., 2011) to test the relationship between the flipped classroom model of instruction and student academic performance and critical thinking in an introductory psychology course at a private, faith-based, liberal arts university. This investigation was accomplished by comparing the flipped classroom model of instruction with a traditional classroom model of instruction. Student perception of the learning environment and evaluation of the effectiveness of the flipped model of instruction were additional variables studied.

Fidelity of the treatment was vital to the successful implementation of the research design. A single instructor instructed in both the flipped classroom and traditional classroom model of instruction using criteria provided in a training of pedagogical techniques. These criteria were explicitly defined. The flipped classroom model of instruction, though widely used, varies greatly in substance and implementation (Bishop & Verleger, 2013b). Likewise, a traditional model of instruction is no longer strictly a classic lecture (Barr & Tagg, 1995; Isaacs, 1994; Reber, Downs, & Peterson Nelson, 2017b). Often, college and university instructors incorporate student questions, discussion, and illustrative activities as a part of class periods, and these can be unscheduled and spontaneous experiences. For these reasons, and to clearly differentiate between the two models as they appear in this study, care was taken to contrast instructor behaviors that constitute a flipped classroom model of instruction with those behaviors that constitute a traditional model.

To ensure fidelity to each model of instruction, the researcher observed three classes taught by the instructor of record before the study began. This helped to determine the instructor of record's common teaching strategies for a traditional model of instruction. Based upon these

observations, the researcher adapted a background information sheet (see Appendix H) for the control (traditional classroom model), emphasizing those strategies that did not conflict with current understanding of the flipped classroom model of instruction (Abeysekera & Dawson, 2015b). Traditional strategies included pedagogical approaches such as making sure that at least 75% of class time was used for content delivery through a lecture or other means; the use of videos to introduce topics or deliver content, the use of discussions (both small group and large group) that are limited in time and intended to facilitate understanding of delivered content or to introduce a topic; the use of PowerPoint, Prezi, or other visual media to illustrate delivered content, engaging activities to be used during class periods to illustrate a concept or introduce a topic; and assignments to be completed outside of class.

In similar fashion, a background information sheet (see Appendix I) for the treatment (flipped classroom model) was developed by the researcher. Strategies for the flipped classroom were based upon current research on constructivism (Felder, 2012), active learning (Freeman et al., 2014a), and collaborative learning (De Hei, Strijbos, Sjoer, & Admiraal, 2015). Flipped classroom strategies included pedagogical approaches such as making sure at least 75% of class time was used for active learning or in-depth discussion (e.g. posed questions for analysis); the use of videos to introduce a topic for discussion; questions for discussion focused upon application, evaluation, and analysis of content previously delivered through the LMS; the instructor resisting giving direct answers; the instructor asking questions to motivate students to think in deeper or more critical ways (e.g. Socratic method); the use of PowerPoint, Prezi, or other visual media, specifically to provide opportunities for analysis or to communicate expectations for activities or assignments; the use of engaging activities used during class periods, specifically to create content, analyze issues, evaluate positions, and apply

understanding of previously reviewed content; and class assignments to be completed during class times.

Before the study began, the researcher developed a process for ensuring fidelity to the design of the two instruction models. First, the researcher facilitated the creation of a video used for training the instructor of record on the two models used in this study. This video consisted of teaching scenarios used during class in the flipped classroom model. In order to limit researcher bias, the videos incorporated an actor interacting with students while illustrating the various techniques. The researcher created a storyboard outlining each video segment and a script for the actor to follow (see Appendix J). All training materials including the script and videos were reviewed by the dissertation committee. Next, the video was presented to the course instructor of record and she was asked to complete a short assessment created by the researcher about the techniques demonstrated. This assessment was given to the researcher and stored in a locked cabinet, with the researcher owning the only key.

After the instructor was trained, four observers were recruited from student workers within the Psychology Department at SAU as well as students from outside the Psychology Department and trained to acceptable standards or agreement in the use of the checklists in order to effectively monitor class sessions. As with the instructor training, observers watched the training video and completed an assessment about the techniques demonstrated. These assessments were gathered and stored by the researcher. Agreement checks were conducted for each observer to ensure they were not biased. Next, the researcher developed checklists of typical instructor behaviors used in observations of the instructor during class periods, one for the treatment and one for the control. These checklists were partially derived from Quality Matters (2018) guidelines to ensure quality.

Once observers were trained and given the developed checklists, the researcher created a schedule for when observations were to be completed each week. Due to potential issues of observer availability, observers observed a minimum of 50% of class periods within each condition throughout the semester. Next, using the checklist, observers compared the pedagogical strategies observed in the classroom, consisting of both instructor behavior and pedagogical design, to the expected behaviors for each model. Additionally, observers used duration recording to determine that a minimum of 75% of each class was used for the appropriate instructional model (Mudford, Martin, Hui, & Taylor, 2009). After this comparison, the researcher scheduled weekly meetings with the observers to gather completed checklists, answer relevant questions for future observations, and address any discrepancies in observed behaviors. Additional training was scheduled with observers at the midpoint of the semester to rectify any concerns over observer drift. Lastly, due to only one course instructor teaching in both the flipped classroom and traditional classroom models, weekly meetings were scheduled with the instructor to address any instructor questions, develop plans for future classes, and address any concerns over instructor adherence to the pedagogical strategies of each instructional model.

Implementation of Instructional Models

All participants interacted with the content of the course through an online management system provided by the university. Students were directed to read the online textbook, which was available through the LMS. A regular term schedule of topics and due dates was provided for the students to minimize confusion and cognitive overload (Clark, Nguyen, & Sweller, 2011). To ensure a similar amount of rigor for both models, students had identical expectations for class

attendance, reading the textbook, and participating in course activities and assessments for both models as directed by the instructor. The syllabi for both course sections was (see Appendix K) reviewed by the dissertation committee.

In the traditional classroom design (control), students were expected to attend class to listen to instructional lectures, participate in short discussions and activities, and take notes on what was provided. The instructor utilized a combination of lecture, short discussion, question and answering time, and illustrative activities to deliver course content. Students were assigned reading and homework assignments to complete outside of class to be handed in at designated due dates. Quizzes were used as summative assessments for class and reading the textbook. The instructor was available to answer questions at designated times between classes, during regular office hours, by appointment, and through email communication.

In the flipped classroom design (treatment), students were directed to interact with course content through reading the textbook and watching specially created videos over course concepts before attending class. Content delivery was primarily removed from class and replaced with discussions, collaborative learning activities, and active learning activities over those concepts introduced in the textbook and videos. Discussion structure varied from small group discussions to whole group discussions providing the opportunity for engagement from every student within the classroom. Classroom activities focused on the specified learning outcomes and consisted of a variety of experiences from large group activities to group assignments to individual, introspective activities. Students were also expected to attend class to participate in class activities. The instructor was available to answer questions during class, at designated times between classes, during regular office hours, by appointment, and through email communication.

Summative tests were conducted in-class at the end of each content section of the course, gathering how well students met each of the learning outcomes for that course segment.

Data Collection Procedures

A nonrandomized sample of students enrolled in a General Psychology course in the fall term at SAU were studied for the majority of the study. A randomized sample was selected from the larger sample for qualitative investigation of student perception of the learning environment. This sample was randomized from each treatment type to ensure a minimum number of participants from each group. General Psychology is a course required for all psychology majors at the university as well as many health and prehealth majors such as pre-med, nursing, and pre-physical therapy. The length of the university semester is typically 16 weeks. However, due to preliminary set up necessary for the class, various breaks within the university calendar, and the last week of the semester reserved for final exams, the actual instruction time available for the intervention was 14 weeks. Therefore, the treatment period was divided into two seven-week segments with data collection at the end of each treatment period. As shown in Table 3.1, each group alternated between traditional delivery of instruction and the intervention, changing for each treatment period. Group A began with the traditional delivery and Group B began with the intervention. After seven weeks, the delivery mode for each group switched until both groups participated in the traditional classroom model and the flipped classroom model.

Table 3.1 Variations of Treatment Period

Group	Treatment Period 1	Treatment Period 2
A	Traditional	Flipped
B	Flipped	Traditional

This counterbalancing process was intended to address differences in effect that could potentially arise due to the order in which the instructional models were experienced by participants. Due to each participant experiencing both conditions, a within subjects design was implemented. In order to address each research question, scores from the respective instruments used were pooled per condition to allow for comparison between conditions. A more specific explanation of the data collection procedures for each research question follows.

For quantitative analysis of research question one (Is there a relationship between student perception of the learning environment and student academic performance within the flipped classroom learning environment as well as the traditional classroom learning environment?), the researcher utilized a previously created survey. This survey was implemented at the end of each treatment period as a paper and pencil test. Student identifying information was not gathered. The results of each administration of the survey were pooled per condition and compared to summative tests designed to measure student academic performance that were administered within the corresponding treatment period using the Statistical Package for the Social Sciences (SPSS).

For research question two (Is there a difference in academic performance for students undergoing the flipped classroom model of instruction as compared to the traditional model of

instruction?), summative tests were created to be administered at the end of each content section with a total of four tests administered for each group throughout the semester. The tests were identical for each group within each content area. Once each content section ended, the summative tests were administered in class through a pencil and paper test utilizing scantron sheets corresponding with test questions. It was a requirement for these tests to be completed for students to move on to the next section of the course. The scores from these tests were available to the instructor of record, and scores were included within the course grade. The scores of each summative test were pooled for the first condition and compared to the pooled scores from the second condition using SPSS.

For research question three (Is there a difference in critical thinking for students undergoing the flipped classroom model of instruction as compared to the traditional model of instruction?), the PCTE was administered. The PCTE was administered once at the end of the first treatment period and once at the end of the second treatment period for each group. Scores from the PCTE were pooled per condition so that the pooled scores from the traditional classroom model could be compared to the pooled scores from the flipped classroom model using SPSS.

The PCTE is a short essay exam that students completed through the LMS. For this reason, students' responses needed to be coded using the following scale: 0 points (no problem identified), 1 point (a problem recognized but misidentified), 2 points (identified main problem, but also mentioned less relevant problems), and 3 points (identified only the main problem) (Williams et al., 2003). This allowed for a total score of 0-21 points for each administration of the exam. Scores were not visible to the instructor of record nor were these scores included in the course grade. Two raters coded students' responses based on these criteria. To ensure

interrater reliability, the raters received training that involved coding examples of student responses from the PCTE. Afterward, the raters were asked to reach consensus on an arbitrary sample of 12 tests from the current study prior to each rater coding half of the remaining tests.

For the quantitative portion of research question four (Is there a difference in participants' evaluation of the flipped classroom model of instruction as compared to the traditional model of instruction?), the survey was used to gather data on student evaluation of the instructional design of the course. This survey was implemented at the end of each treatment period as a paper and pencil test. Scores from the survey were pooled per condition so that the pooled scores from the traditional classroom model could be compared to the pooled scores from the flipped classroom model using SPSS.

Qualitative interview questions were used to gather data through student interviews collected by the researcher after the semester ended to address research questions one (Is there a relationship between student perception and student academic performance within the flipped classroom learning environment?) and four (Is there a difference in participants' evaluation of the flipped classroom model of instruction as compared to the traditional model of instruction?). At the end of the semester, a random sample of 15 students per group was identified and a list created. In random order, the researcher requested that each individual participate until at least ten individuals agreed. If more than five individuals refuse to participate per condition, the instructor identified an additional random sample of ten individuals from each group until the required ten were completed. The researcher conducted all interviews. Interviews were collected through researcher notes and the use of an audio recording device. An interview protocol was designed for use during the unstructured interviews, which included the gathering

of necessary information regarding date and time of the interview, the interviewee's name, and the list of interview questions. Data were collected using the following eight questions:

1. What was your experience in the classroom like?
2. How did you see your role in the learning environment?
3. What did you believe were your responsibilities?
4. What did you perceive was the role of the instructor in the class?
5. How did this experience compare to other classes you have taken?
6. What about this experience do you think benefitted your learning?
7. What about your experience do you think hurt your learning?
8. In your opinion, how does the flipped classroom model compare to the traditional model?

Chapter Summary

This study investigated any differences in student critical thinking, academic performance, and perception and evaluation of teaching strategies through two models of instruction, the traditional model and the flipped classroom model. The research sample was comprised of volunteers from two sections of General Psychology at SAU in the fall 2018 semester. The instruments used for assessing research questions were a survey, summative tests, a critical thinking exam, and qualitative interview questions. To ensure fidelity to each model of instruction, the researcher developed a process for training the instructor of record in the two models as well as observers who recorded instructor behavior during class sessions. The researcher continued to meet with both the instructor and observers throughout the semester for accountability to the models and to address any issues that arose.

The research methods used for each research question varied based upon the data being gathered. As a within-subjects design, each group of participants served as its own control. For research question #1, student perception of the learning environment was gathered using the student survey administered at the end of each treatment period and compared to student performance data as measured by summative examinations. For research question #2, summative tests were administered at the end of each of the treatment periods. For research question #3, the PCTE was administered at the end of each treatment period. For research question #4, a student survey on students' evaluation of the instructional design of the course was implemented at the end of each treatment period. Data gathered from the different instruments were pooled per condition to allow for comparison between conditions.

CHAPTER IV

RESULTS AND ANALYSIS

This study examined the relationship between models of college instruction and four distinct areas: student perception of the learning environment, academic performance, critical thinking, and evaluation of the learning environment. Specifically, this study was designed to determine whether there was a difference between a traditional model of instruction and the flipped classroom model of instruction. The study utilized a repeated-measures design requiring the measurement of different variables of the same participants at different times. For this reason, the dependent *t*-test (paired samples) was the analysis used to measure differences in performance on three of the four variables (academic performance, critical thinking, and evaluation of the learning environment). For the variable of perception of the learning environment, the design required the determination of whether there was a relationship between this variable and student academic performance. For this reason, Pearson's correlation was used.

Data Screening

The collection of data from the demographic information of the survey, the completion of the summative assessments, and the PCTE followed the methodology as described in Chapter 3. A total of 62 students completed both administrations of the perception and evaluation survey. A total of 71 students completed all four of the summative assessments. A total of 53 students completed the first administration of the PCTE, and 53 students completed the second

administration of the PCTE. One student did not complete all of the questions in the survey at one of the administrations, and those data were not used in the analysis. Six students did not respond to all of the scenarios of the PCTE, and those data also were not used in the analysis. Of those who took all administrations of the summative exams, all students completed each question in the exams. Any loss of participants from the first administration to second administration of either the survey or the PCTE was likely the result of students voluntarily electing not to complete the posttest of each instrument, dropping from the General Psychology class, or withdrawing from the university.

Sample Characteristics

Participants from the SAU student body generated 62 individuals who completed the perception and evaluation survey. Demographics collected included number of university hours completed, age, gender, and ethnicity. Table 4.1 indicates that the largest proportion of the 62 students who took the survey were 18-20 years old, with a total of 46. Of the remaining students, thirteen were 21-24 years old, and two students were 25-29 years old. There was one student who did not answer the age demographic question.

Table 4.1 Participant Age

Age	Frequency	Percent	Cumulative
18-20	47	75.8	75.8
21-24	13	20.9	96.8
25-29	2	3.2	100
Total	62	100	

Table 4.2 indicates that 12.7% of participants had earned less than 12 hours of university credit before completing the survey. The majority of students (60.3%) had earned between 12 and 47 hours of credit, with 27% earning 48 hours of credit or more. This reveals that the majority of participants were freshman and sophomore level students.

Table 4.2 University Credit Hours

Amount of Credit	Frequency	Percent	Cumulative Percent
Less than 12 hours	8	12.7	12.7
12 hours	14	22.2	34.9
24 hours	10	15.9	50.8
36 hours	14	22.2	73
48 hours	9	14.3	87.3
60 or more hours	8	12.7	100
Total	63	100	

Table 4.3 indicates that 35.5% of students identified as male, 62.9% identified as female, and 1.6% identified as other in reference to gender. The percentage is higher than the overall female population at SAU, according to the College Navigator (Statistics, 2017) that shows 58% of undergraduate students identify as female. There was one student who did not answer the gender demographic question.

Table 4.3 Gender

Gender	Frequency	Percentage	Cumulative Percent
Male	22	35.5	35.5
Female	39	62.9	98.4
Other	1	1.6	100
Total	62	100	

Table 4.4 indicates that 54% of participants were of White/Caucasian decent, the largest ethnic group represented, which is higher than the reported percentage of White students at SAU (47%), according to College Navigator (Statistics, 2017). The remaining participants identified themselves as Asian (20.6%), higher than the overall SAU population of 11%, Hispanic/Latino (11.1%), lower than the overall SAU population of 22%, Black/African American (7.9%), Hawaiian Native/Other Pacific Islander (1.6%), or other (4.8%).

Table 4.4 Ethnicity

Ethnicity	Frequency	Percent	Cumulative Percent
American Indian/Alaskan Native	0	0	0
Hawaiian Native/Other Pacific Islander	1	1.6	1.6
White/Caucasian	34	54	55.6
Hispanic/Latino	7	11.1	66.7

Black/African American	5	7.9	74.6
Asian	13	20.6	95.2
Other	3	4.8	100
Total	63	100	

Summary of Sample Characteristics

Based on survey results of the demographics of the sample, the majority of students participating in the study were white, female, aged 18-20, and had earned fewer than 48 hours of university credit. There were a number of differences between the participant sample and the College Navigator's (Statistics, 2017) report of overall SAU enrollment. Overall SAU enrollment shows only 58% of the population as female compared to the sample's 63%. Additionally, the ethnic demographic data for the participant sample showed a larger number of White and Asian students and a smaller number of Hispanic/Latino students than the overall SAU population.

Analysis Assumptions

For research question #1 (Is there a relationship between student perception of the learning environment and student academic performance within the flipped classroom learning environment as well as the traditional classroom learning environment?), Pearson's correlation was used. Pearson's correlation requires meeting three basic assumptions: data are normally distributed, relationships must be linear, and there are no outliers (Gravetter & Wallnau, 2016). The first assumption was met based upon the Shapiro-Wilk test results ($p > .05$). The second assumption was met based upon scatterplots for both the survey data and the summative test

data. There were no outliers revealed by the data, therefore the third assumption for the Pearson's correlation was met.

For research question #2 (Is there a difference in academic performance for students in the flipped classroom model of instruction as compared to the traditional model of instruction?), research question #3 (Is there a difference in critical thinking for students in the flipped classroom model of instruction as compared to the traditional model of instruction?), and research question #4 (Is there a difference in participants' evaluation of the flipped classroom model of instruction as compared to the traditional model of instruction?), the paired samples *t*-test was used. With a paired samples *t*-test, two basic assumptions are expected to be met (Gravetter & Wallnau, 2016). The first assumption is that observations within each condition must be independent of one another. Within each treatment condition, scores must be obtained from different individuals and not subject to influence by any other individual. The second assumption is that there must be normality in the dependent variable(s) between the two related groups (Gravetter & Wallnau, 2016).

In this study, the first assumption was met due to the participants being administered each measure at the same time for a college class. Summative tests were administered during classes and participants were not allowed to interact with one another. The PCTE was administered through a password protected online portal that each student had restricted access. The survey was administered during classes, and participants were not allowed to interact with one another. To assess normality of the data, the Shapiro-Wilk test is preferred for samples of less than 50 (Field, 2009). According to the Shapiro-Wilk test, each set of data was normally distributed. Therefore, the second assumption was also met for all comparisons.

For research question #2, an independent *t*-test was also run. There are three assumptions for the independent *t*-test: independence of the observations, the populations are normally distributed, and the populations must have equal variances (Gravetter & Wallnau, 2016). The first assumption is that the observations within each sample must be independent. Considering that the two samples were taken from two separate and independent groups, this assumption is met. The second assumption is that the populations from which the samples are taken must be normal. According to the Shapiro-Wilk test, both populations were considered normal ($p > .05$), therefore, this assumption was met. The third assumption for the independent *t*-test is that the two populations must have equal variances. According to Levene's test, the variances of both groups were homogenous meaning that this third assumption is met.

Quantitative Data Analysis

The quantitative data that were collected were analyzed differently from the collected qualitative data. For the quantitative data collected for each research question, various tests utilizing SPSS were conducted. For qualitative analysis, collected data were entered into a database and organized using QDA Miner software. Detailed descriptions of the quantitative data analysis for each research question are included below.

Participant Perception and Academic Performance

Research question #1 (Is there a relationship between student perception of the learning environment and student academic performance within the flipped classroom learning environment as well as the traditional classroom learning environment?) was analyzed using Pearson's correlation. The analysis measured the relationship between student perception of the

learning environment, as measured by student survey data gathered at the end of each treatment period, and student performance, as measured by summative examinations administered at the end of each content section.

Group A received the traditional model of instruction in Treatment Period 1 and the flipped classroom model of instruction in Treatment Period 2. Table 4.5 shows the correlational analysis of participant perception and academic performance. Pearson's correlation (r = -.203) showed a slight negative relationship between the variables but with no statistically significant results (p > .05). This indicates no apparent relationship between participant perception of the learning environment and academic performance for Group A.

Table 4.5 Group A Participant Perception-Academic Performance Correlation

Correlations			
		Perception	Academic Performance
Perception	Pearson's Correlation	1	-.203
	Sig.		.250
	N	70	34
Academic Performance	Pearson's Correlation	-.203	1
	Sig.	.250	
	N	34	34

Group B received the flipped classroom model of instruction in Treatment Period 1 and the traditional model of instruction in Treatment Period 2. Table 4.6 shows the correlational analysis of participant perception and academic performance. Pearson's correlation (r = -.038)

shows a slight negative relationship between the variables but with no statistically significant results ($p > .05$). This shows no apparent relationship between participant perception of the learning environment and academic performance for Group B.

Table 4.6 Group B Participant Perception-Academic Performance Correlation

Correlations			
		Perception	Academic Performance
Perception	Pearson's Correlation	1	-.038
	Sig.		.826
	N	66	37
Academic Performance	Pearson's Correlation	-.038	1
	Sig.	.826	
	N	37	37

Academic Performance

Research question #2 (Is there a difference in academic performance for students in the flipped classroom model of instruction as compared to the traditional model of instruction?) was analyzed using a paired samples *t*-test. Each group (Group A and Group B) received the intervention (flipped classroom) during two content areas and the control (lecture classroom) during two content areas. This resulted in two summative tests per treatment period. Treatments were counterbalanced so that Group A received the control first and then the intervention; Group B received the intervention first and then the control. Data gathered were pooled per condition and evaluated using a dependent *t*-test.

Difference between models of instruction

Group A received the traditional model of instruction in Treatment Period 1 and the flipped classroom model of instruction in Treatment Period 2. Table 4.7 shows the results of the paired samples *t*-test analysis. For the 34 subjects, the mean for Treatment Period 1 ($M = 76.74$) was greater than the mean for Treatment Period 2 ($M = 71.68$) at the $p < .001$ level. This indicates a statistically significant difference between the variables. This result indicates that participants performed better under the traditional model of instruction than under the flipped classroom model of instruction.

Table 4.7 Group A Academic Performance Paired Samples *t*-Test

Paired Samples Test						
Mean	Std. Deviation	S. E. of Mean	95% Conf. Interval	*t*-value	*df*	2-tailed Sig.
5.06	6.434	1.10	2.82 7.31	4.591	33	p < .001

Group B received the flipped classroom model of instruction in Treatment Period 1 and the traditional model of instruction in Treatment Period 2. Table 4.8 shows the results of the paired samples *t*-test analysis. For the 37 subjects, the mean for Treatment Period 1 ($M = 79.12$) was slightly greater than the mean for Treatment Period 2 ($M = 78.41$). The results did not show statistical significance ($p > .05$). This indicates no statistically significant difference existed between the variables.

Table 4.8 Group B Academic Performance Paired Samples *t*-Test

Paired Samples Test						
Mean	Std. Deviation	S. E. of Mean	95% Conf. Interval	*t*-value	*df*	2-tailed Sig.
.704	8.782	1.44	2.224 3.632	.488	36	p = .629

Comparison of difference scores

Due to the repeated-measures design of the study, a paired samples *t*-test was completed. However, the results from this test differed between groups. Though Group A showed a significant difference in scores between the two models of instruction, with participants performing better under the traditional model, Group B showed no significant difference between the models of instruction. Due to these different results in the two groups based upon the paired samples *t*-test, the researcher determined that comparing the difference scores of the summative tests for each group would be valuable in understanding these results. For this analysis, the difference between the means of the pooled scores for Treatment Period 1 and the pooled scores for Treatment Period 2 in Group A was compared to the same data from Group B using an independent samples *t*-test. Table 4.9 provides the results from this analysis indicating that the 34 participants in Group A had a difference score of 5.06, the 37 participants in Group B had a difference score of .70, and the means differed significantly at the $p < .05$ (note: $p = .021$). Though the analysis shows a significant difference of the difference scores between groups, due to the inability to equate the groups using a pretest, the scores for the summative tests could be the result of random group differences.

Table 4.9 Independent Samples *t*-Test

Variances	Levene's Test for Equality of Variances		*t*-Values	*df*	Sig. (2-tailed)	Mean Difference	St. Error Difference	95% Confidence Interval of the Difference	
	F	Sig.							
Equal	2.155	.147	-2.370	69	.021	-4.362	1.840	-8.034	-.689
Unequal			-2.400	65.835	.019	-4.362	1.817	-7.990.	-.733

Critical Thinking

Research question #3 (Is there a difference in critical thinking for students in the flipped classroom model of instruction as compared to the traditional model of instruction?), the PCTE was administered at the end of each treatment period. Data gathered were evaluated using a paired samples *t*-test. Levene's test was used to ascertain homogeneity of variance (Field, 2009).

Group A received the flipped classroom model of instruction in Treatment Period 1 and the traditional model of instruction in Treatment Period 2. Table 4.10 shows the results of the paired samples *t*-test analysis. For the 25 subjects, the mean for Treatment Period 1 ($M = 8.40$) was slightly lower than the mean for Treatment Period 2 ($M = 9.40$). The results did not show statistical significance, however ($p > .05$). This indicates no statistically significant difference existed between the variables.

Table 4.10 Group A Critical Thinking Paired Samples *t*-Test

Paired Samples Test						
Mean	Std. Deviation	S. E. of Mean	95% Conf. Interval	*t*-value	*df*	2-tailed Sig.
1.00	2.692	.538	2.111 .111	-1.857	24	$p = .076$

Group B received the flipped classroom model of instruction in Treatment Period 1 and the traditional model of instruction in Treatment Period 2. Table 4.11 shows the results of the paired samples *t*-test analysis. For the 27 subjects, the mean for Treatment Period 1 ($M = 8.28$) was slightly greater than the mean for Treatment Period 2 ($M = 7.85$). The results did not show statistical significance ($p > .05$). This indicates no statistically significant difference existed between the variables.

Table 4.11 Group B Critical Thinking Paired Samples *t*-Test

Paired Samples Test						
Mean	Std. Deviation	S. E. of Mean	95% Conf. Interval	*t*-value	*df*	2-tailed Sig.
.428	3.190	.602	-.808 1.665	.711	27	$p = .483$

Participant Evaluation

For research question #4 (Is there a difference in participants' evaluation of the flipped classroom model of instruction as compared to the traditional model of instruction?), a survey was administered at the end of each treatment period. Data were compared using a paired samples *t*-test.

Group A received the flipped classroom model of instruction in Treatment Period 1 and the traditional model of instruction in Treatment Period 2. Table 4.12 shows the results of the paired samples *t*-test analysis. For the 37 subjects, the mean for Treatment Period 1 (M = 13.75) was slightly lower than the mean for Treatment Period 2 (M = 14.03). The results did not show statistical significance ($p > .05$). This indicates no statistically significant difference existed between the variables.

Table 4.12 Group A Participant Evaluation Paired Samples *t*-Test

Paired Samples Test						
Mean	Std. Deviation	S. E. of Mean	95% Conf. Interval	*t*-value	*df*	2-tailed Sig.
-.272	3.931	.684	-1.666 1.121	-.399	32	$p = .693$

Group B received the flipped classroom model of instruction in Treatment Period 1 and the traditional model of instruction in Treatment Period 2. Table 4.13 shows the results of the paired samples *t*-test analysis. For the 37 subjects, the mean for Treatment Period 1 (M = 12.76) was slightly lower than the mean for Treatment Period 2 (M = 13.63). The results did not show statistical significance ($p > .05$). This indicates no statistically significant difference existed between the variables.

Table 4.13 Group B Participant Evaluation Paired Samples *t*-Test

Paired Samples Test						
Mean	Std. Deviation	S. E. of Mean	95% Conf. Interval	*t*-value	*df*	2-tailed Sig.
-.866	3.910	.713	-2.326 .593	-1.214	29	$p = .235$

Summary of Quantitative Data Analysis

Analysis on collected data was completed for each research question. For research question #1, Pearson's correlation was used and no significant relationship was found between participant perception and academic performance. For research question #2, the paired samples *t*-test revealed a significant difference in academic performance for Group A, but no significant difference for Group B. Due to these results, an independent *t*-test was conducted on the difference scores for both groups, and a significant difference was found. For research questions #3 and #4, the paired samples *t*-test revealed no significant difference.

Qualitative Interviews with Individual Participants

To understand the full experience of participants in this study, individual interviews were conducted to measure student impressions and experience within each learning environment. The interview questions were developed to address research question #1 (Is there a relationship between student perception of the learning environment and student academic performance within the flipped classroom learning environment as well as the traditional classroom learning environment?), and research question #4 (Is there a difference in participants' evaluation of the flipped classroom model of instruction as compared to the lecture model?). A total of eleven participants were interviewed, five from Group A and six from Group B. Participants who

agreed to be interviewed were then contacted by email about scheduling a time to meet the interviewer. Three students scheduled time during finals week of the semester, and the other eight participants scheduled time after the winter break. The researcher conducted all interviews, which were recorded using an audio recording device. Per the design of the study, each participant experienced both the flipped classroom and traditional models of instruction. Interviews were conducted within the context of participant experiences with both models. During the interview, participants were asked the following eight questions:

1. What was your experience in the classroom like?
2. How did you see your role in the learning environment?
3. What did you believe were your responsibilities?
4. What did you perceive was the role of the instructor in the class?
5. How did this experience compare to other classes you have taken?
6. What about this experience do you think benefitted your learning?
7. What about your experience do you think hurt your learning?
8. In your opinion, how does the flipped classroom model compare to the traditional model?

The audio of each interview was recorded using an audio recording device, and recordings were transcribed (see Appendix L) and stored in a computer database for review, coding, and further analysis using QDA Miner software (Lewis & Maas, 2007). As coding was conducted, four main themes emerged: preference, responsibility, engagement, and value. For the preference theme, codes were associated with the following terms: enjoyment, learning information, and flow. The responsibility theme incorporated learner responsibility, instructor responsibility, active learning, and direct instruction. The engagement theme highlighted comments in reference to the use of discussion, asking questions, active participation,

relationships with classmates, and relationship with the instructor. For the value theme, codes were associated with the terms covering material, better learning, and application to life. Below are several statements made by participants in the interviews indicating their overall perception and evaluation of the learning environment and instructional methods.

Preference

1. "It was a fun, interactive learning environment" (Interviewee #1, Personal Communication, December 7, 2018).
2. "I was going to class because I always enjoyed it" (Interviewee #10, Personal Communication, January 23, 2019).
3. "That's kind of what I enjoyed, is that there was more mingling between the students and between the students and professor" (Interviewee #4, Personal Communication, January 8, 2019).
4. "In all my other classes it was just "follow the syllabus and step, step, step", but the psychology class was very much different and less time-consuming because you're not as stressed. It's just—I liked how the class flowed" (Interviewee #5, Personal Communication, January 10, 2019).
5. "I really enjoyed the flipped classroom more when it comes to the style because I'm more of an extravert. So, I like the interactive activities, discussing ideas, and all that. I really enjoyed the flipped classroom" (Interviewee #6, Personal Communication, January 10, 2019).
6. "I would rather have lectures and have a professor give me all of the information" (Interviewee #7, Personal Communication, January 10, 2019).

7. “I would say I prefer the traditional classroom just because there is so much information” (Interviewee #7, Personal Communication, January 10, 2019).
8. “To be honest, I prefer the traditional over the flipped, but that’s mainly just because I’m more comfortable with the traditional versions of classrooms because I have never taken a flipped class before” (Interviewee #8, Personal Communication, January 18, 2019).

These statements reveal an overall stated preference for the flipped classroom model of instruction. There was one student who preferred the traditional model of instruction as it related to learning, but enjoyed the flipped classroom model for other areas of the learning experience. Therefore, all interview participants stated that they enjoyed the flipped classroom and expressed a desire to take more classes featuring the flipped classroom model of instruction.

Responsibility

1. “Our role was kind of more important than a normal student and professor relationship. We had more influence on the discussions, and our opinions were more accepted, and we were able to challenge the content more” (Interviewee #1, Personal Communication, December 7, 2018).
2. “[The professor’s role was] to just guide us through what content we were supposed to be focusing on and helping to clear up any misconceptions or answering any questions we had about the material we weren’t able to answer on our own, or find on Google” (Interviewee #1, Personal Communication, December 7, 2018).

3. “It was easy as long as you just put forth effort” (Interviewee #10, Personal Communication, January 23, 2019).
4. “So, I would definitely say that the reading was our goal, to learn outside of class and to be able to come to class and communicate together” (Interviewee #11, Personal Communication, January 25, 2019).
5. “It helped me learn that I actually have to read” (Interviewee #11, Personal Communication, January 25, 2019).
6. “Well, for the second half of the semester, my responsibility was to watch the videos and basically teach myself so that when I got into class I could discuss what I had learned over the videos and everything” (Interviewee #5, Personal Communication, January 10, 2019).
7. “I did everything outside of class, which gives me kind of my own time to do it when I can and it doesn’t just compress into one class period” (Interviewee #6, Personal Communication, January 10, 2019).
8. “In the traditional aspect of it, the professor does everything. They do the lectures, they ask the questions, they guide everything. That’s what they do” (Interviewee #6, Personal Communication, January 10, 2019).

These statements reveal participants’ perception of the role and responsibility of both the instructor and the student in the learning environment. Under the traditional model of instruction, students stated that they viewed the professor as dictating to students what they were to learn through lecturing. Students in the traditional model were to take notes and listen to lectures. In the flipped classroom learning environment, students stated that the instructor asked more questions and required students to engage in discussions and activities. Students in the flipped

classroom environment felt as if they were expected to be much more responsible to teach themselves, with participants stating that they were expected to complete the reading, watch the online videos, and participate in discussions much more.

Engagement

1. "The flipped classroom was definitely more personal, and you felt more engaged in the material" (Interviewee #1, Personal Communication, December 7, 2018).
2. "Group discussions helped, just seeing other opinions that you might not have thought of, and then, I mean, there were fun projects, too" (Interviewee #1, Personal Communication, December 7, 2018).
3. "I guess being part of the discussion. Joining in and, you know, if no one ever joined in there wasn't really going to be discussion or the activities wouldn't have been fun because nobody would have been doing anything" (Interviewee #11, Personal Communication, January 25, 2019).
4. "I think doing the active stuff in class probably helps a lot of people just because you get to talk with other people who are in the class" (Interviewee #11, Personal Communication, January 25, 2019).
5. "You get to talk to other people and if you have those questions, you can ask a lot easier than being by yourself" (Interviewee #11, Personal Communication, January 25, 2019).
6. "The flipped classroom, it was much more class participation involved. So, a lot more 'What's your opinion?', 'How do you see things?', 'Do you have personal

experience with this?'" (Interviewee #2, Personal Communication, December 11, 2018).

7. "I believe that I became closer to my fellow students" (Interviewee #2, Personal Communication, December 11, 2018).
8. "I guess the first part is that I really had to manage to listen and stay engaged the whole way through for the traditional way for it, and then, once you flipped the class, I didn't really have to focus on doing as much because I was constantly doing stuff" (Interviewee #3, Personal Communication, December 12, 2018).
9. "I didn't have to think about it as much because I was always engaged and I was focused because we were doing activities or in-class assignments" (Interviewee #3, Personal Communication, December 12, 2018).
10. "I'm a very visual and hands-on learner, so just sitting at a desk and taking notes was very—it really didn't teach me much" (Interviewee #5, Personal Communication, January 10, 2019).
11. "But it actually got us into it. It got us feeling like we were a part of the class, like we could give our own input into the class, which always makes people feel more welcome, even if they're introverts and don't really speak" (Interviewee #6, Personal Communication, January 10, 2019).
12. "To be honest, I didn't try to involve myself in the class too much because I was there to be in the class" (Interviewee #8, Personal Communication, January 18, 2019).

Overall, participants stated that the flipped classroom model of instruction was more engaging than the traditional model. Especially through discussions, participants stated that they

were much more active in the flipped classroom than in the traditional model. Two students stated that they were not as inclined to engage in some of the activities due to feeling shy or uncomfortable, but most stated that the flipped classroom helped them engage more than they did in the traditional classroom, which was preferable to them.

Value

1. "So, I guess there was a lot more review and time to solidify the knowledge in your brain with the flipped classroom" (Interviewee #1, Personal Communication, December 7, 2018).
2. "The way I can implement it into my daily life and the way it made me just feel like I was going to my classes, but I was taking it back home with me. I wasn't just taking it for the test, I was taking it for life in general" (Interviewee #10, Personal Communication, January 23, 2019).
3. "I would say that the flipped classroom helped with my critical thinking" (Interviewee #10, Personal Communication, January 23, 2019).
4. "But I learned more during the traditional because I retain more when someone else is saying it" (Interviewee #11, Personal Communication, January 25, 2019).
5. "With the flipped classroom, having to do everything outside of class, like all the reading, I wasn't learning as much, specifically" (Interviewee #11, Personal Communication, January 25, 2019).
6. "I felt like I retained whatever I learned during the flipped part of class more than the lecture" (Interviewee #3, Personal Communication, December 12, 2018).

7. “I feel like a switched [flipped] class has more value because it’s teaching different lessons” (Interviewee #5, Personal Communication, January 10, 2019).
8. “What I’m trying to say is that since there is so much to cover, sometimes it would be too deep and there wouldn’t be enough emphasis on the core information, I feel” (Interviewee #7, Personal Communication, January 10, 2019).
9. “With the traditional classroom you just learn the material” (Interviewee #7, Personal Communication, January 10, 2019).
10. “It helped me grasp things in ways that I thought I couldn’t grasp things” (Interviewee #9, Personal Communication, January 18, 2019).

The value of the flipped classroom model versus the traditional model was mixed. Many participants stated that what they learned in the flipped classroom was valuable. They stated that the type of learning was something they appreciated, but that it was different than in the traditional model. Some participants appeared to equate the concept of learning with what is expected in a traditional classroom. They were often concerned that in the flipped classroom model, they were not exposed to as much information as they were in the traditional model and believed that the traditional model still had value for overall learning. Despite this belief, most participants did perceive the flipped classroom as allowing them more time to engage with learning materials such as the textbook and the online videos so that they felt more prepared.

Summary of Qualitative Interviews with Individual Participants

The individuals interviewed were forthcoming with their thoughts about their experience in the learning environment with both the flipped classroom model of instruction and the traditional model. Participants expressed a preference for the flipped classroom model of

instruction rather than for the traditional model. Participants stated that the flipped classroom was more enjoyable, more engaging, and required students to be more responsible for their own learning, which they appreciated about the model. Participants were mixed when comparing the value of the two instructional models. Though they stated that the flipped classroom was valuable for learning certain things, they believed that the traditional model was more associated with learning than the flipped.

Chapter Summary

The results presented in this study indicate that the majority of students participating in the study were white, were female, were aged 18-20, and most had earned fewer than 48 hours of university credit. There were a number of differences between the participant sample and the College Navigator's (Statistics, 2017) report of overall SAU enrollment. Overall SAU enrollment shows that only 58% of the population was female whereas the sample revealed that 63% of the participants were female. Additionally, the ethnic demographic data for the participant sample showed a larger number of white and Asian students and a smaller number of Hispanic/Latino students than the overall SAU population. The perception and evaluation data collected using the survey, along with the academic performance data collected from the summative tests, allowed the three assumptions of Pearson's correlation to be met. The academic performance data collected from the summative tests allowed the two assumptions for the paired samples *t*-test and the three assumptions of the independent *t*-test to be met. The critical thinking data collected using the PCTE allowed the two assumptions of the paired samples *t*-test to be confirmed. With assumptions met, research questions were then analyzed.

Pearson's correlation was used for research question #1 and demonstrated no significant relationship between participant perception and academic performance. The paired samples *t*-test associated with research question #2 revealed a significant difference in academic performance for Group A, suggesting that the traditional model of instruction was related to better academic performance. However, no significant difference was found for Group B. Due to these results, an independent *t*-test was conducted on the difference scores for both groups and a significant difference was found. Due to the inability to equate the groups using pretests, the summative test results could be due to random group differences. The paired samples *t*-test associated with research question #3 demonstrated no significant difference in critical thinking due to the instructional model used. The paired samples *t*-test associated with research question #4 demonstrated no significant difference in participants' evaluation of the learning experience.

Those individuals who participated in the qualitative interviews expressed a preference for the flipped classroom model of instruction rather than for the traditional model. Participants felt more engaged using the flipped classroom. Participants stated that they enjoyed the flipped classroom experience more than the traditional, and appreciated that the model expected students to be more responsible for their own learning. Participant perceptions of the value of the two instructional models were mixed. Participants stated that though they felt the flipped classroom was valuable for learning some things, the traditional model was more associated with what they expected to learn from the class. A more detailed discussion of the results, along with potential areas for future research, will be presented in Chapter V.

CHAPTER V

DISCUSSION AND CONCLUSIONS

The purpose of this study was to investigate potential differences between the flipped model of instruction and a traditional model of instruction. This chapter includes the research problem addressed, a review of the methods of data collection and data analysis, a summary of the results of the study, and a discussion of the resulting implications. Additionally, recommendations for future research are outlined.

Statement of the Problem

College and university instruction is changing (Freeman et al., 2014b). For most of American history, traditional college instruction has relied upon lecture as the model for the college classroom learning environment (Smith, 2010; Woodard, 2011). Recently, innovations in pedagogy have been introduced that are challenging the traditional ways of teaching college students (Dillenbourg, 1999b; Lage et al., 2000; Prince, 2004). One of these innovations is the flipped classroom (Bergmann & Sams, 2012). The term was coined to describe a classroom where most content delivery is moved out of the classroom to an LMS and class time is used for learning activities that are active, collaborative, and require students to complete pre- and/or post-class activities to fully benefit from in-class work (Abeysekera & Dawson, 2015b). In this way, the traditional classroom activity of lecturing, and the homework that has typically been an out of class activity, have been flipped (Lage et al., 2000).

Though the flipped classroom incorporates other widely recognized pedagogies, research on the model has been limited. Up until 2012, very little research had been conducted comparing the flipped classroom model of instruction with a more traditional lecture model (Bishop & Verleger, 2013b). Since then, more research has been completed showing primarily positive results on student perception (Butt, 2014; Long, Logan, & Waugh, 2016; Love et al., 2014), student satisfaction (Missildine et al., 2013), and overall learning (Albert & Beatty, 2014; Freeman et al., 2014b; Winquist & Carlson, 2014). Additionally, students have reported a positive relationship between how well teaching is organized and the development of critical thinking skills (Loes et al., 2015). Despite the growing literature, more research is needed to understand the relationship between the flipped classroom and both critical thinking and academic performance. Research of student perceptions and evaluation of the flipped classroom is also needed. This study was conducted to better understand how the flipped classroom contributes to student learning experiences.

Review of the Methodology

This mixed-methods study was designed as a within-subjects quasi-experiment (Gliner et al., 2011) to test the relationship between the flipped classroom model of instruction and student learning experiences in an introductory psychology course at a private, faith-based, liberal arts university. There were four research questions that were studied:

- Research Question #1: Is there a relationship between student perception of the learning environment and student academic performance within the flipped classroom learning environment as well as the traditional classroom learning environment?

- Research Question #2: Is there a difference in academic performance for students undergoing the flipped classroom model of instruction as compared to the traditional model of instruction?
- Research Question #3: Is there a difference in critical thinking for students undergoing the flipped classroom model of instruction as compared to the traditional model of instruction?
- Research Question #4: Is there a difference in participants' evaluation of the flipped classroom model of instruction as compared to the traditional model of instruction?

This investigation was accomplished by comparing the flipped classroom model of instruction with a traditional classroom model of instruction. Data were collected from a nonrandomized sample of students enrolled in the course, General Psychology, in the fall term at SAU for the majority of the study. General Psychology is required for all psychology majors at the university as well as many health and pre-health majors such as pre-med, nursing, and pre-physical therapy. A randomized sample was selected from the larger sample for qualitative investigation of student perception of the learning environment. This smaller sample was randomized from each treatment type to ensure a minimum number of participants from each group.

The researcher used SPSS software to conduct an analysis of data collected from each of the three instruments. QDA Miner software was used to conduct analysis of data collected from individual interviews. For quantitative analysis of research question #1, the researcher utilized a previously created survey and compared it to student scores on content-related summative assessments. For research question #2, the researcher utilized the created summative tests that

were administered at the end of each content section. A total of four tests administered for each group throughout the semester. For research question #3, the PCTE was administered at the end of the first half of the semester and once at the end of the semester. For the quantitative portion of research question #4, the survey was used to gather data on student evaluation of the instructional design of the course. Qualitative interview questions were used to gather data through student interviews collected by the researcher after the semester ended to address research questions #1 and #4.

Summary of the Results

Data collected were analyzed through various tests. For research question #1, Pearson's correlation was used and showed a slight negative relationship between the variables but with no statistically significant results. This indicates no apparent relationship between participant perception of the learning environment and academic performance. For research question #2, the paired samples *t*-test was used. For Group A, the paired samples *t*-test showed a statistically significant difference between the variables. This result indicated that participants performed better under the traditional model of instruction than under the flipped classroom model of instruction. For Group B, the paired samples *t*-test did not show statistical significance. This indicates no statistically significant difference existed between the variables. In addition to the paired samples *t*-test, an independent *t*-test comparing both groups' difference scores was found to be necessary. The results show a statistically significant difference between the difference scores of Group A and Group B. For research question #3, the paired samples *t*-test was used. The results did not show statistical significance. This indicates no statistically significant difference existed between the variables. For research question #4, data were

compared using a paired samples *t*-test. The results did not show statistical significance. This indicates no statistically significant difference existed between the variables.

Finally, a qualitative analysis was completed to further examine the experience of students in the learning environment. Per the design of the study, each participant experienced both the flipped classroom and traditional models of instruction. Interviews were conducted within the context of participant experiences with both models. Four main themes emerged: preference, responsibility, engagement, and value. Participants expressed a preference for the flipped classroom model of instruction rather than for the traditional model. Participants conveyed that the flipped classroom was more enjoyable, more engaging, and required students to be more responsible for their own learning, which they appreciated about the model. Participants were mixed when comparing the value of the two instructional models. Though they stated that the flipped classroom was valuable for learning certain things, they suggested that the traditional model was more associated with learning than the flipped.

Discussion of the Findings

This study was designed to examine the difference between the flipped classroom model of instruction and a more traditional model of instruction that was based upon lecturing. Four primary areas were examined: the relationship between student perception of the learning environment and academic performance, the difference in academic performance, the difference in critical thinking, and the difference in student evaluation of the learning environment. Generally, the findings revealed no statistical difference between the models of instruction, however, the findings were mixed for the issue of academic performance.

Student Perception and Academic Performance

The analysis of the data collected for research question #1 revealed no statistical significance in the relationship between student perception and academic performance. Prior research on student perception of the flipped classroom model of instruction is common (Bishop & Verleger, 2013b), and student perception of the flipped classroom model is generally positive (Long et al., 2016; Love et al., 2014; Roach, 2014). Very little research has been conducted to ascertain a link between perception of the flipped classroom and academic performance (Sletten, 2015). Though the results of this study do not show a statistically significant relationship between student perception and academic performance that does not mean there is no relationship between perception and academic performance. There was an issue maintaining the anonymity of individuals in the sample that may have contributed to a lack of relationship between the variables. The comparison of the data was conducted using the overall means from the surveys and the overall means of summative tests scores for each group and not by comparing individual scores with summative test scores. The survey that was conducted at the end of each treatment period was anonymous, therefore survey data could not be tied to individual participants for a direct comparison of individual survey answers with individual summative test scores. Had this been done, the results may have provided a clearer picture of how student perception related to academic performance.

Academic Performance

The analysis of the data collected for research question #2 revealed mixed results. The results of the analysis showed a statistically significant difference between the two instruction models for Group A. Group A experienced the traditional classroom for the first treatment

period and the flipped in the second treatment period. In contrast, Group B experienced the flipped classroom in the first treatment period and the traditional in the second treatment period with no statistically significant difference. These results are supported by prior research. Some studies have shown that the flipped classroom has produced increased academic performance (Albert & Beatty, 2014; Freeman et al., 2014b; Missildine et al., 2013; Talley & Scherer, 2013) while others have shown either mixed results or no statistically significant difference in academic performance (Winquist & Carlson, 2014).

Though the difference between the two groups' results was surprising, the possibility was anticipated. The counterbalanced design for the delivery of instruction models was used to account for potential minor differences between the groups. This design, while essential, may have reduced sensitivity to detect changes for several reasons. First, the content of the course changed throughout the semester. The General Psychology course provides an overview of a variety of the major fields within psychology (see Appendix L) and the content that students learn in the first half of the semester differs from what students learn in the second half. Next, it was assumed that most of the students participating in the study had limited experience with the flipped classroom and were more comfortable with a traditional model. By counterbalancing when students experienced the flipped classroom model, the design attempted to account for any differences in comfort level with the flipped classroom design. Finally, the method for assessing academic performance was a series of four multiple-choice tests. These assessments are a common conventional form of assessment in college classrooms (Stanger-Hall, 2012) and have been used by university professors for decades (Bailey, Mossey, Moroso, Cloutier, & Love, 2012; DiBattista & Kurzawa, 2011). The decision to use them for this study was based upon the instructor of record's regular usage of these tests to measure student content retention. Despite

their common usage, there is much criticism in using multiple-choice testing for measuring learning (Martinez, 1999; Stanger-Hall, 2012; Watters & Watters, 2007). Martinez (1999) found that though multiple choice testing appeared to adequately measure lower level thinking such as base understanding and memorization of material, the assessments struggled to assess higher level thinking typically associated with critical thinking (Watters & Watters, 2007). Additionally, Scouller (1998) found that when students expected to be assessed using multiple choice tests, they employed surface learning approaches to their study and perceived these tests as assessing lower levels of thinking. Interestingly, when these same students utilized deeper learning strategies, they performed at lower levels on multiple choice tests, suggesting that this testing may inhibit the higher level critical thinking desired by many university professors (Scouller, 1998). Likewise, Dufresne, Leonard, and Gerace (2002) suggested that multiple choice testing may contribute to a false sense that students have the knowledge and understanding of the material they are tested upon. Considering this criticism, a conventional assessment like a multiple-choice test may be inadequate at measuring student learning within a flipped classroom environment due to the model's emphasis on active and collaborative learning. Students in a flipped classroom are directed less at the memorization of course content and more on higher level processes such as the analysis of course content for application purposes. For this reason, an assessment that attempts to measure how well students analyze and apply course content may be better suited for the assessment of learning within the flipped classroom model. Moreover, this assessment might produce more appropriate results for understanding how the flipped classroom compares to a less active instructional model.

An independent *t*-test was completed on the difference scores due to the difference in results for each group. The statistically significant difference that was found between the

difference scores of the groups suggests more consistency in scores between treatment periods for Group B than for Group A. Two factors have been identified that may have contributed to this issue. First, considering the mean scores of the two groups, where the Group B mean (M = 78.41) for the second treatment period is greater than the Group A mean (M = 71.68), participants in Group B may have better understood the course content presented in the second treatment period.

Second, for Group A the change from the traditional classroom in Treatment Period 1 to the flipped classroom model in Treatment Period 2 was a substantial shift for which students may have been unprepared. For this study, it was assumed that students were more accustomed to, and therefore for more comfortable with, a lecture-based learning experience. Despite alternative methods of instruction being utilized, the lecture is still the most frequently used instructional method (Freeman et al., 2014b; Smith, 2010). After experiencing the course through the traditional instructional model, the flipped classroom model required students to change the way they engaged with online materials, what activities with which they were expected to engage, how involved they were in class discussions, and their activity level in the classroom. It appears that this shift may have contributed to lower academic performance. Alternatively, Group B experienced the flipped classroom instructional model in the first treatment period and the traditional model in the second. The change to the traditional model, a strategy to which it was assumed students were already accustomed, did not appear to have a detrimental effect. In this way, the impact of the change in instructional models between treatment periods for each group may have been more disruptive to participants in Group A than in Group B.

Critical Thinking

The analysis of the data collected for research question #3 revealed no statistically significant difference in critical thinking between the models of instruction. This finding is supported by the literature. In the development of the PCTE, Lawson et al. (2015) found that some students scored higher in PCT than other students. The authors found that psychology majors who had multiple courses requiring the use of PCT significantly outperformed biology majors and students taking an introductory psychology course. The current study used General Psychology, an introductory level course. Therefore, the findings are consistent with prior research.

Another factor that may have contributed to the findings is the design of the instrument used. Literature suggests that critical thinking is not only a set of skills, but also a disposition. Bensley and Murtaugh (2012) suggest that the PCTE is a measure of critical thinking disposition rather than of critical thinking skills. Critical thinking dispositions consist more of "the willingness to engage in effortful thinking and the tendency to be open- and fair-minded in evaluating claims, yet remain skeptical of unsubstantiated claims" (Bensley & Murtagh, 2012, p. 6). Though the General Psychology course may have provided opportunity for the development of PCT skills, it may not have provided enough opportunity for the development of a PCT disposition. Therefore, using an instrument designed to measure PCT skills may have provided a different outcome.

Considering these findings, the flipped classroom model did not discourage PCT. Critical thinking was promoted through the use of active and collaborative learning strategies that have been shown to improve PCT. Moreover, if explicit instruction opportunities on critical

thinking were provided within the curriculum of the course, students may have improved in their use of PCT.

Participant Evaluation

According to participant responses on the survey, there was no statistically significant difference between the models for evaluation of the learning environment. This finding is partially supported by prior research. Studies on student perception of the value of learning environments for learning course content are mixed. Butt (2014) found that students perceived lecturing and individual study as being more valuable than group activities for learning material, however, after experiencing a flipped classroom, students were much more favorable to learning within that environment. Long, Logan, and Waugh (2016) also found that students perceived that pre-class videos and other materials were valuable for learning course content in a flipped classroom. It appears that more research on the perceived value of the flipped classroom for learning course content is needed.

Qualitative Interviews with Individual Participants

The flipped classroom was preferred by most of the participants who were interviewed in the study. Most of the focus was on the enjoyment participants experienced during the flipped classroom. Comments like "it was fun," "I always enjoyed it," and "I liked how the class flowed" exemplify the overall experience of participants. It appears that the focus of the flipped classroom on active and collaborative learning contributed the most to this experience for participants. Participants also appeared to enjoy the interactive nature of small and large group discussions employed by the flipped classroom environment. This is supported by prior

research. Studies of student perception and preference of the flipped classroom model show an overall preference for the model over more traditional pedagogies (Butt, 2014; Lage et al., 2000; McLaughlin et al., 2013; Tague & Baker, 2014) including active and collaborative learning strategies (Freeman et al., 2014b).

This preference for the flipped classroom appears to contrast with participant perception of responsibility in the flipped classroom. Participants recognized that they had more responsibility for their own learning. Participants stated that "since we had to do a lot of the work outside of the classroom, we were studying a lot of it on our own" and that "I would definitely say that the reading was our goal, to learn outside of class and to be able to come to class and communicate together." The role of the instructor was perceived as different as well, with students saying that in the flipped classroom the professor's role was "to just guide us through what content we were supposed to be focusing on" while in the traditional classroom "she was responsible for mostly giving us the information, so, we had to rely more on her," meaning that the professor was central to the learning experience.

One reason why participants preferred the flipped classroom even though they perceived themselves to be more responsible for their learning appears to be due to how valuable they perceived their own contributions were to the classroom environment. This empowering experience is supported by prior research on self-determination theory (Deci & Ryan, 1985b). Self-determination theory proffers that there are three basic needs for a learner: competence, autonomy, and relatedness. According to Deci and Ryan (1985b), should a learning experience satisfy these needs, the level of students' motivation to engage in the experience increases. This level of students' motivation influences their level of effort and focus on a learning activity (Abeysekera & Dawson, 2015b). Participant responses reveal that as the flipped classroom met

these needs, they felt more empowered by their autonomy and competence to engage with class activities. Participants stated that "We had more influence on the discussions, and our opinions were more accepted, and we were able to challenge the content more" and "I did everything outside of class, which gives me kind of my own time to do it when I can and it doesn't just compress into one class period."

The increased engagement derived from this experience seems to be another contributing factor to why participants preferred the flipped classroom despite the perception of additional responsibility. Participants overwhelmingly stated that they felt more engaged in the flipped classroom environment than in the traditional classroom environment. Examples of statements made by participants like "you felt more engaged in the material," "doing the active stuff in class probably helps," and "it was much more participation involved" reveal the overall feeling students had in the flipped classroom. Statements such as "you get to talk to other people who are in the class" and "I believe that I became closer to my fellow students" also suggest that the collaboration in the flipped classroom was a positive experience for participants. This experience is supported by prior research, which has shown a link between increased engagement in the classroom or course materials and positive student outcomes (Kahu, 2013; Kuh et al., 2008). Furthermore, Masika and Jones (2016) showed that engagement in classroom collaboration increased students' sense of belonging or relatedness, which also can lead to better outcomes (Abeysekera & Dawson, 2015b).

Despite this preference for the flipped classroom model over the traditional model, what value the participants felt the flipped classroom offered was mixed. Some participants stated that learning in the flipped classroom environment was more valuable than in the traditional model, stating "there was a lot more review and time to solidify the knowledge in your brain with the

flipped classroom," "I felt like I retained whatever I learned during the flipped part of class more than the lecture," and "it helped me grasp things in ways that I thought I couldn't grasp things." These statements suggest that the flipped classroom was perceived as valuable for learning, however, the learning was perceived as different from the learning within the traditional environment. Moreover, many participants did not equate the learning in the flipped classroom environment with the type of learning required by the psychology course in which they were enrolled. Participants stated that "I learned more with the traditional because I retain more when someone else is saying it," "with the flipped classroom, having to do everything outside of class, like all the reading, I wasn't learning as much," and "with the traditional classroom you just learn the material."

One reason for the mixed results may be related to individual student performance. As previously suggested, the flipped classroom model includes more student responsibility for learning and requires more student engagement. This student-centric approach requires students to be motivated to engage with pre-class materials in addition to activities during class. Consequently, this puts a greater burden on the individual learning strategies students need for success at the university level. This is supported by prior research. Enfield (2013) found that higher achieving students stated that pre-class materials, specifically, course content videos, were easier to understand and more engaging than did lower achieving students. Should students not engage with pre-class materials or find pre-class materials difficult, this could likely affect their performance in the class as well as their perception of the learning environment (Milman, 2012).

Recommendations for Future Research

Based upon the findings of this study, four recommendations have been identified for future research. First, more research should be conducted on the relationship between student perception of the flipped classroom and academic performance. Second, more research should be conducted using a randomized, independent measures design to better understand the relationship between the flipped classroom and academic performance. Third, research should be conducted on the development of critical thinking skills in an introductory psychology course. And finally, research on the perceived value of the flipped classroom for learning course content should be conducted. More details on each of these recommendations are provided below.

It is recommended that more research be conducted on the relationship between student perception of the flipped classroom and academic performance. While recent research has been conducted on perception of the flipped classroom (Bishop & Verleger, 2013b; Butt, 2014; Long et al., 2016; Love et al., 2014; Roach, 2014) and on academic performance (Albert & Beatty, 2014; Freeman et al., 2014b; Missildine et al., 2013; Talley & Scherer, 2013; Winquist & Carlson, 2014), only one study was found to study the relationship between the two variables (Sletten, 2015). Sletten (2015) found no link between perception and academic performance, which is consistent with the findings of the current study. Further study on the relationship between perception of the flipped classroom and academic performance would fill a gap in the literature and provide deeper understanding of how students experience the flipped classroom.

Due to the limitations of using students enrolled in a 16-week university semester course, the researcher was not able to use random selection of participants. For that reason, a dependent measures design was selected so that participant differences between groups would be diminished. However, this decision may have contributed to the mixed results found in

academic performance. More research using a randomized, independent measures design during a fully flipped course for at minimum the duration of a full semester to reduce issues caused by changing instructional models in the middle of the study is recommended. Though research has been conducted on the relationship between the flipped classroom and academic performance (Albert & Beatty, 2014; Freeman et al., 2014b; Missildine et al., 2013; Talley & Scherer, 2013; Winquist & Carlson, 2014), very little research has been conducted using this method.

Critical thinking that is specific to psychological thinking is relatively new to the critical thinking paradigm (Lawson et al., 1999). Research has shown that PCT is distinct from other forms of critical thinking (Williams et al., 2004) and measuring PCT as a disposition has been supported by research (Lawson et al., 2015; Penningroth et al., 2007). Despite this, the instrument used to measure PCT, the PCTE, has been described as measuring PCT as a disposition instead of a set of critical thinking skills (Bensley & Murtagh, 2012). Additionally, the PCTE has not shown any change in PCT for students in an introductory psychology course (Lawson et al., 2015). This may be due to the PCTE not measuring critical thinking skills. There is no apparent research on how well an introductory psychology course increases critical thinking skills. For this reason, it is recommended that more research on how well an introductory psychology course contributes to the development of PCT skills should be conducted.

Among the research that has been conducted to study student perceptions of the flipped classroom, very few have attempted to ascertain how student perceive the value of the flipped classroom for learning (Roach, 2014). Often, studies have focused on other areas of interest such as student satisfaction (Missildine et al., 2013), specific strategies within the flipped classroom (Butt, 2014; Freeman et al., 2014b), or elements of the flipped classroom (Long et al., 2016;

Sletten, 2015). More research is needed on how students perceive the value of the flipped classroom in order to fill a gap in the literature. Better understanding of this concept could impact pedagogy decisions by university instructors in the future.

Chapter Summary

This chapter reviewed the background of the study, the methods of data collection, and results of data analysis. The lack of statistical significance found for the relationship between student perception of the learning environment and academic performance, critical thinking, or evaluation of the learning environment was discussed. On the issue of academic performance, it was postulated that the mixed results may have been due to the design of the study, with one group suffering more disruption through the transition between treatment periods than the other. Additionally, participant perceptions of the learning environment from individual interviews were discussed. Several recommendations were offered, including the need for more research on the relationship between student perception of the flipped classroom and academic performance, more studies using randomized research designs when studying the flipped classroom, and more research on the relationship between an introductory course and PCT skills.

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APPENDIX A

SAMPLE WELCOME LETTER

Welcome to General Psychology! This is a unique class providing you the opportunity to learn about what makes us human and how we experience the world. In this class you will study:

- how the neurons in our brain allow us to think and move,
- how we learn and remember,
- how we perceive the world around us, and
- how we make decisions.

You will also discover how stress effects our lives, what motivates us, how we feel emotion, and how we interact with the people around us. At its heart, this course is about relationship; the better we know what makes other people who they are, the better our relationships with them will be.

Additionally, this course is the subject of a research study in which you get to participate. Traditionally, university classes are lecture-based and students are asked to take notes. In this class, there will be some of that, but there will also be something called the "flipped classroom", which will ask you to complete your work during class. Rather than listening to a lecture, you will be actively engaged in different discussions, activities, and assignments. The researcher will be gathering data to understand how these teaching strategies help you learn.

Because your participation is voluntary, you will be receiving an email with additional information about the study as well as information regarding confidentiality and consent practices.

These are exciting times and I look forward to our opportunity to learn together. If you have any questions, please feel free to contact me during my office hours or through email.

APPENDIX B

INFORMED CONSENT FORM

Date: TBD

Subject: The difference in relationship between different models of instruction and student perception of the learning environment, student evaluation of teaching strategies, academic performance, and critical thinking.

Dear Southern Student,

I would appreciate your assistance with this research project on the difference in relationship between different models of instruction and student perception of the learning environment, student evaluation of teaching strategies, academic performance, and critical thinking. The project is being conducted by Matthew W. Tolbert, a graduate student attending the University of Tennessee, Chattanooga and will be used in a doctoral dissertation. The research will help further the understanding of college teaching strategies' influence on how students learn course content and develop critical thinking skills. The hypothesis is that there is a difference in student perception and evaluation of the learning environment, academic performance, and critical thinking skills due to the flipped classroom model of instruction.

To help with the research, I ask you to complete the perception and evaluation survey, the Psychological Critical Thinking Exam, and participate in the various course activities as detailed by your instructor. The survey should take approximately ten minutes to complete, the PCTE will be incorporated into your coursework and administered during class twice, once before midterm and once at the end of the semester, and the class activities and exams will be incorporated into your coursework. Though your course will be studied, your individual participation in the study is voluntary. This means that your information will not be gathered during the semester and used for the purposes of the study. If you do not wish to participate, simply do not complete the survey. Completing the survey will be considered your consent to participate. Completion or non-completion of the survey has no bearing on your grade in this class and you may stop participation at any time during the study without penalty.

Your participation and responses will be confidential and though the results of the research may be published, your name and institution will not be known. Information from the perception and evaluation survey and PCTE will be seen by only you, your instructor, the researcher, and the academic advisor.

For additional help with the research, you may be invited to participate in an interview asking for your description and impressions of the learning experience. These interviews will take place after the class has ended and be administered by the researcher. You will not be required to participate in an interview and declining to participate will not affect your grade in this class.

Thank you in advance as I truly appreciate your participation. If you have any questions regarding the research, contact either the researcher, Matthew W. Tolbert, 423-236-2517, or Dr. Ted Miller (academic advisor), at 423-425-4540. If you have any questions regarding your rights as a research subject, please contact the University of Tennessee, Chattanooga Institutional Review Board at 423-425-4289. Additional contact information is available at www.utc.edu/irb.

Thank you again for your help.

Matthew W. Tolbert
PhD. Candidate—College of Health, Education & Professional Studies, University of Tennessee at Chattanooga
Chattanooga, Tennessee

APPENDIX C

VARIABLES ANALYSIS

For this study, there will be one treatment variable and three primary outcome variables. Additionally, five extraneous variables will be measured and used to describe the research sample. A list of the variables for this study is found in Table 1.

Table 1 Variables Analysis

	Variable Label	Levels of the Variable	Scale of Measurement
Dependent Variables	Academic Performance	Summative Test Scores	Scale
	Learner Critical Thinking	Summative Test Scores	Scale
	Learner Appreciation of Learning Experience	Survey Responses	Scale
Independent Variable	Complete Classroom model of Instruction, traditional and flipped		Nominal
Extraneous Variables	Age	Survey Responses	Nominal
	Gender	Survey Responses: 1=Male 2=Female	Nominal
	Previous University Experience	Survey Responses: 1=Less than 12 hours 2=12 hours of credit 3=24 hours of credit 4=36 hours of credit 5=48 hours of credit	Ordinal
	Ethnicity	Survey Responses: 1=American Indian/Alaskan Native 2=Hawaiian Native/Other Pacific Islander 3=White/Caucasian 4=Hispanic/Latino 5=Black/African American 6=Asian 7=Other	Nominal

APPENDIX D

PERCEPTION AND EVALUATION SURVEY

This survey is intended to measure how well you believe the instructional methods facilitated your learning in psychology this term. Please answer as objectively as possible. All answers are anonymous and will not affect your grade in the class.

Demographic Information-Please mark an 'X' by the answers that best represent you.

1. How many hours of university credit have you completed?
   ___Less than 12 hours
   ___12 hours
   ___24 hours
   ___36 hours
   ___48 hours
   ___60 or more hours

2. What is your age?
   _____

3. With which gender do you identify?
   ___Male
   ___Female
   ___Other

4. With which ethnicity do you most closely identify?
   ___American Indian/Alaskan Native
   ___Hawaiian Native/Other Pacific Islander
   ___White/Caucasian
   ___Hispanic/Latino
   ___Black/African American
   ___Asian
   ___Other _____ (please specify)

Please mark an 'X' by the answers that most closely represents how you experienced the learning environment of the class.

1. In your opinion, how valuable was class instruction to your understanding of course concepts?
   ___Not Valuable
   ___Somewhat Valuable
   ___Valuable
   ___Extremely Valuable

2. In your opinion, how valuable were out-of-class activities to your understanding of course concepts?
   ___Not Valuable
   ___Somewhat Valuable
   ___Valuable
   ___Extremely Valuable

3. In your opinion, how valuable was the textbook to your understanding of course concepts?
   ___Not Valuable
   ___Somewhat Valuable
   ___Valuable
   ___Extremely Valuable

4. In your opinion, how valuable was participating in discussions during class time to facilitating a deeper understanding of course concepts?
   ___Not Valuable
   ___Somewhat Valuable
   ___Valuable
   ___Extremely Valuable

5. In your opinion, how valuable to your learning was the structure of the class, i.e. when assignments were due?
   ___Not Valuable
   ___Somewhat Valuable
   ___Valuable
   ___Extremely Valuable

6. In your opinion, how valuable to your learning was collaborating with other students?
   ___Not Valuable
   ___Somewhat Valuable
   ___Valuable
   ___Extremely Valuable

For the following statements, please mark an 'X' by the answers that most closely represent how helpful each aspect of the course was to your learning.

7. Out-of-class activities.
   ___A slight amount of help
   ___A moderate amount of help
   ___A significant amount of help
   ___Great amount of help

8. Participating in discussions during class.
    ___A slight amount of help
    ___A moderate amount of help
    ___A significant amount of help
    ___Great amount of help

9. Participating in group work during class.
    ___A slight amount of help
    ___A moderate amount of help
    ___A significant amount of help
    ___Great amount of help

10. Class instruction.
    ___A slight amount of help
    ___A moderate amount of help
    ___A significant amount of help
    ___Great amount of help

11. Textbook materials.
    ___A slight amount of help
    ___A moderate amount of help
    ___A significant amount of help
    ___Great amount of help

12. Structure of the class.
    ___A slight amount of help
    ___A moderate amount of help
    ___A significant amount of help
    ___Great amount of help

Please mark and 'X' by the answers that most closely represent how you experienced the learning environment of the class.

13. I had enough understanding of course concepts to contribute in class.
    ___Strongly disagree
    ___Disagree
    ___Agree
    ___Strongly agree

14. I was able to apply principles from the class to my own life.
    ___Strongly disagree
    ___Disagree
    ___Agree
    ___Strongly agree

15. I had a choice in how I completed course requirements.
    ___Strongly disagree
    ___Disagree
    ___Agree
    ___Strongly agree

16. My contributions were valued.
    ___Strongly disagree
    ___Disagree
    ___Agree
    ___Strongly agree

17. I felt connected to my classmates.
    ___Strongly disagree
    ___Disagree
    ___Agree
    ___Strongly agree

18. The professor created a welcoming atmosphere.
    ___Strongly disagree
    ___Disagree
    ___Agree
    ___Strongly agree

19. I found class discussions stimulating and fun.
    ___Strongly disagree
    ___Disagree
    ___Agree
    ___Strongly agree

20. I enjoyed class materials and activities.
    ___Strongly disagree
    ___Disagree
    ___Agree
    ___Strongly agree

APPENDIX E

SUMMATIVE TESTS TABLE OF SPECIFICATIONS

Summative Tests	Content Learning Objective	Summative Test Questions
Test # 1	Content Section 1: Psychological science, neuroscience, and human development	
	1.1 Describe the precursors to the establishment of the science of psychology.	1.1.1 Psychology's history as a science began _____. 1.1.2 Which school of psychology attempted to identify the basic elements of mind?
	1.2 Describe the key characteristics of the scientific approach.	1.2.1 Psychology is best defined as the scientific study of: 1.2.2 Empirical evidence is gathered by _____. 1.2.3 A questioning attitude regarding psychologists' assumptions and hidden values best illustrates:
	1.3 Know what methods exist for conducting psychological research in the world.	1.3.1 In a psychological experiment, the experimental component that is manipulated by the investigator is called the _____ variable:
	1.4 Articulate the difference between correlational and experimental designs.	1.4.1 Suppose that those who watch a lot of violence are also likely to be aggressive. This relationship would not necessarily indicate that watching violence influences aggression because:
	1.5 Define the basic elements of statistical investigation.	1.5.1 The mean of a distribution of scores is the: 1.5.2 Which of the following is a measure of how any one score varies from the mean of a set of scores?
	1.6 Name the various parts of the nervous system and their respective functions.	1.6.1 A brief electrical charge that travels down the axon of a neuron is called the: 1.6.2 An axon is: 1.6.3 The speed at which a neural impulse travels is increased when the axon is encased by a(n):

		1.6.4 The minimum level of stimulation required to trigger a neural impulse is called the: 1.6.5 The central nervous system consists of:
	1.7 Explain how neurons communicate with each other.	1.7.1 A synapse is a(n): 1.7.2 Neurotransmitters are released from vesicles located on knoblike terminals at the end of the: 1.7.3 In order for you to experience the pain of a sprained ankle, _____ must first relay messages from your ankle to your central nervous system.
	1.8 Explain the two systems in the peripheral nervous system and what you know about the different regions and areas of the central nervous system.	1.8.1 The parasympathetic nervous system: 1.8.2 The two major divisions of the nervous system are the central and the _____ system.
	1.9 Describe major theories of psychological development and what distinguishes them.	1.9.1 Piaget is best known for his interest in _____ development. 1.9.2 According to Piaget, schemas are: 1.9.3 The stage during which sensory input and motor responses become coordinated is labeled as Piaget's _____ stage of cognitive development. 1.9.4 According to Kohlberg, postconventional morality involves: 1.9.5 Critics of Kohlberg's theory of moral development, such as Carol Gilligan, have suggested that postconventional morality is more characteristic of _____ than of _____. 1.9.6 According to Erikson, achieving a sense of identity is the special task of the:

		1.9.7 How many stages of the life cycle are presented in Erikson's psychosocial theory of development?
	1.10 Describe major features of physical, cognitive, and social development during adolescence.	1.10.1 Adolescence extends from:
	1.12 Describe cognitive, psychosocial, and physical changes that occur with age.	1.11.1 The rooting reflex refers to a baby's tendency to:
Test # 2	Content Section 2: Principles of learning and memory, cognition and intelligence, and sensory and perception	
	2.1 Distinguish between classical conditioning and operant conditioning.	2.1.1 John B. Watson considered himself to be a(n): 2.1.2 The first experimental studies of associative learning were conducted by: 2.1.3 If a bell causes a dog to salivate because it has been associated with food, the bell is called a(n): 2.1.4 In which form of learning is behavior said to be influenced by its consequences? 2.1.5 A Skinner box is a(n): 2.1.6 An event that increases the frequency of the behavior that it follows is a(n):
	2.2 Identify the four aspects of observational learning according to Social Learning Theory.	2.2.1 Our ability to learn by witnessing and imitating the behavior of others best illustrates:
	2.3 Differentiate between the following forms of memory: long-term memory, short-term memory, and sensory memory.	2.3.1 Your limited-capacity memory is called _____ memory. 2.3.2 Which type of memory has an essentially unlimited capacity?

	2.4 Describe the three stages in the process of learning and remembering.	2.4.1 The process of encoding refers to:
	2.5 Understand the systematic biases that affect our judgment and decision making.	2.5.1 Cognitive strategies that simplify decision-making by using mental short cuts are called _____. They are sometimes referred to as "rules of thumb." 2.5.2 System 2 thinking is driven by _____ and is typically _____. 2.5.3 When it comes to making rational decisions, humans tend to rely heavily on _____. 2.5.4 While humans try to make rational and logical decisions, we are prevented from doing so by our cognitive limitations that limit the quality and quantity of information available to us. This limitation is called: 2.5.5 _____ are systematic and predictable mistakes that influence judgment and decision making.
	2.6 Define intelligence including the different types of intelligence.	2.6.1 According to researcher Carol Dweck, when children believe that their intelligence is changeable and evolving, they experience a(n) _____ mindset. She notes that this mindset is healthier than other beliefs about one's own intelligence. 2.6.2 Howard Gardner proposed that: 2.6.3 Intelligence is: 2.6.4 Leonard is a psychotherapist and is very good at his job partly because he has a strong sense of empathy for others. Which type of intelligence from Gardner's multiple intelligences theory does this most clearly indicate?

	2.7 Explain the basic principles of sensation and perception.	2.7.1 Although Dugan has the lower portion of his leg amputated he still sometimes feels and uncomfortable itching sensation from where his foot would be. This is an example of a _____. 2.7.2 At the back of the brain is the _____ which is primarily responsible for processing information about light and movement. 2.7.3 The day Kim is in Nairobi she notices the honking, engine sounds, yelling, and other street noises. By the second day, however, she no longer notices these. Which of the following is the best explanation?
	2.8 Describe the function of each of our senses.	2.8.1 Hearing occurs, in part, when sound waves reach the "eardrum" or _____. 2.8.2 Light enters the eye and is converted into electrical signals that can be processed by the brain. This process is called _____. 2.8.3 Sound quality can be divided into amplitude, timbre and pitch. Pitch is determined by the _____ of the sound waves. 2.8.4 The nerves that are responsible for converting tactile stimuli into electrical signals that the brain can understand are called _____ receptors. 2.8.5 When Janet feels the wind blowing on her face this is an example of _____. 2.8.6 Which of the following statements is true about taste?
Test # 3	Content Section 3: States of consciousness, emotion and motivation, and personality	
	3.1 Define consciousness and distinguish between	3.1.1 Consciousness can best be described as: 3.1.2 In the famous Star Wars movie, Obi-Wan tells Luke that everything he knows depends on a certain point of view. At the center of

	high and low conscious states.	each person's own vantage point of the world is their _____. It contains everything that person knows. 3.1.3 Each night at 10 pm, Jiao becomes very sleepy. This is most likely because _____. 3.1.4 Stimulants such as cocaine produce euphoria because they _____. 3.1.5 Which of the following is characteristic of hallucinogenic substances? 3.1.6 Which of the following is NOT an effect of alcohol? 3.1.7 Despite potential dangers, marijuana has been legalized in some places. Which factor is most likely related to this trend? 3.1.8 Which of the following is the best characterization of consciousness? 3.1.9
	3.2 Understand the important historical ideas about unconscious processes.	3.2.1 Who is generally regarded as the most famous advocate of the importance of unconscious processes?
	3.3 Identify the basic theories and components of emotion.	3.3.1 Studies of emotional responding tend to focus on three facets of emotional response. Which of the following includes one example of <u>each</u> of those three facets? 3.3.2 Of the following terms that could be used to describe a person's emotions, which would not support the universalist perspective that people tend to have the same feelings across different cultures? 3.3.3 Homeostasis refers to:
	3.4 Identify the key properties of drive states.	3.4.1 One of the key differences between many drive states is the extent to which they are triggered by internal stimuli, such as the _____ drive state, versus external stimuli, such as the _____ drive state.

	3.5 Define the basic concepts of goals, motivation, self-regulation, and self-control.	3.5.1 Psychologists best define motivation as: 3.5.2 Which is most true of sexual arousal? 3.5.3 Even though it isn't required for class, Hermione always completes extra readings, spends time in the library, and studies topics that will not be on the test. What type of motivation is Hermione displaying? 3.5.4 In order to achieve a goal, a certain level of psychological driving force is need to enable action. What is this psychological driving force called? 3.5.5 When motivation is driven by the benefits associated with achieving a goal, such as fame or fortune, it is _____.
	3.6 List the major components of what makes up “the self”.	3.6.1 According to Erickson, which is one of the greatest achievements for the self as a motivated agent? 3.6.2 According to _____, the ego is the part of personality that observes outside reality, engages in rational thought, and copes with the competing demands of inner desires and moral standards. 3.6.3 Lilly is having a conversation with her grandmother about her school, friends, and various activities and interests. Lilly also says, "Grandma, I think that I'm a good person. I like making other people feel happy!" Lilly's feeling that she is worthy and good reflects her _____. 3.6.4 What is the definition of self-esteem?
	3.7 List and describe the “Big Five” personality traits that comprise the Five-Factor Model of personality.	3.7.1 Research has repeatedly supported the notion that adult personality exists as a combination of the "big five" personality traits. Which of the following is NOT a big five personality trait? 3.7.2 Personality traits are defined as: 3.7.3 Clint is a very confident person who tends to take charge when he has been

		assigned to a group task. Which of the Big 5 factors of personality would Clint likely score high in?
	3.8 Understand the logic, strengths, and weaknesses of each approach to measuring personality characteristics.	3.8.1 Personality refers to _____. 3.8.2 The most familiar and widely-used approach to assessing personality is the _____,in which standard items are presented and these items use a limited response format such as an agree-disagree scale. 3.8.3 The Rorschach Test and the Thematic Apperception Test are two prominent examples of _____ tests.
Test # 4	Content Section 4: Well-being and stress, psychological disorders, and social psychology	
	4.1 Understand psychological stress and the stress response.	4.1.1 Charlie hates taking exams. He spends the week before finals biting his nails, sleeping poorly, and worrying. He tries to distract himself by watching funny movies the night before the exam. This is an example of _____. 4.1.2 Of all the possible stress reduction techniques which of the following has the most health benefits? 4.1.3 Since people cannot usually change stress _____, they should aim to change _____ instead. 4.1.4 To focus on an event that is causing stress in an effort to change or improve the situation is what type of coping? 4.1.5 What is the definition of stressors?
	4.2 Explain theoretical models of health as well as the role of psychological	4.2.1 How has our perspective on health changed over the years?

	stress in the development of disease.	
	4.3 Describe what positive psychology is, who started it, and why it came into existence.	4.3.1 Thinking and feeling that your life is going well is defined as what? 4.3.2 Having sufficient social resources helps support individuals' subjective well-being. Which of the following is the best example of these resources?
	4.4 Identify what the criteria used to distinguish normality from abnormality are.	4.4.1 Psychopathology includes illnesses or disorders that involve _____ symptoms.
	4.5 Understand the relationship between anxiety and anxiety disorders.	4.5.1 A person who avoids public places or situations because they are viewed as not "safe" would most likely be diagnosed with: 4.5.2 A person who presents with multiple vulnerabilities and life stress, and symptoms of this stress interfere substantially with daily functioning, will most likely be diagnosed with _____. 4.5.3 Cory has an intense fear of flying and endures flights with extreme distress. Although she knows her fear is irrational, it is overwhelming and uncontrollable. Cory most likely suffers from: 4.5.4 Kyle is so preoccupied with avoiding germs that he washes his hands as many as 20 times an hour. Kyle most likely suffers from: 4.5.5 Celine has been having difficulty sleeping, cannot seem to concentrate at work, is sad most of the time, and seems to have lost interest in things that she always used to enjoy. Which disorder is Celine most likely suffering from?

	4.6 Describe the diagnostic criteria for mood disorders.	4.6.1 One day, Betty felt lethargic, hopelessly sad, fatigued, and had no interest in anything. A few days later she was feeling extremely euphoric and powerful, engaged in risky sexual exploits, and spent money irresponsibly. Betty could be diagnosed with:
	4.7 Describe the signs and symptoms of schizophrenia and related psychotic disorders.	4.7.1 Delusions, hallucinations, disorganized speech, and catatonia are symptoms of which category of disorders?
	4.8 Identify and describe the most widely practiced approaches to psychotherapy.	4.8.1 Which of the following was the earliest organized therapeutic orientation? 4.8.2 Which therapy focuses heavily on creating an accepting and supportive environment for self-discovery?
	4.9 Distinguish between prejudice, stereotypes, and discrimination.	4.9.1 A belief that characterizes people based merely on group membership is _____. 4.9.2 What is the difference between stereotypes, prejudice, and discrimination?
	4.10 Know what features are associated with facial, body, and vocal attractiveness.	4.10.1 According to Robert Sternberg's theory, love is comprised of three different components. Which of the following is not one of them? 4.10.2 Caring, closeness, and emotional support are all parts of the _____ component of love. 4.10.3 A typical, or average, member of a category is called a(n) _____. In attractiveness studies, it has been found that averageness actually increases attractiveness. 4.10.4 The tendency to associate physical attractiveness with a variety of positive traits, such as sociability, intelligence,

		competence, and health, is called the attractiveness _____ effect. 4.10.5 Which of the following has been found to be the single quality that is a necessary and sufficient condition for high attractiveness across virtually all people?
	4.11 Explain the important components of aggression and explain how aggression differs from violence.	4.11.1 In 1972, the United States Surgeon General issued a warning that there were negative effects that would result from: 4.11.2 Which of the following would be good advice for treating aggressive tendencies?

APPENDIX F

PSYCHOLOGICAL CRITICAL THINKING EXAM

Psychological Critical Thinking Questions

1. Could the event or relationship have occurred by chance (e.g., you just happened to have a car accident on the day that a psychic predicted your car would be damaged)?
2. Is there a control group or comparison against which to assess the performance of the experimental group? We might see the improvement in the experimental group, but would it have occurred anyway without any treatment or intervention (i.e. due to placebo effects, passage of time, regression toward the mean, etc.)?
3. Is the person concluding there is a causal relationship on the basis of correlational data?
4. Is the person trying to generalize the findings to a larger group based on a biased or unrepresentative sample?
5. Did the person ask questions of participants in a biased manner (e.g., leading questions, loaded or emotional wording, or confusing wording)?
6. Has the person made it impossible to falsify his or her theory or hypothesis? Does he or she consider positive evidence as support for the theory and negative evidence as not being relevant? Does he or she claim that the phenomenon disappears once you try to test it?
7. Is the person claiming to have four the cause of some behavior or phenomenon? Most complex behaviors or phenomena have multiple causes.

Psychological Critical Thinking Exam

Directions: For each of the following examples, state whether or not there is a problem with the person's conclusions and explain the problem (if there is one):

1. A researcher located 100 pairs of identical twins who have been reared apart and reunited them. The twins discovered that they had an extraordinary number of things in common. For example, one set discovered that, among other things, both have a daughter named Cindy, a workshop where they restore old cars, cocker spaniels, and they both crush their beer cans with their left hands. The other pair of twins also had numerous similarities. The researcher concluded that these stories are evidence that our personalities are influenced by genetics. (Question 1)

2. A group of researchers claim that they have discovered THE cause of aggression. One of their studies showed that individuals with damage to an area of the brain called the amygdala were less aggressive than individuals without such damage. Another study found that surgically destroying a small area of the amygdala in cats causes them to behave less aggressively than other cats. A third study found that electrically stimulating the amygdala in hamsters caused them to behave more aggressively. The researchers concluded that the cause of aggressive behavior is abnormalities of the amygdala. (Question 7)

3. A researcher tested a new drug designed to decrease depression. She gave it to 100 clinically depressed patients and discovered that their average level of depression, as measured

by a standardized depression inventory, declined after 4 months of taking the drug. She concluded that the drug reduces depression. (Question 2)

4. Sylvia claims she can use her psychic powers to determine what happened to individuals who have been reported missing. She points out that she correctly predicted that several individuals who had been missing for months were dead. A skeptical researcher asks her about several additional people who were recently reported missing and she predicts that they are also dead. How- ever, the researcher discovers that all of them are still living. The researcher asks Sylvia whether these cases cast doubt on her psychic abilities. Sylvia explains that skeptical researchers' negative vibes often disrupt psychic abilities, and if she had made the predictions without the presence of the researcher, she would have been accurate. Thus, she believes the evidence supports her psychic abilities. (Question 6)

5. Years ago, some psychologists observed that the parents of autistic children appeared very aloof and detached from their autistic children than were parents of normal children. These psychologists concluded that parental detachment was the cause of autism. (Question 3)

6. A survey research company hired by the Democratic party contacted a large, representative sample of Americans to examine their beliefs about new legislation designed to reduce crime. They asked the respondents, ''Would you agree that this new legislation that will reduce crime and make our streets safer is a good piece of legislation for America?'' Close to 92% of the sample answered ''yes.'' The research company concluded that most Americans support the legislation. (Question 5)

7. A developmental psychologist conducted a longitudinal study of moral development using a group of 1,000 boys beginning at age 8 and continuing through age 14. The findings demonstrated that there are identifiable stages of development occurring across the age periods studied. In the publication of the results, the psychologist named the stages and concluded that they represent the stages of typical moral development for all children of ages 8–14. (Question 4)

8. An animal advocacy group studied the effects of animal ownership on owners' health. They studied a large, representative sample of older adults and obtained their medical records. Their findings showed that adults who had owned pets (i.e., dogs or cats) for a longer period of time had fewer medical problems than did adults who never owned pets or owned them for a shorter time period. They concluded that owning pets decreases the likelihood of developing health problems. (Question 3)

9. In order to test-market their new detergent, a company sent free samples to 300 randomly selected households. A few weeks later, they called them and asked, ''Are you amazed at how much cleaner and brighter your clothes are after using our new detergent?'' About 90% of the

300 respondents said, ‘‘yes.’’ The company concluded that their new detergent cleans and brightens clothes very effectively. (Question 5)

10. Researchers randomly assigned male juvenile offenders to conditions where they watched either violent or nonviolent films. They discovered that those in the violent film group were less likely to go for help when they witnessed a later real-life violent episode than those in the nonviolent film group. On that basis, the researchers concluded that violent films harden all filmgoers to real-life aggression. (Question 4)

11. Dr. Jones is testing a new treatment for cancer. He administered the treatment to a large sample of patients and kept track of who lived and who died after receiving the treatment. For each person who lived, he attributed the success to the treatment. For each person who died, he attributed the death to the severity of the person’s cancer. He concluded that his treatment was effective. (Question 6)

12. A researcher tested a new weight loss supplement. She gave it to 200 overweight adults and discovered that their average weight, as measured by a precise weight scale, declined after 2 months of taking the supplement. She concluded that the supplement promotes weight loss. (Question 2)

13. A group of biological researchers concluded that they have found THE cause of alcoholism. They discovered that alcoholics do not have a small cluster of cells, common to non-alcoholics, located near the hypothalamus. They have also demonstrated that destroying this area of the brain in normal rats caused them to develop a preference for alcohol in their water. Moreover, in another study, they found that normal humans who had this part of the brain damaged in accidents later became alcoholics. (Question 7)

14. Over the past few years, Jody has had several dreams that apparently predicted actual events. For example, in one dream, she saw a car accident and later that week she saw a van run into the side of a pickup truck. In another dream, she saw dark black clouds and lightning and two days later a loud thunderstorm hit her neighborhood. She believes these events are evidence that she has a psychic ability to predict the future through her dreams. (Question 1)

APPENDIX G

QUALITATIVE INTERVIEW QUESTIONS

Qualitative Interview Questions:

1. What was your experience in the classroom like?
2. How did you see your role in the learning environment?
3. What did you believe were your responsibilities?
4. What did you perceive was the role of the instructor in the class?
5. How did this experience compare to other classes you have taken?
6. What about this experience do you think benefitted your learning?
7. What about this experience do you think hurt your learning?
8. In your opinion, how does the flipped classroom model compare with the traditional model?

APPENDIX H

BACKGROUND SHEET FOR TRADITIONAL INSTRUCTION

Traditional Classroom Model of Instruction Guidelines

The traditional model of instruction is a model wherein:

- the instructor primarily lectures,
- students mainly take notes,
- out of class homework problems are assigned for students to complete on their own (Wasserman et al., 2013).

The core principle of this model is professor-centric content delivery, i.e. the professor is responsible for delivering course content during class time.

Students are expected to listen, take notes, and participate where directed (Burgan, 2006; Schwerdt & Wuppermann, 2011).

The guidelines below have been developed based upon an understanding of the literature, researcher experience, and direct observations of instructors in the classroom.

Traditional Classrooms
○ At least 75% of class time is used for content delivery through a lecture or other means
○ Questions from students to the instructor in order to clarify or elaborate on delivered content
○ Questions from the instructor to students asking for understanding of content or to introduce a topic
○ Videos used to introduce a topic or deliver content
○ Discussions (both small group and large group) are limited in time and intended to facilitate understanding of delivered content or to introduce a topic
○ Use of PowerPoint, Prezi, or other visual media to illustrate delivered content
○ Assigning work to be completed outside of class.
○ Engaging activities can/should be used during class periods to illustrate a concept or introduce a topic. These activities should be limited to an emphasis on content delivery such as quizzes, surveys, and discussions or as illustrations of delivered content. Activities such as these are careful to avoid asking students to generate content themselves.

APPENDIX I

BACKGROUND SHEET FOR ACTIVE AND COLLABORATIVE LEARNING

Flipped Classroom Model of Instruction Guidelines

The flipped classroom model of instruction consists of:

- moving most content delivery out of class to an online LMS,
- using class time for learning activities that are active and social,
- requiring students to complete pre- and/or post-class activities to fully benefit from in-class work (Abeysekera & Dawson, 2015b).

The core principle of this model is learner-centric content creation, i.e. students create content based upon the expectations of the course, instructor, and learning environment.

The role of instructor is one that creates the environment and facilitates the learning process. Students are expected to actively engage in the learning process often by collaborating with their classmates and applying what they have previously studied in the online environment (Dillenbourg, 1999b; Freeman et al., 2014a; Prince, 2004).

The guidelines below have been developed based upon an understanding of the literature, researcher experience, and direct observations of instructors in the classroom.

Flipped Classrooms
• At least 75% of class time is used for active learning, collaborative learning, or in-depth discussion (e.g. posed questions for analysis).
• The instructor is careful to answer questions from students in ways that encourage students to think deeper or in different ways rather than to give answers.
• Questions from the instructor to students asking for clarification of activity or assignment expectations. Other questions will be posed during discussions, as detailed below.
• Videos used to introduce a topic for discussion.
• Discussion questions should be focused on application, evaluation, and analysis of content previously delivered through the LMS.
• Use of PowerPoint, Prezi, or other visual media to provide opportunities for analysis or to communicate expectations for activities or assignments.
• Engaging classroom activities are active, often collaborative, and intended to engage students' critical thinking.
• Assigning work to be completed during class times.

Active and Collaborative Learning

Active learning is an "instructional method that engages students in the learning process" by "requiring them to do meaningful learning activities and think about what they are doing" (Prince, 2004, p. 1)

Collaborative Learning is a learning opportunity in which two or more people work together to learn or attempt to learn something (Dillenbourg, 1999a).

Examples of Active and Collaborative Learning Strategies
Think-Pair-Share
○ Students think individually about a question or idea for 1-2 minutes, ○ pair up with someone to discuss their thinking, ○ then share their conversation with a larger group. ○ Eventually, they will share with the whole class.
Whole Group Discussion
○ Often paired with "Think-Pair-Share". ○ Ask students to elaborate on their thinking by providing explanations, evidence, or clarifications. Suggested probing questions include: ▪ What makes you think that? ▪ Please give an example from your experience? ▪ What do you mean? ▪ Instructors should try to stay neutral in their reaction to student comments. ○ Others are invited to react and respond to ideas by providing alternative viewpoints, agreements, or disagreements. Suggested probing questions include: ▪ Who can add something to that comment? ▪ Who would like to share an alternative opinion?
Turn and talk
○ A question is posed to the class and students simply turn to the person next to them and discuss. ○ The important aspect of this strategy is for the peers to share and for individuals to access prior knowledge about a topic.
Posters & gallery walk

- Groups of students are given an assignment to work on together before presenting their ideas on a sheet of chart paper. Once they have completed their poster, they display it on the wall.
- One of their group stays to answer questions while the rest of the class circulates through all the posters.

Fish Bowl

- A small group of students engage in a discussion about ideas or concepts that have alternative explanations while the rest of the class observes.
- At the end of a preset time, the rest of the class asks questions and suggests alternative explanations than those presented in the small group discussion.
- Multiple discussions can be held during a class period using different students each time.

Jigsaw Strategy

- Students work in small groups to read information that has been organized into sections.
- Each student in the group reads one section of the material and shares it with the rest of their group.
- They respond to prompts such as:
  - What do you think each idea means?
  - How can this idea be applied to help understand the concept(s)?
  - What questions do you have about what you read?
- Variations could involve each member getting together with an expert group (one member from each group that has reviewed the same information) to make sure they all understand it. Then, they go back to their original groups to inform the other members.

APPENDIX J

VIDEO STORYBOARD AND SCRIPT

Training Video Storyboard and Script

STORYBOARD

Scene 1: Use of PowerPoint

The instructor will welcome participants to class and utilize a PowerPoint presentation to introduce a topic. The instructor will give students directions on how the students will use the information presented. The instructor will show PowerPoint slides in each scene of the video.

Scene 2: Use of video to introduce topic

A video link will be presented on a PowerPoint slide and the instructor will click on the link to bring up a video to be watched. The video will last approximately 45 seconds and the instructor will stop the video. The instructor will then change slides to reveal questions to be answered in small group discussion by the students.

Scene 3: Small Group Discussion

The instructor will direct students on the parameters of the small group discussion and students will engage in discussion. During the discussion, the instructor will visit each small group to listen, ask questions, and answer queries. At the conclusion of the small group time, the instructor will call student attention back to the front.

Scene 4: Large Group Discussion

The instructor will begin to facilitate a large group discussion by asking questions and facilitating student answers. The instructor will utilize open-ended questions to encourage students to analyze deeper and resolve disagreements. The instructor will avoid answering student questions directly and instead will direct students to seek answers themselves.

Scene 5: Active/Collaborative learning activity

The instructor will give students directions on a problem-solving activity. Once it is explained, the instructor will ask if students have any clarifying questions. The instructor will

then have students begin working. The instructor will visit each group to ask questions and answer queries. At the end of the active/collaborative time, the instructor will call student attention back to the front and begin to debrief the activity.

Scene 6: Instructor answering questions

The instructor will answer questions posed by students by asking students to analyze deeper, seek out the answers themselves, and apply knowledge already acquired. Additionally, these questions will be open-ended and intended to foster more critical thinking as well as encourage discussion.

SCRIPT

Scene 1: Use of PowerPoint

(Scene opens to an instructor standing in front of a classroom with students' attention on him. A PowerPoint presentation is on a screen behind him. The instructor gestures intermittently to the information on the screen while speaking.)

INSTRUCTOR:

Welcome to General Psychology! Today we will be discussing moral development. Moral development is a type of cognitive development devised by the theorist Lawrence Kohlberg.

(Instructor advances the PowerPoint slide displaying information about Kohlberg and moral development)

INSTRUCTOR:

In order to research moral development, Kohlberg created various moral dilemmas, written out for participants to read, and then posed questions to the participants. From their answers, he would ascertain each participants' morality. That is what we are going to do with you today!

(Instructor turns toward the screen to advance a slide.)

Scene 2: Use of video to introduce topic

(Scene opens to the instructor advancing a PowerPoint slide. The slide contains a brief description of a video as well as a video link.)

INSTRUCTOR:

This is a short video that will present a famous moral dilemma, that of Heinz. Afterwards, I will give instructions for what you will do.

(The instructor clicks on the link. The link takes him to a YouTube video. He pushes play and at a predetermined time stops the video. He then turns toward the students.)

INSTRUCTOR:

In your small groups, you will answer the following questions:

(Instructor advances the PowerPoint slide.)

Scene 3: Small Group Discussion

(Scene opens to the instructor speaking to the students. A PowerPoint slide with questions on it is behind the instructor. He gestures to the screen as he speaks.)

INSTRUCTOR:

Heinz ends up stealing the drug because he cannot afford it. In your small groups, please answer the questions on the screen. The goal of this is for you all to explore the morality of Heinz's actions. It is okay if there are disagreements; the expectation is that you will be able to come to an understanding of morality based upon your discussion. Please begin.

(As the students begin discussing, the instructor waits a few moments and then walks over to each group to listen to their discussion. At the second group he asks a question.)

INSTRUCTOR:

Consider what it would be like if you were in this situation. Would you steal the drug for your spouse? Would you want your spouse to steal the drug for you?

(The instructor then moves back to the front of the class for a few moments before asking students to give their attention back to him.)

INSTRUCTOR:

Okay. Let me ask you what you think of Heinz.

Scene 4: Large Group Discussion

(The scene opens with the instructor standing in front of a screen beginning to lead a group discussion.)

INSTRUCTOR:

Based on the moral dilemma presented, was Heinz right to steal the drug?

(Various students raise their hands to speak)

STUDENT:

I don't think Heinz was right to steal the drug.

INSTRUCTOR:

What is your reasoning for that?

(Student answers and the instructor encourages others to engage in the discussion. The instructor is careful not to give his opinion and instead facilitates the student discussion.)

INSTRUCTOR:

Who believes Heinz was right to steal the drug? What reasoning do you have for that?

(Scene ends with students answering questions and generating discussion on the topic.)

Scene 5: Active/Collaborative learning activity

(The scene opens to the instructor giving instructions about what is visible on the screen. The instruct gestures toward the screen while speaking.)

INSTRUCTOR:

Your goal is to choose six individuals who will continue the human race on Mars. You must choose from this list of individuals. Your job is to work together in your group to come to consensus on who will be saved. I would like you to focus not only on who will be saved, but also how you came to the decision to save them. Consider what values you want to preserve and what criteria are necessary for deciding on who to save. You will be given ten minutes to complete this activity.

(A student raises her hand)

STUDENT:

What criteria should we use to choose people to save?

INSTRUCTOR:

Good question. What criteria does your group find to be most important for continuing the human race?

INSTRUCTOR:

Please begin.

(Students begin working on solving the problem. The instructor walks to each group listening to their process, answering questions, and encouraging them. After about 5 minutes, the instructor calls their attention to the time.)

INSTRUCTOR:

You have five more minutes. At this point, you should have identified what criteria you are using and begun selecting individuals to save.

(Students continue working and the instructor continues to visit each group. At the end of the time, the instructor calls their attention back to the front.)

INSTRUCTOR:

As you finish, let's begin by hearing what criteria you used in your process.

(Students share some of their criteria, facilitated by the instructor asking clarifying questions.)

INSTRUCTOR:

What process did you use to decide on the individuals to save?

(Students begin to describe their process and the scene fades out.)

Scene 6: Instructor answering/asking questions

(The scene opens to the instructor leading a class of students in a large group discussion. One student asks a question.)

STUDENT 1:

Would you steal the drug for your wife?

INSTRUCTOR:

(Deeper analysis) That's a good question. What should we keep in mind when faced with a dilemma of this kind?

(The scene fades out and fades in another situation with a student asking a different question.)

STUDENT 2:

What if we don't know anything about the people?

INSTRUCTOR:

(Seeking out the answers for themselves) You should handle that issue much in the same way you think you might if you were truly in the position to make these decisions. How can you find good information to inform your decision-making process?

(The scene fades out and fades in another situation with a student asking a different question.)

STUDENT 3:

We elected to use the democratic approach to choosing individuals to save. Was that a good process?

INSTRUCTOR:

(Applying previous attained knowledge) Thank you for the question. There are a number of good processes for making these decisions. What are some of the other processes we read about that are often used besides the democratic approach?

(Scene fades out while students answer the question.)

APPENDIX K

COURSE SYLLABI

SOUTHERN
ADVENTIST UNIVERSITY
School of
Education and Psychology

GENERAL PSYCHOLOGY—PSYC 122-A

Professor:	Cristy Pratt, M.S.
Phone:	(o) 423-236-2779
Office:	2900C Summerour Hall
Office Hours:	Mondays & Wednesdays: 9:00 a.m.-11:00 a.m.
	Tuesdays & Thursdays: 12:00-2:00 p.m.
E-Mail:	cristyd@southern.edu
Time:	Fall Semester, 2018
	12:30p.m. – 1:45 p.m., Monday/Wednesday – Classroom: 2840 Summerour

Required Text:

Textbook is provided free of charge. You can find it in eClass in PDF format. You can choose to purchase a printed copy if you'd like.

Course Description: This course is an introduction to the scientific study of human behavior and mental processes. Special attention is given to provide students with an exposure to a wide variety of psychological principles and concepts which may include but are not limited to sensation, perception, learning, memory, thinking, development, motivation, and personality. The course addresses human behavior through the universal lens of multiple cultures.

Course Goals: Psychology is about life. Every aspect of our existence falls under some aspect of human behavior and mental processes. Christians should have the best understanding of psychology since they serve a Creator, Wonderful Counselor, and Divine Scientist who is the True Expert on what makes us as human beings "tick". We have the Master Teacher and the unerring text for the 'true principles of psychology are found in the Holy Scriptures" (EGW). Enjoy the psychological journey!

Student Performance Objectives:

As a result of this course, students will:

1. Know why psychology is considered a science
2. Understand how psychology conducts science
3. Know the major principles underlying the main sub-fields in psychology
4. Develop an appreciation of how both the Bible and writings of E.G. White inform the scientific study of human behavior and mental processes
5. Be humbled in the face of the complexity of human behavior

This course is congruent with the ***Conceptual Framework for Psychology Programs*** delineated below, which is aligned, in turn with the *APA Undergraduate Psychology Learning Goals and Outcomes:*

The Core Objectives and Expected Proficiencies

1. As a **caring person,** the psychology pre-professional will evidence knowledge, skills, and dispositions by

a. demonstrating the ideals of compassion and justice, along with the belief that all individuals are created in the image of God and thus have unique, inherent value
b. recognizing and respecting diversity, and demonstrating personal integrity
c. considering in decision-making the influence and importance of environmental contexts: familial, social, academic, religious, and cultural
d. advocating and emulating the example of Christ-like service

2. As an **informed and passionate learner**, the psychology pre-professional will evidence knowledge, skills, and dispositions by

a. demonstrating an awareness of nurturing environments and psychological services and programs
b. demonstrating understanding of central concepts in the major subfields of psychology
c. demonstrating understanding of how individuals develop within and across the lifespan
d. demonstrating understanding of the foundations of psychopathology and mental health and wholeness

e. using technology appropriately to enhance communication and individual learning

3. As a **scientific thinker**, the psychology pre-professional will evidence knowledge, skills, and dispositions by
a. demonstrating intellectual curiosity, critical thinking, and strategic decision-making
b. using theory, based on scientific research, to enhance practice
c. using the scientific method to pose and answer real-world psychological questions
d. becoming an informed and critical consumer of scientific research.

4. As a **committed pre-professional**, the psychology pre-professional will evidence knowledge, skills, and dispositions by
a. collaborating with peers and consulting with faculty and other professionals
b. demonstrating understanding of the legal, and ethical responsibilities in the field of psychology
c. participating in opportunities to achieve excellence and broaden psychological horizons
d. recognizing the value of health and a commitment to a lifestyle of wellness
e. demonstrating appropriate communication skills

Class Policies

1. **Disability Statement**: In keeping with the University's policy, if you are a student who believes you may need an accommodation based on the impact of a disability or learning challenge, *(i.e. physical, learning, psychological, ADHD or other type),* you are strongly encouraged to contact Disability Support Services (DSS) at 423-236-2544 or stop by Lynn Wood Hall, Room 1082. Please note that accommodations are not retroactive and cannot be implemented until faculty or staff members have received the official Letter of Accommodation from DSS. Specific details of disabilities remain confidential between students and DSS unless a student chooses to disclose or there is legitimate academic need for disclosure, which is on a case-by-case basis. For further details, visit the Disability Support Services website at www.southern.edu/disabilitysupport.

2. **Eclass**: All written assignments are to be submitted on eClass. There will be no excuses for computers crashing or lack of internet access (the library has internet and computers available.) Make sure you back your work up.

3**. Late Assignments**: All assignments are due on the dates specified in the course outline or announced in class and these must be submitted by the class period listed on the course schedule. Late work is accepted up to one class period after its' due date, and will be marked 10% off. It is your responsibility to plan ahead and deliver a product in a professional manner. If, however, you are experiencing an unusual circumstance, please contact the instructor as soon as possible regarding the situation. If there is not an extenuating circumstance and you find yourself with a

partially completed project when it is due, you should go ahead and submit the project as it is for partial credit.

4. **Course Evaluation**: Near the end of the semester, you will need to evaluate this course. Southern Adventist University encourages all students enrolled in courses, on campus, or online, which enroll more than 5 students to complete course evaluations as part of the ongoing process of improving course delivery and academic standards. You may access the online evaluation at access.southern.edu. Log in using your SAU username and then select "Course Evaluation" under the "course tools" menu. All comments and evaluations are completely anonymous and the results of these course evaluations are made available to professors only after grades are submitted to the records office with questions about such services.

5. **Academic Integrity**: Following university policy (see pp. 45-56 of the current catalog), the professor will adhere to the steps outlined for violation of academic honesty and will assign a failing grade in the class.

Assignment of Grades

The final grade will be determined on the basis of the following criteria:

Tests (4)	–	200 points
Quizzes (15)	–	130 points
Assignments	–	120 points
Reflection Journals	–	70 points
Small Group Activities/Discussions	–	30 points
Case Study	–	50 points
Total possible points	–	**600 points**

The letter grade will be assigned on the following scale:

A	94% - 100%	C	74% - 76%
A-	90% - 93%	C-	70% - 73%
B+	87% - 89%	D+	67% - 69%
B	84% - 86%	D	64% - 66%
B-	80% - 83%	D-	60% - 63%
C+	77% - 79%	F	0% - 59%

Letter grades are described as follows:

A Indicates *exceptional proficiency* and is awarded to those students who have demonstrated consistently superior work.

B Indicates *advanced proficiency* and is awarded for above average work that exceeds the minimum expected competencies.

C Indicates *basic proficiency* and is given for average work that meets the minimum expected competencies.

D Indicates *partial proficiency* and represents below average work that does not meet minimum competencies in a number of areas.

F Indicates *not proficient* and designates work with serious deficiencies that fails to merit a passing grade.

Tests: Four (50 point) tests will be given throughout the course. The tests will be administered in class as indicated in the course schedule. Tests cannot be made up unless there is an excused absence. Test content will include information we covered in class, corresponding chapters in the textbook (including topics we did not get to in class). It is the students' responsibility to make sure they read the chapters and prepare for the tests.

Unit #1 Test	Chapter 1- Psychology as a Science & Psychological Research Chapter 2- Biological Psychology Chapter 3- Development
Unit #2 Test	Chapter 4-Sensation & Perception Chapter 5- Learning Chapter 6-Memory Chapter 7-Cognition & Language
Unit #3 Test	Chapter 8-Intelligence Chapter 9-Consciousness Chapter 10-Emotions & Motivation
Unit #4 Test	Chapter 11-Personality Chapter 12-Social Psychology Chapter 13-Psyc Disorders Chapter 14-Well Being

Quizzes: Fifteen (15) quizzes will be given throughout the course. The quizzes will be completed in eclass as indicated on the course schedule. They must be completed by the beginning of the class period on the date they are due. Quizzes will cover material from outside readings from the text. Each quiz may consist of multiple choice, true/false, and will be worth 10 points each. Missed quizzes will automatically receive a grade of 0 unless the absence is excused. Your lowest two (2) quiz grades will be dropped and will not affect your final grade.

Reflection Journal

You will be expected to write a journal reflecting on the learning done through the text, Simply Psyc videos, class activities, and class discussions. You will be expected to have 7 entries with a minimum of 150 words per entry to be submitted at scheduled times throughout the term. Your reflection should include not only what you have learned but how this learning has changed both how you understand psychology and how you choose to live your life.

Assignments

Psychology in the Popular Media (PPM)

Each student is required to write three (3) 1-page reports of instances of psychological information used in books, magazines, TV, radio, Internet, billboards, etc. One (1) of these reports must come from the Bible. Analyze your source and write your own opinion, and how it applies to a specific topic in psychology. Each PPM is worth 10 points. Reports are due on specified dates. Papers must be in APA style – Double spaced, correct citations, surname and page number in the top right corner and correct cover page. There is a sample paper on eClass.

Lab Activities

You will be assigned different three lab activities corresponding to chapter topics throughout the semester. Each lab will be due on the dates indicated on the course schedule. Some labs will be done in class, while other labs will be done on your own. Each Lab is worth 10 points and will be turned in on eClass.

Other Assignments

Class assignments are designed to help students collectively wrestle with issues pertinent to class material. These assignments are to be completed in class each week. Each one will focus on applying many of the concepts found within the text and sometimes on assigned videos. Class assignments may be individual creative assignments or group assignments and will be announced in class. Attendance is required for participation in class assignments. Completed assignments will be submitted through eClass by the announced deadlines.

Small Group Discussions/Activities: Small group sessions are designed to help students collectively wrestle with issues pertinent to class material. Small groups will be held during class and consist of an appropriate number of students depending on class size. No preparation outside of assigned reading for the day is needed. You will be given full credit for participation. If you are on your phone, or late to class you will not receive credit for the small group assignment.

Case Study: Case studies provide the opportunity to integrate knowledge gleaned from this course and outside readings. You will be asked to present research along with other students on a specific topic of general psychology. Your class presentation will be 25-30 minutes in length. Be creative in your preparation and presentation of this material. Your peer group will evaluate your preparation and the instructor will evaluate the group presentation. Your instructor will evaluate your presentation (75% of your grade) and your group members will evaluate your preparedness (other 25% of your grade).

Things to consider while preparing for your presentation:

1. Do not use your textbook as the main source for your presentation. You should be presenting something new that we have not discussed in class. Do outside research and be creative in what you want to cover.
2. Make sure you dress professionally, as you would for a job interview.
3. Make sure all members of the group have a part in the presentation.
4. Make sure you have a handout for the class (see sample on eClass). I can make copies for you, as long as it's emailed to me the day before your presentation.
5. You must involve the class during the presentation. You can have activities for them, games, Q&A, etc.
6. Case Studies will be assessed using the grading rubric found at the end of the syllabus.
7. Part of your grade will come from the group evaluation by professor; the second part will come from the peer evaluation of your preparation for the case study.

First Half of Semester (TR)

Quizzes/Assignments will be due in eClass by END OF THE DAY (11:00 pm) on due date

Date	Topic	Reading	Assignment Due
August 20	Syllabus Review/Intro to Course		
August 22	Psychology as a Science	Chapter 1	
August 27	Research in Psychology	Chapter 1	Quiz # 1 (A & B)
August 29	Biological Psychology	Chapter 2	Lab # 1; Case Study # 1
September 3	Biological Psychology	Chapter 2	Quiz # 2
September 5	Development	Chapter 3	PPM # 1
September 10	Development	Chapter 3	Case Study # 2; Quiz # 3
September12	**TEST**	**Chapters 1-3**	**Test- Unit # 1**
September 17	Sensation and Perception	Chapter 4	Lab # 2
September 19	Sensation/Perception & Learning	Chapters 4 & 5	Quiz # 4
September 24	Learning	Chapter 5	Case Study # 3; Quiz # 5
September 26	Memory	Chapter 6	PPM # 2
October 1	Memory	Chapter 6	Lab # 3; Quiz # 6

October 3	Cognition and Language	Chapter 7	PPM # 3
October 8	Cognition and Language	Chapter 7	Case Study # 4; Quiz # 7
October 10	**TEST**	**Chapters 4-7**	**Test- Unit # 2**

Second Half of Semester (FL)

Quizzes will be completed in eClass BEFORE the beginning of class on the due date
Reflection Journals are due in eClass by END OF THE DAY (11:00 pm) on due date

October 15	Intelligence	Chapter 8	Quiz # 8
October 17	Intelligence	Chapter 8	Reflection Journal # 1 (Ch. 8); Case Study # 5
October 22	Consciousness	Chapter 9	Quiz # 9
October 24	Consciousness	Chapter 9	Reflection Journal # 2 (Ch. 9)
October 29	Emotion and Motivation	Chapter 10	Quiz # 10
October 31	Emotions & Motivation	Chapter 10	Reflection Journal # 3 (Ch. 10); Case Study # 6
November 5	**TEST**	**Chapters 8-10**	**Test-Unit # 3**
November 7	Personality	Chapter 11	Quiz # 11
November 12	Personality & Social Psychology	Chapters 11 & 12	Reflection Journal # 4 (Ch. 11); Quiz # 12
November 14	Social Psychology	Chapter 12	Reflection Journal # 5 (Ch. 12); Case Study # 7
November 26	Psyc Disorders	Chapter 13	Quiz # 13
November 28	Psyc Disorders	Chapter 13	Reflection Journal # 6 (Ch. 13);

			Case Study # 8
December 3	Well Being	Chapter 14	Quiz # 14
December 5	Well Being	Chapter 14	Reflection Journal # 7 (Ch. 14);
Final Exam	**December 10- 12:00-1:50 PM**	**Chapters 11-14**	**Test- Unit # 4**

SOUTHERN
ADVENTIST UNIVERSITY
School of
Education and Psychology

GENERAL PSYCHOLOGY—PSYC 122-B

Professor:	Cristy Pratt, M.S.
Phone:	(o) 423-236-2779
Office:	2900C Summerour Hall
Office Hours:	Mondays & Wednesdays: 9:00 a.m.-11:00 a.m.
	Tuesdays & Thursdays: 12:00-2:00 p.m.
E-Mail:	cristyd@southern.edu
Time:	Fall Semester, 2018
	2:00p.m. – 3:15 p.m., Monday/Wednesday – Classroom: 2840 Summerour

Required Text:

Textbook is provided free of charge. You can find it in eClass in PDF format. You can choose to purchase a printed copy if you'd like.

Course Description: This course is an introduction to the scientific study of human behavior and mental processes. Special attention is given to provide students with an exposure to a wide variety of psychological principles and concepts which may include but are not limited to sensation, perception, learning, memory, thinking, development, motivation, and personality. The course addresses human behavior through the universal lens of multiple cultures.

Course Goals: Psychology is about life. Every aspect of our existence falls under some aspect of human behavior and mental processes. Christians should have the best understanding of psychology since they serve a Creator, Wonderful Counselor, and Divine Scientist who is the True Expert on what makes us as human beings "tick". We have the Master Teacher and the unerring text for the 'true principles of psychology are found in the Holy Scriptures" (EGW). Enjoy the psychological journey!

Student Performance Objectives:

As a result of this course, students will:

1. Know why psychology is considered a science
2. Understand how psychology conducts science
3. Know the major principles underlying the main sub-fields in psychology
4. Develop an appreciation of how both the Bible and writings of E.G. White inform the scientific study of human behavior and mental processes
5. Be humbled in the face of the complexity of human behavior

This course is congruent with the ***Conceptual Framework for Psychology Programs*** delineated below, which is aligned, in turn with the *APA Undergraduate Psychology Learning Goals and Outcomes:*

The Core Objectives and Expected Proficiencies

2. As a **caring person,** the psychology pre-professional will evidence knowledge, skills, and dispositions by

a. demonstrating the ideals of compassion and justice, along with the belief that all individuals are created in the image of God and thus have unique, inherent value
b. recognizing and respecting diversity, and demonstrating personal integrity
c. considering in decision-making the influence and importance of environmental contexts: familial, social, academic, religious, and cultural
d. advocating and emulating the example of Christ-like service

2. As an **informed and passionate learner**, the psychology pre-professional will evidence knowledge, skills, and dispositions by

a. demonstrating an awareness of nurturing environments and psychological services and programs
b. demonstrating understanding of central concepts in the major subfields of psychology
c. demonstrating understanding of how individuals develop within and across the lifespan
d. demonstrating understanding of the foundations of psychopathology and mental health and wholeness

e. using technology appropriately to enhance communication and individual learning

3. As a **scientific thinker**, the psychology pre-professional will evidence knowledge, skills, and dispositions by
a. demonstrating intellectual curiosity, critical thinking, and strategic decision-making
b. using theory, based on scientific research, to enhance practice
c. using the scientific method to pose and answer real-world psychological questions
d. becoming an informed and critical consumer of scientific research.

4. As a **committed pre-professional**, the psychology pre-professional will evidence knowledge, skills, and dispositions by
a. collaborating with peers and consulting with faculty and other professionals
b. demonstrating understanding of the legal, and ethical responsibilities in the field of psychology
c. participating in opportunities to achieve excellence and broaden psychological horizons
d. recognizing the value of health and a commitment to a lifestyle of wellness
e. demonstrating appropriate communication skills

Class Policies

1. **Disability Statement**: In keeping with the University's policy, if you are a student who believes you may need an accommodation based on the impact of a disability or learning challenge, *(i.e. physical, learning, psychological, ADHD or other type),* you are strongly encouraged to contact Disability Support Services (DSS) at 423-236-2544 or stop by Lynn Wood Hall, Room 1082. Please note that accommodations are not retroactive and cannot be implemented until faculty or staff members have received the official Letter of Accommodation from DSS. Specific details of disabilities remain confidential between students and DSS unless a student chooses to disclose or there is legitimate academic need for disclosure, which is on a case-by-case basis. For further details, visit the Disability Support Services website at www.southern.edu/disabilitysupport.

2. **Eclass**: All written assignments are to be submitted on eClass. There will be no excuses for computers crashing or lack of internet access (the library has internet and computers available.) Make sure you back your work up.

3**. Late Assignments**: All assignments are due on the dates specified in the course outline or announced in class and these must be submitted by the class period listed on the course schedule. Late work is accepted up to one class period after its' due date, and will be marked 10% off. It is your responsibility to plan ahead and deliver a product in a professional manner. If, however, you are experiencing an unusual circumstance, please contact the instructor as soon as possible regarding the situation. If there is not an extenuating circumstance and you find yourself with a

partially completed project when it is due, you should go ahead and submit the project as it is for partial credit.

4. **Course Evaluation**: Near the end of the semester, you will need to evaluate this course. Southern Adventist University encourages all students enrolled in courses, on campus, or online, which enroll more than 5 students to complete course evaluations as part of the ongoing process of improving course delivery and academic standards. You may access the online evaluation at access.southern.edu. Log in using your SAU username and then select "Course Evaluation" under the "course tools" menu. All comments and evaluations are completely anonymous and the results of these course evaluations are made available to professors only after grades are submitted to the records office with questions about such services.

5. **Academic Integrity**: Following university policy (see pp. 45-56 of the current catalog), the professor will adhere to the steps outlined for violation of academic honesty and will assign a failing grade in the class.

Assignment of Grades

The final grade will be determined on the basis of the following criteria:

Tests (4)	–	200 points
Quizzes (15)	–	130 points
Assignments	–	120 points
Reflection Journals	–	70 points
Small Group Activities/Discussions	–	30 points
Case Study	–	50 points
Total possible points	–	**600 points**

The letter grade will be assigned on the following scale:

A	94% - 100%	C	74% - 76%
A-	90% - 93%	C-	70% - 73%
B+	87% - 89%	D+	67% - 69%
B	84% - 86%	D	64% - 66%
B-	80% - 83%	D-	60% - 63%
C+	77% - 79%	F	0% - 59%

Letter grades are described as follows:

A Indicates *exceptional proficiency* and is awarded to those students who have demonstrated consistently superior work.

B Indicates *advanced proficiency* and is awarded for above average work that exceeds the minimum expected competencies.

C Indicates *basic proficiency* and is given for average work that meets the minimum expected competencies.

D Indicates *partial proficiency* and represents below average work that does not meet minimum competencies in a number of areas.

F Indicates *not proficient* and designates work with serious deficiencies that fails to merit a passing grade.

Tests: Four (50 point) tests will be given throughout the course. The tests will be administered in class as indicated in the course schedule. Tests cannot be made up unless there is an excused absence. Test content will include information we covered in class, corresponding chapters in the textbook (including topics we did not get to in class). It is the students' responsibility to make sure they read the chapters and prepare for the tests.

Unit #1 Test	Chapter 1- Psychology as a Science & Psychological Research Chapter 2- Biological Psychology Chapter 3- Development
Unit #2 Test	Chapter 4-Sensation & Perception Chapter 5- Learning Chapter 6-Memory Chapter 7-Cognition & Language
Unit #3 Test	Chapter 8-Intelligence Chapter 9-Consciousness Chapter 10-Emotions & Motivation
Unit #4 Test	Chapter 11-Personality Chapter 12-Social Psychology Chapter 13-Psyc Disorders Chapter 14-Well Being

Quizzes: Fifteen (15) quizzes will be given throughout the course. The quizzes will be completed in eclass as indicated on the course schedule. They must be completed by the beginning of the class period on the date they are due. Quizzes will cover material from outside readings from the text. Each quiz may consist of multiple choice, true/false, and will be worth 10 points each. Missed quizzes will automatically receive a grade of 0 unless the absence is excused. Your lowest two (2) quiz grades will be dropped and will not affect your final grade.

Reflection Journal

You will be expected to write a journal reflecting on the learning done through the text, Simply Psyc videos, class activities, and class discussions. You will be expected to have 7 entries with a minimum of 150 words per entry to be submitted at scheduled times throughout the term. Your reflection should include not only what you have learned but how this learning has changed both how you understand psychology and how you choose to live your life.

Assignments

Psychology in the Popular Media (PPM)

Each student is required to write three (3) 1-page reports of instances of psychological information used in books, magazines, TV, radio, Internet, billboards, etc. One (1) of these reports must come from the Bible. Analyze your source and write your own opinion, and how it applies to a specific topic in psychology. Each PPM is worth 10 points. Reports are due on specified dates. Papers must be in APA style – Double spaced, correct citations, surname and page number in the top right corner and correct cover page. There is a sample paper on eClass.

Lab Activities

You will be assigned different three lab activities corresponding to chapter topics throughout the semester. Each lab will be due on the dates indicated on the course schedule. Some labs will be done in class, while other labs will be done on your own. Each Lab is worth 10 points and will be turned in on eClass.

Other Assignments

Class assignments are designed to help students collectively wrestle with issues pertinent to class material. These assignments are to be completed in class each week. Each one will focus on applying many of the concepts found within the text and sometimes on assigned videos. Class assignments may be individual creative assignments or group assignments and will be announced in class. Attendance is required for participation in class assignments. Completed assignments will be submitted through eClass by the announced deadlines.

Small Group Discussions/Activities: Small group sessions are designed to help students collectively wrestle with issues pertinent to class material. Small groups will be held during class and consist of an appropriate number of students depending on class size. No preparation outside of assigned reading for the day is needed. You will be given full credit for participation. If you are on your phone, or late to class you will not receive credit for the small group assignment.

Case Study: Case studies provide the opportunity to integrate knowledge gleaned from this course and outside readings. You will be asked to present research along with other students on a specific topic of general psychology. Your class presentation will be 25-30 minutes in length. Be creative in your preparation and presentation of this material. Your peer group will evaluate your preparation and the instructor will evaluate the group presentation. Your instructor will evaluate your presentation (75% of your grade) and your group members will evaluate your preparedness (other 25% of your grade).

Things to consider while preparing for your presentation:

8. Do not use your textbook as the main source for your presentation. You should be presenting something new that we have not discussed in class. Do outside research and be creative in what you want to cover.
9. Make sure you dress professionally, as you would for a job interview.
10. Make sure all members of the group have a part in the presentation.
11. Make sure you have a handout for the class (see sample on eClass). I can make copies for you, as long as it's emailed to me the day before your presentation.
12. You must involve the class during the presentation. You can have activities for them, games, Q&A, etc.
13. Case Studies will be assessed using the grading rubric found at the end of the syllabus.
14. Part of your grade will come from the group evaluation by professor; the second part will come from the peer evaluation of your preparation for the case study.

First Half of Semester (FL)

Quizzes will be completed in eClass BEFORE the beginning of class on the due date

Reflection Journals are due in eClass by END OF THE DAY (11:00 pm) on due date

Date	Topic	Reading	Assignment Due
August 20	Syllabus Review/Intro to Course		
August 22	Psychology as a Science	Chapter 1	Quiz # 1 (A & B)
August 27	Research in Psychology	Chapter 1	Reflection Journal # 1 (Ch. 1)
August 29	Biological Psychology	Chapter 2	Quiz # 2; Case Study # 1
September 3	Biological Psychology	Chapter 2	Reflection Journal # 2 (Ch. 2)
September 5	Development	Chapter 3	Quiz # 3
September 10	Development	Chapter 3	Case Study # 2; Reflection Journal # 3 (Ch. 3)
September12	**TEST**	**Chapters 1-3**	**Test- Unit # 1**
September 17	Sensation and Perception	Chapter 4	Quiz # 4; Reflection Journal # 4 (Ch. 4)
September 19	Sensation/Perception & Learning	Chapters 4 & 5	Quiz # 5;

September 24	Learning	Chapter 5	Case Study # 3; Reflection Journal # 5 (Ch. 5)
September 26	Memory	Chapter 6	Quiz # 6
October 1	Memory	Chapter 6	Reflection Journal # 6 (Ch. 6)
October 3	Cognition and Language	Chapter 7	Quiz # 7
October 8	Cognition and Language	Chapter 7	Case Study # 4; Reflection Journal # 7 (Ch. 7)
October 10	**TEST**	**Chapters 4-7**	**Test- Unit # 2**

Second Half of Semester (TR)

Quizzes/Assignments will be due in eClass by END OF THE DAY (11:00 pm) on due date

October 15	Intelligence	Chapter 8	
October 17	Intelligence	Chapter 8	Quiz # 8; Case Study # 5
October 22	Consciousness	Chapter 9	PPM # 1
October 24	Consciousness	Chapter 9	Quiz # 9
October 29	Emotion and Motivation	Chapter 10	Lab # 1
October 31	Emotions & Motivation	Chapter 10	Quiz # 10; Case Study # 6
November 5	**TEST**	**Chapters 8-10**	**Test-Unit # 3**
November 7	Personality	Chapter 11	Lab # 2
November 12	Personality & Social Psychology	Chapters 11 & 12	Quiz # 11
November 14	Social Psychology	Chapter 12	Quiz # 12; Case Study # 7
November 26	Psyc Disorders	Chapter 13	PPM # 2
November 28	Psyc Disorders	Chapter 13	Quiz # 13; Case Study # 8

December 3	Well Being	Chapter 14	Lab # 3
December 5	Well Being	Chapter 14	PPM # 3; Quiz # 14
Final Exam	**December 13- 2:00-3:50 PM**	**Chapters 11-14**	**Test- Unit # 4**

APPENDIX L

INTERVIEW TRANSCRIPTS

Interview 1 Transcription

Tolbert: So, this is Bailey Bryant. The second take, beginning on question number two, and that question is, how did you see your role in a learning environment, and the second part what did you believe were your responsibilities?

Interviewee: Um, so for the role, I kind of saw it as, our role was kind of more important than a normal student and professor relationship. We had more influence on the discussions, and our opinions were more accepted, and we were able to challenge the content more, and I'm sorry… Could you repeat the second part?

Tolbert: So that was your role in the learning environment, so the second question was what did you believe were your responsibilities?

Interviewee: Okay. Responsibilities - just felt obligated to honestly share our opinions, interact whenever called upon, and just volunteer whenever possible. It was - it was - a fun, interactive, learning environment.

Tolbert: Cool. Alright. So now number three - What did you perceive was the role of the instructor in the class?

Interviewee: The role of the instructor for the flipped classroom - since we had to do a lot of the work outside of the classroom, we were studying a lot of it on our own so I felt like the professor's role was mostly to just guide us through what content we were supposed to be focusing on and helping clear up any misconceptions or answering any questions we had about the material that we weren't able to answer on our own, or find on Google.

Tolbert: What about during the traditional classroom?

Interviewee: During the tradition classroom, since we weren't focusing on much as on learning ourselves she was responsible for mostly giving us the information, so we had to rely more on

her. We had to more or less assume she was teaching exactly what was out of the textbook, so we weren't equipped to discuss things. We are kind of seeing everything for the first time, so it was harder to benefit from going to class.

Tolbert: Okay. Number four - How did this experience compare to other classes you've taken?

Interviewee: All the other classes I've taken have mostly been lecture, just purely lecture. You know, traditional classroom style. Especially like A&P classes. You just go and sit and listen to the professor read off some slides, explain stuff their way. There aren't a lot of - there's not a lot of room for questions. You just have to take everything as it is and then try to, if you have questions, try to meet outside of class or go look for it yourself, so it's more impersonal.

Tolbert: So, then the flipped classroom, in contrast, was…

Interviewee: Yeah, the flipped classroom was definitely more personal, and you felt more engaged in the material so.

Tolbert: Okay. The fifth question - What about this experience do you think benefited your learning?

Interviewee: It, the flipped classroom, it Incorporated a lot of different learning styles, so I think it... Like the lecture was there, definitely, just the traditional learning methods, but then we had group activities. We would get up, move around. Group discussions helped, just seeing other opinions that you might not have thought of, and then I mean there were fun projects too. It wasn't all like essays and stuff. We had to like create memes and write about fictional characters that we personally liked and analyzed them, so I really liked the variety of activity she used.

Tolbert: Cool. What about this experience do you think hurt your learning?

Interviewee: I don't know if it really hurt it at all. I mean the flipped classroom, I think my grades were a little better. With the normal classroom I didn't have as much time to review

everything or hear all the material several times in preparation for exams or whatever, so I guess there was a lot more review and time to solidify the knowledge in your brain with the flipped classroom. There was more time to reflect.

Tolbert: Okay. Great! So, this is the last question, question seven. In your opinion how does the flipped classroom model compare with the traditional model?

Interviewee: I mean we've been taught the traditional model for so long. This flipped classroom, it was really refreshing, so I think if it were to be implemented more often, I think a lot more students would benefit from it because there's so many different learning styles in the traditional method only is modeled for one learning style. I feel like the flipped classroom is more doable for a lot of different people - for a larger population. I think it was beneficial for a lot of people.

Tolbert: And just as a tag, is there anything else you'd like to tell me about your experience?

Interviewee: Well Professor Pratt in particular, she just did a great job overall, so I don't know if the professor themselves would factor into that flipped classroom, but I feel like if it was anybody else I don't know how different it would have been, but her energy definitely contributed a lot to it.

Interview 2 Transcription

Tolbert: So, the first question is, what was your experience in the classroom like?

Interviewee: I enjoyed both classrooms. I learned a lot from class A and Class B. The only thing that I had, not really trouble with, but it wasn't beneficial to me was that the quizzes in classroom A were…

Tolbert: When you say classroom A what do you mean? You mean…

Interviewee: The first classroom before the flipped classroom.

Tolbert: So, the traditional?

Interviewee: Yeah.

Tolbert: Okay.

Interviewee: So, the traditional classroom requirement was that the quizzes were due by 11 p.m. at night, and then after it was flipped, it was due 11 p.m. on Sunday night. For me, that was not beneficial because I tried to get all my quizzes done on Sunday due to scheduling, so that was the only aspect that was not helpful for me.

Tolbert: So, the quizzes from the traditional classroom were required to be done by 11 p.m. on Monday night, and you prefer to have them... get everything done on Sunday.

Interviewee: On Sunday, and I realize that kind of put a wrench in the whole plans of doing a flipped classroom; that you would apply your knowledge to the quizzes after you learn the information in classroom... In the first classroom...

Tolbert: In traditional.

Interviewee: Yeah, in the traditional one.

Tolbert: And in the flipped it was do it before you come to class.

Interviewee: Before it. So that was the only thing that was not… That I could not follow for the projects.

Tolbert: Okay, but your overall experience?

Interviewee: My overall experience was very good.

Tolbert: In both?

Interviewee: In both, yes.

Tolbert: Okay. Number two - How did you see your role in the learning environment, and what did you believe were your responsibilities?

Interviewee: For the first class… For the traditional classroom, I would ask questions only if I really wanted to know something, like I had a question about the material. For the flipped classroom, it was much more class participation involved, so a lot more "What is your own opinion?", "How do you see things?", "Do you have personal experience with this?"

Tolbert: So, your role, how would you define that?

Interviewee: For the second... For the flipped classroom, it was more participation. For the traditional classroom, it was more of a student if that makes sense.

Tolbert: Okay, and do you feel like you answered your responsibilities part as well?

Interviewee: Yes.

Tolbert: Okay. Number three - What did you perceive was the role of the instructor in the class?

Interviewee: For the first classroom or second?

Tolbert: For either or both.

Interviewee: For the flipped classroom, I believe Professor Pratt was more like an observer. She would ask us questions, give us projects, and she would observe how we would answer. For the

traditional classroom, she was more of the instructor where she would tell us the information, but the second… for the flipped classroom… I'm sorry I keep calling it second and first.

Tolbert: That's fine.

Interviewee: For the flipped classroom, she was more like this is what I want you to do.

Tolbert: You mean for the traditional.

Interviewee: For the flipped classroom.

Tolbert: Just to clarify, you said first for the flipped, she was more of an observer?

Interviewee: Yes.

Tolbert: And she was… So that was for the flipped classroom? And so now for the traditional one...

Interviewee: For the traditional one, she was more like an instructor where she would give lectures and provide us with information and yeah.

Tolbert: And then did you go back to the flipped to describe what she did there, or are you done?

Interviewee: I'm done.

Tolbert: Okay. Sorry that was my fault there. Not really clear.

Interviewee: It's okay!

Tolbert: Number four - How did this experience compare to other classes you have taken?

Interviewee: I believe that the flipped classroom was more like your... How you teach your developmental psych class, Professor Tolbert. It was a lot more discussions, a lot more hands-on experience. For the traditional classroom, that was what I was more used to. During my high school years, it was more you listen to the lectures, and I did not have to take notes because you could just hit replay, but that was more what I was used to, so I enjoyed both experiences.

Tolbert: Okay. Question five - What about this experience do you think benefited your learning?

Interviewee: For the flipped classroom, I believe that I became closer to my fellow students. We had much more hands-on experiences where we had to search, actively search, for our answers. Instead of solely rely on Professor Pratt for all of them, so I feel like I became closer to them during the second half.

Tolbert: Okay, so question six - What about this experience do you think hurt your learning?

Interviewee: Nothing comes to mind. I mentioned in the beginning that the quizzes... I tried to get all the quizzes done. There was a greater pressure to get the quiz done during the flipped classroom because of my... if I... there a few times where I had to do the quiz during the traditional classroom period. There are a few times I had to scramble to do it in the evening because of scheduling, but that was the only thing that stood out to me and didn't so much as hinder me.

Tolbert: Okay. Alright. Question seven - In your opinion. How does the flipped classroom model compare with the traditional model?

Interviewee: I believe both are beneficial because for the flipped classroom you have the pressure as a student to receive the grade because of the research you do and not just rely on the teacher herself to gather that information for you.

Tolbert: Okay. Is there anything else you would like to add about your experience?

Interviewee: I don't think so. I think that's good. That covers it all.

Tolbert: Okay. Great! Then interview complete.

Interview 3 Transcription

Tolbert: I am here with Irvin Dominguez and for our third interview. In front of you is the informed consent, this is for you. You have already seen this, I sent it you, but just to draw your attention to that specifically. Once all of the interviews are done then I'll enter names in there and do a random drawing so there's a chance that you can do that. So, for this little spiel that I have to read and then a list of questions. This interview is intended to gather information regarding your experience in the general psychology course during the Fall 2018 semester. The purpose of this study was to compare the flipped classroom model of instruction with the traditional model of instruction. The flipped classroom model consists of moving most content delivery out of class to an online learning management system. Using class time for activities that are active and social and requiring students to complete pre and/or post-class activities to fully benefit from in-class work. The traditional classroom model consists primarily of lectures; students mainly taking notes, and out of class homework problems being assigned for students to complete on their own. As I ask these questions, please answer as honestly and as completely as possible.

So, the first question is: What was your experience in the classroom like?

Interviewee: It was a good class. I enjoyed the second part of the semester a lot better than the first part.

Tolbert: So, to clarify, the first part was mainly traditional? And the first part was flipped?

Interviewee: Yes.

Tolbert: Okay. So, you said you prefer the second part?

Interviewee: Yes.

Tolbert: Anything else?

Interviewee: Other than just the traditional kind of...I guess I daydream more in the traditional. I just kind of go out because they talk and talk and talk. I like to do stuff in the classroom or at least have myself, or have the professor stimulate conversation more than teaching or just speaking in class.

Tolbert: Okay cool. Question two, it's a two-part question, how did you see your role in the learning environment and what did you believe were your responsibilities? So first off, how did you see your role in the learning environment?

Interviewee: I guess the first part is that I really had to manage to listen and stay engaged the whole way through for the traditional way first and then once you flipped the class I didn't really have to focus on doing that as much because I was constantly doing stuff. I guess my responsibilities were um…

Tolbert: So, then what did you believe were your responsibilities? To clarify, you just said some of your responsibilities but…

Interviewee: To stay engaged as much as I could.

Tolbert: And was that for the first?

Interviewee: For the first.

Tolbert: So, were your roles and responsibilities different in the second part of the semester?

Interviewee: Probably not. I just didn't think about it as much in the second...in the flipped class...I didn't have to think about it as much because I was always engaged and I was focused because we were doing activities or in-class assignments.

Tolbert: Okay. Question three, what did you perceive was the role of the instructor in the class?

Interviewee: To help me learn the concepts I guess of General Psychology. Obviously in the first part, in the traditional, I had everything on PowerPoints or Prezis. She asked a couple questions but in the flipped class instead of doing that, well she still did some of that, but she would I guess let us do more research in it and let us figure out a little more for ourselves.

Tolbert: So, her role was…?

Interviewee: To help us learn.

Tolbert: *laughs* Okay. Number four, how did this experience compare to other classes you have taken?

Interviewee: I don't think I've ever had a flipped class before so there's that. Differences really...not much. The traditional stays the same within a lot of other classes, at least in the gen-ed classes. There are a lot of lectures and not a lot of engagement I feel like, at least in my experience. But yeah like I liked the flipped class a lot because it was different. I was more engaged.

Tolbert: Number five, what about this experience do you think benefited your learning?

Interviewee: About doing the flipped class?

Tolbert: Yes. Well, about any of your experience during the course.

Interviewee: Well how it benefited me? Well I feel like I learned...I felt like I retained whatever I learned during the flipped part of the class more than the lecture.

Tolbert: Okay. Number six, what about this experience do you think hurt your learning?

Interviewee: Maybe because you came in and said there was going to be an experiment about a flipped class, maybe I didn't do my best in the traditional part because I knew that I would like the flipped class a little more because there was going to be more discussion with our peers or in class in general so I think that.

Tolbert: Okay. Number seven, in your opinion how does the flipped classroom model compare with the traditional model?

Interviewee: Like just the pros and cons?

Tolbert: If you're comfortable with that.

Interviewee: I definitely, like I said before, the flipped class was a lot better because I stayed engaged and I think that a lot of students will benefit from the flipped class more because they're not just listening and maybe they...I know a lot of people like to talk a lot in class but then they really can't because the professor is always speaking. So, I think this is a good way of providing something for everyone or for the greater number of students I guess to where they can figure things out with each other and it also helps them have another perspective on the problem or whatever the case may be by talking with their peers and not just professor's perspective.

Tolbert. Okay great! Is there anything else you would like to share with me about the experience?

Interviewee: I think that's it.

Tolbert: Cool. Thank you very much.

Interview 4 Transcription

Tolbert: As a participant in our qualitative study about the flipped classroom. I have some questions but first I am going to read this little snippet so that you have an idea about what we are talking about here. This interview is intended to gather information regarding your experience in the general psychology course during the Fall 2018 semester. The purpose of this study was to compare the flipped classroom model of instruction with the traditional model of instruction. The flipped classroom model consists of moving most content delivery out of class to an online learning management system. Using class time for activities that are active and social and requiring students to complete pre and/or post-class activities to fully benefit from in-class work. The traditional classroom model consists primarily of lectures; students mainly taking notes, and out of class homework problems being assigned for students to complete on their own. Please use your own words and answer these questions as honestly as possible. So, question number one, what was your experience in the classroom like?

Interviewee: It was very, not quiet but it was, everybody was engaged and everybody listened to the lecture and nobody was distracted. Everybody paid full attention to the lectures, me included, because everybody seemed like they really enjoyed the content and everybody did their best to understand. They asked questions during lectures and they didn't make it seem like "Oh I know everything." Just because it's up on a PowerPoint doesn't mean that it's not going to sink in. They need to study the material on their own and obviously get outside help which I can tell people did that. They did their best to understand.

Tolbert: Cool, thank you. Question number two, it's a two-part question, how did you see your role in the learning environment? You go ahead and answer that part and then I'll ask you the second part.

Interviewee: I wouldn't say that I had a specific role but I mean being a student...that was basically my role. Being a student listening and doing my part as the student.

Tolbert: If you wouldn't mind defining what your part as a student was? Like, what did you believe were your responsibilities?

Interviewee: Obviously to listen to the lectures, discuss in little group sessions because the professor...she would have questions up on a PowerPoint and ask, "Oh, I want you to discuss these in a group of three or four" so that's what mostly engaged the classroom. It wasn't a lecture, she made sure to get the class involved. I would say that I'm more involved than just being the "know" person.

Tolbert: Okay. Number three, what did you perceive was the role of the instructor in the class?

Interviewee: To convey messages or concepts in a way that the students in the class could understand and not to read straight from the book but to take major concepts that she thought that we should learn that would be the major parts that we would bring with us outside of the class. Things we would remember for our long-term memory.

Tolbert: Okay. Question number four, how did this experience compare to other classes you have taken?

Interviewee: It was definitely more involved. It was more interactive with other students, interactive with the professor whereas in other classes the professor presents the presentation and the students take notes. It's not as interactive. That's kind of what I enjoyed is that there was more mingling between the students and between the students and professor.

Tolbert: Okay cool. Question number five, what about this experience do you think benefited your learning?

Interviewee: The group discussions definitely helped me while I was studying because there would be some things on the PowerPoint for us to talk about in our groups and some things she would have us write down, not because it would be for the test, but because it would be more of a mnemonic device in a way. She gave us a lot of, well yeah, that and it was mainly those and like students could talk about their findings. There would be times where we could talk about- she would have specific terms on the PowerPoint and she would want individual members in the group to look up each definition and discuss with the group all that they know about the term without looking at their phone. That benefitted the class as well because it wasn't just something that we had to memorize whereas, well we did have to memorize it for the test obviously, but it definitely helped us understand the concept that we were trying to understand. A lot of the people there didn't understand and a lot of...and after reading back what we had read to our group members, we still had questions because we obviously don't know everything and I feel like everybody did their best to engage in the groups along with asking their questions because everybody wanted to understand. Everybody really did enjoy the class because nobody was on their phones for anything else. Everybody was fully engaged.

Tolbert: Cool. What about this experience do you think hurt your learning?

Interviewee: I would say that I paid more attention to this class than most of my other ones because I tend to stray off into one task whereas I am supposed to be doing more important ones because that was another thing. I enjoyed this class so much that I poured everything that I had into this class.

Tolbert: So, it actually hurt your learning in other classes is what you're saying?

Interviewee: Yes, yes.

Tolbert: *laughs* Alright well last question, in your opinion, how does the flipped classroom model compare with the traditional model?

Interviewee: It was definitely not anything that I was expecting coming into the class. I was thinking, "Oh, we're just going to do the whole traditional thing; the PowerPoint, note taking, then we take our tests and quizzes and everything. But after hearing, oh this is what the flipped classroom is, I thought it was a really great idea too because not only does it train the students' brains because specific assignments were due at specific times. Like, they were usually due at midnight and they were I will say, I plead myself as guilty, that I definitely did a lot of my assignments the night before or the day of-the day that it was due, not the day that it was assigned, and I would say that because it also trained time management. If something is due at midnight, nobody is going to do it after class or, nobody is going to do it-oh this is when it was assigned, nobody is going to do it the day of or the night of that it's due. When everybody knew that the time schedules had changed for due dates, they were like "I need to get my butt in gear and I need to this." So, I would say that it definitely helps. I would definitely recommend that every psychology professor do this because I really like this. It was a really great study.

Tolbert: Cool. Alright, well those are the last of the structured questions. Is there anything else that you would like to add about your experience?

Interviewee: It was really great that it wasn't all traditional because I think that every single class I have been in throughout high school and coming to college, every single one of my classes have been traditional; the whole note taking and then reading outside of class and studying outside of class. Like that got boring to me and this interested me so much more.

Tolbert: Alright, cool! I want to thank you so much for coming in.

Interview 5 Transcription

Tolbert: So, I'm going to read a, this is for you, you have this, I emailed it to you. But this is for you to keep if you want that. I'm going to read a little snippet and then I have some questions and then we're done.

Interviewee: Okay.

Tolbert: This interview is intended to gather information regarding your experience in the general psychology course during the Fall 2018 semester. The purpose of this study was to compare the flipped classroom model of instruction with the traditional model of instruction. The flipped classroom model consists of moving most content delivery out of class to an online learning management system. Using class time for activities that are active and social and requiring students to complete pre and/or post-class activities to fully benefit from in-class work. The traditional classroom model consists primarily of lectures; students mainly taking notes, and out of class homework problems being assigned for students to complete on their own. Please answer as honestly and as completely as possible. First question: What was your experience like in the classroom?

Interviewee: It was very unique and I really liked the lecture of everything, she was a really great teacher. She helped me understand things and if I needed help I would go ask her or whatever but it was actually my favorite class of the semester. I really enjoyed psychology.

Tolbert: Very nice. Okay number two, it's a two-part question. I'll give you the first part and then I'll give you the second part. How did you see your role in the learning environment?

Interviewee: My role as a student was to listen and to comprehend what she was lecturing. Basically, just learn from the lesson. I felt like the switch was very helpful and it wasn't too stressful as for another class. I think they should do the switch more often. I do have a class this

semester that does the switch and so I'm waiting to see how that turns out and I'm hoping that it's as good as the psychology class.

Tolbert: Just for clarification, when you say "switch" what do you mean?

Interviewee: Like the, you know how last semester she did a switch activity thing where half of her class would do this thing and the other half would do the other switch.

Tolbert: Right, so first half was basically lecture based but then the second half you had to switch to…

Interviewee: Right, you basically had more homework because you had to watch videos and read things and then you had to discuss them in class.

Tolbert: So, you liked that second part?

Interviewee: Yes, well I liked both of them.

Tolbert: The second part of that question is, what did you believe were your responsibilities?

Interviewee: Well for the second half of the semester my responsibility was to watch the videos and basically teach myself so that when I got into class I could discuss what I had learned over the videos and everything.

Tolbert: And that was different from the first half?

Interviewee: Yes.

Tolbert: Okay. Number three, what did you perceive was the role of the instructor in the class? You can differentiate between the first half of the class and the second.

Interviewee: Okay well, her role for the first half was to lecture us on the lecture that we were going to be learning and basically sum things down to where we know how to do our homework and give us good notes so that when we take our notes it is easier for us to do our homework.

Tolbert: Okay and with the switch was it the same or was it different?

Interviewee: It was different. We were basically teaching ourselves.

Tolbert: Mm okay. Number four, how did this experience compare to other classes you have taken?

Interviewee: The stress level mostly because in all my other classes it was just "follow the syllabus and step step step" but the psychology class was very much different and less time consuming because you're not as stressed. It's just-I liked how the class flowed.

Tolbert: Even though you had exams and things like that it wasn't as stressful as other classes?

Interviewee: No.

Tolbert: Number five, what about this experience do you think benefited your learning?

Interviewee: It taught me how to stand on my own and how to teach myself.

Tolbert: Really? Valuable things.

Interviewee: Yes.

Tolbert: What about this experience do you think hurt your learning?

Interviewee: I'm a very visual and hands-on learner so just sitting at a desk and taking notes was very-it really didn't teach me much. The second half, having to push my learning and having to teach myself helped me. The first half wasn't as helpful as the second half. I just took notes and didn't pay attention as much so the second half I had to.

Tolbert: Okay. Last question, in your opinion, how does the flipped classroom model compare to the traditional model?

Interviewee: Like how are they similar?

Tolbert: Yeah how are they similar and how are they different? How would you value them?

Interviewee: They're different because of the stress level. They're the same because you're learning the same material but in a different format basically.

Tolbert: And as far as value? Do you value...

Interviewee: I feel like they don't have the same value. I feel like a switched class has more value because it's teaching you different lessons than you would be on a regular schedule basically.

Tolbert: Alright great, well is there anything you would like to add about the class and your experience?

Interviewee: No not really.

Tolbert: Alright well this concludes our interview.

Interview 6 Transcript

Tolbert: I have this little snippet that I read beforehand so that you are fully informed and then we'll go into the questions.

Interviewee: Alright.

Tolbert: This interview is intended to gather information regarding your experience in the general psychology course during the Fall 2018 semester. The purpose of this study was to compare the flipped classroom model of instruction with the traditional model of instruction. The flipped classroom model consists of moving most content delivery out of class to an online learning management system. Using class time for activities that are active and social and requiring students to complete pre and/or post-class activities to fully benefit from in-class work. The traditional classroom model consists primarily of lectures; students mainly taking notes, and out of class homework problems being assigned for students to complete on their own. Please answer in your own words as honestly as possible and for each question consider either the flipped classroom or the traditional model of the class or both at any time. Okay so first question is what was your experience in the classroom like?

Interviewee: For the class in general or the different kinds?

Tolbert: Both!

Interviewee: Well traditional is kind of like every other class, you take lectures, you take notes, you do homework online, you take tests over the typical information...you know it was good, the same as other classes. I really enjoyed the flipped classroom more when it comes to the style because I'm more of an extrovert, so I like the interactive activities, discussing ideas, and all that. I really enjoyed the flipped classroom. I did everything outside of class which gives me kind of my own time to do it when I can and it doesn't just compress into one class period. The class

overall, I really enjoyed it. Cristy Pratt is one of my favorite teachers honestly so I loved the class overall and I really liked the idea that we got to see like "oh yeah this is the traditional, this what you're used to," and I really enjoyed the flipped classroom.

Tolbert: Very nice. Okay so question two, it's a two-parter. I'll give you the first part and then after you answer I'll give you the second part. How did you see your role in the learning environment? Obviously, a student, but when we talk role we're talking about your set of behaviors that are typical for the student. So how did you see your role in the learning environment?

Interviewee: So, where I was sitting particularly in the class I think this is where the question is leading kind of in the classroom itself I always like to participate in it, so like if she ever called volunteers up, I always enjoyed going up, playing the part I needed to. I got to play the narcissistic guy and that was fun and then I got to be a jerk and get off scot-free for it so I think my role in the class was to be a sub-teacher in itself because in a group with the people I was sitting around, a lot of the people were a lot more quiet, they didn't really speak up a lot, they would say a few words maybe but they wouldn't really interact a lot together so me and one of my other friends in the group were both the extroverts and so constantly it was me and him going like, "Hey, what do you think about this?" We were constantly trying to swirl the group around saying, "How do you feel about this? Well I think it's kind of like this way but what would you say on this, like do you agree with this?" So, I was kind of a co-leader in the class. Of course, not being the professor itself but kind of being like a little group leader in itself to help stir conversation whereas everybody who kind of understands it had a lot more points of views than just one.

Tolbert: What did you believe were your responsibilities?

Interviewee: To get an A. *laughs* I guess in the classroom content itself the responsibility was to know what you were talking about, to be prepared for it so that you're not going in there looking like an idiot. So, going in there informed about why you have the opinion that you do. What's your fact behind it? That would make the discussion a lot more informative than people just yelling their opinions out without any proof.

Tolbert: Yeah, yeah cool. Number three, what did you perceive was the role of the instructor in the class?

Interviewee: In the traditional aspect of it, the professor does everything. They do the lectures, they ask questions, they guide everything. That's what they do. But in the flipped classroom, it was almost interesting us to be able to teach ourselves. It wasn't like she wasn't there to teach us of course, I'm not saying that, but her role was to give us a guideline of what we were doing; the activity sheets we were working on, the little play things we did, or just going around the classroom. It was kind of like giving us our own responsibility to be able to lead out a discussion or be able to play out a part in the class. So, we're not just sitting there in class going, "Okay, you know we've done this for 12 years now. We're in college. We're used to this. We've done this since kindergarten." But it actually got us into it, it got us feeling like we were a part of the class, like we could give our own input into the class which always makes people feel more welcome even if they're introverts and don't really speak. They still feel like "Okay well at least someone else cares about our opinion." So, I think that's what Mrs. Pratt did a lot with the flipped classroom. It gave us a voice in the class.

Tolbert: Cool, so question four, how did the experience compare to other classes you have taken?

Interviewee: Again, so most classes are traditional, they are lecture based. So, a lot of them are boring, you just sit there, and you wait and you wait. You write notes, you listen, so for me that's kind of like torturous because you have to sit there quietly for like an hour and fifteen minutes and you just nod your head and keeping going and keep going and keep going but this class, of course we did that in the first part of the semester. But the second part of the semester was enjoyable actually having that discussion time. I wish a lot more classes were like this, like religion classes would be handy and of course psych classes would be good. Those kind of classes, I don't really know about English, I don't know if you can really do a discussion on English, "Oh do you agree on this and that and is this the verb?" That would be boring but especially with psych and the religion building, those are my two majors, that's what I do. I think the flipped classroom would be very important to set the guidelines in all aspects of the class. So, like with the flipped classroom it was a really good experience because you did get that experience

Interview 7 Transcript

Tolbert: To start this off I am going to read this little paragraph here that talks about what the interview is about just so that you are fully informed. This interview is intended to gather information regarding your experience in the general psychology course during the Fall 2018 semester. The purpose of this study was to compare the flipped classroom model of instruction with the traditional model of instruction. The flipped classroom model consists of moving most content delivery out of class to an online learning management system. Using class time for learning activities that are active and social and requiring students to complete pre and/or post-class activities to fully benefit from in-class work. The traditional classroom model consists primarily of lectures; students mainly taking notes, and out of class homework problems being assigned for students to complete on their own. Please answer in your own words and feel free to answer as honestly as possible and feel free to differentiate between the flipped or the traditional as you see fit. So, first question, is just a basic question, what was your experience in the classroom like?

Interviewee: It was good. It was very interactive. It's actually my second time taking gen psych, I took it in high school and I got a B. I passed the AP exam but I got a B overall in the class so I was like "Oh, I just retake it to get the A." So, I have the traditional classroom this semester and last semester I took the flipped classroom and for gen psych I would say that I prefer the traditional classroom just because there is so much information, like it's very information. And in the general classroom setting we would have discussion but not as much as we did here in Southern as much as I did here with Professor Pratt but I feel like there is just way too much to cover and even though discussion, you do the learning by yourself and everything, I would rather have lectures and have a professor give me all of the information and yeah. Just because there is

so much and the other thing with psychology is there is so much to discuss so discussions can, like you never stop discussing for psychology.

Tolbert: Okay, so the second question is a two-part question. I'll give you the first part and then after your answer I'll give you the second. How did you see your role in the learning environment?

Interviewee: So, it was basically me teaching myself versus the teacher. Like the teacher was only there to correct or encourage something so I would say for that.

Tolbert: What do you believe were your responsibilities?

Interviewee: Basically, learning the material and just keeping up with all the expectations. For example, the quizzes and the tests, the assignments. Making sure that I was learning on time and when she wanted us to be ready.

Tolbert: Okay. Number three, what did you perceive was the role of the instructor in the class?

Interviewee: Instructor? I would say that she was there to further our understanding of a particular theory or psychologist. She was there to give us a more deeper and more thoughtful insight of whatever it was that we were learning.

Tolbert: Okay, number four. How did this experience compare to other classes you have taken?

Interviewee: Since I've taken it twice I'm a little biased because I myself personally I prefer having a traditional classroom when it comes to, like when there is a lot of information. I feel like when any course there is a lot of information but with gen psych there is just so much to cover I feel. I do appreciate the discussion that we had and doing group projects like that's very important but for me I felt like I preferred the traditional setting.

Tolbert: Number five, what about this experience do you think benefited your learning?

Interviewee: It helped me further my understanding. Since I've taken it twice I already had most of the concepts and everything down but Professor Pratt did a very good job in showing me other perspectives of psychology and especially being here at a Christian school, my high school was public, I learned a lot more spiritual way. Yeah it is just a lot more deeper than what I had learned in a regular classroom setting.

Tolbert: What about the experience do you think hurt your learning?

Interviewee: I felt that there should be, since there is a lot to cover you have to go through it so fast and we were doing a lot of discussions sometimes that it was very deep. Sometimes we didn't necessarily focus too much on everything, you know what I mean? What I'm trying to say is that since there is so much to cover, sometimes it would be too deep and there wouldn't be enough emphasis on the core information I feel.

Tolbert: Okay this is the last question. In your opinion how does the flipped model compare with the traditional model? We've kind of talked a little bit about it but feel free to expand.

Interviewee: With the traditional classroom you just learn the material. It's like, "Here I'm going to shove a bunch of material down your throat and I expect you to know it by a certain day." With the flipped classroom it's like, yes, you do have that duty to memorize everything and know everything but I feel like in a flipped classroom it's more of a relaxed setting in which you grow a like for the class because when you took the traditional classroom they're just like "Here, here here, learn this, this, and that." But here in the flipped one Professor Pratt she sort of gave us a lot of more interesting details that helped us like that class even more than like you normally would in a class because I feel like you just gain a different perspective of that subject. So yeah.

Tolbert: Okay wonderful. Is there anything that you would like to add?

Interviewee: No that's it.

Tolbert: Thank you.

Interview 8 Transcript

Tolbert: Alright so we are in interview number eight and I just have a little snippet to read and then I will ask you the questions. This interview is intended to gather information regarding your experience in the general psychology course during the Fall 2018 semester. The purpose of this study was to compare the flipped classroom model of instruction with the traditional model of instruction. The flipped classroom model consists of moving most content delivery out of class to an online learning management system. Using class time for learning activities that are active and social and requiring students to complete pre and/or post-class activities to fully benefit from in-class work. The traditional classroom model consists primarily of lectures; students mainly taking notes, and out of class homework problems being assigned for students to complete on their own. Please answer honestly and with as many words as you would like. And also, this is to address either style of classroom if you want to talk specifically about the flipped or just about the traditional you can feel free to say that. So, the first question is what was your experience in the classroom like?

Interviewee: Define experience like what do you mean by…

Tolbert: Well you were in the classroom and your interaction with the professors, with students, with the information that you were learning.

Interviewee: I enjoyed the class pretty much. It was very informative and Professor Pratt went through a lot of different topics very clearly, I guess. I understood the subject pretty well so…

Tolbert: Okay. Alright. Second question is a two-part question that is connected. How did you see your role in the learning environment?

Interviewee: Well I don't know if I had much of a role but my role? I mean the best thing I can think of is maybe like a student because I'm not, to be honest I didn't try to involve myself in the class too much because I was there to be in the class. I enjoyed it but I'm not the kind of person to like put myself out there and do stuff that I'm not comfortable with. So, I was kind of in the background but I'm perfectly fine with that but yeah…

Tolbert: Well the second part, what did you believe were your responsibilities?

Interviewee: To learn the subject I guess. I'm a clinical psych major so this class is pretty important so my job I guess was to make sure I understood the stuff well enough for me to pass the class and keep the knowledge I guess.

Tolbert: Okay. Question three, what did you perceive was the role of the instructor in the class?

Interviewee: The professor was supposed to be an educator. She is supposed to get the class involved in what she's doing, and she did get us involved in some kinds of projects and occasionally the cellphone poll things. She would try to get the class involved so that maybe we could retain the information better.

Tolbert: Okay. Number four, how did this experience compare to other classes you have taken?

Interviewee: Last semester it was different because I wouldn't say that it was easier than my other classes but it seemed like it was more simpler in a way. Not simpler as in easy but simple as in where I could understand things pretty well. The lectures, like you could take notes on the lectures, but I didn't feel like I needed to take notes on the lectures because she explained everything very clearly and even if I needed to go back, she puts her lectures online so I could go back and check on it.

Tolbert: Okay. What about this experience do you think benefited your learning?

Interviewee: I mean just back to the simple thing I guess. I'm not the kind of guy to like just lectures upon lectures. I can't understand everything just by lectures but she implemented discussions and I'm a discussions kind of guy so if there's discussions and I'm actively talking about it then I will understand it better which is probably why I didn't do so well in bio or anything. *laughs* Because it is just lectures upon lectures and I'm not...I don't learn that kind of way. I learn through discussions and talking to other people about it. So, I feel like that was better for me. Even the traditional classroom setting, last semester, even that felt like discussions because she would sometimes tell us to get into groups to talk about this certain topic or whatever.

Tolbert: Okay cool. Question number six, what about this experience do you think hurt your learning?

Interviewee: I guess sometimes I couldn't see a way how it would hurt my learning because for all intents and purposes for me it felt like it improved my learning experience. I don't know I felt a little bit uncomfortable for the flipped class portion because I've never had a flipped class before so this was new to me but I don't think it impacted me negatively too much. It just made me feel a little uncomfortable but I think I got rid of that feeling soon enough so…

Tolbert: Okay cool. Last question: In your opinion, how does the flipped classroom model compare with the traditional model?

Interviewee: Well the traditional is like lectures and stuff. During class we could read ahead to make sure we knew what the lectures were about but we didn't have to because we were going to discuss it. But for flipped since we had to read beforehand and re-discuss it in class or talk about it in class...I to be honest prefer the traditional over the flipped but that's mainly just because I'm more comfortable with the traditional version of classrooms because I've never taken a flipped

class before. But comparatively I think they're both pretty much not...well they were beneficial. They weren't detrimental to me so...yeah.

Tolbert: Okay. Is there anything else you would like to add about your experience or anything?

Interviewee: No, to be honest during the semester I remember you coming into class and saying that there you were conducting a study and the next half of the semester was going to be a flipped class. To be honest I didn't really notice a major difference between the two, like I knew something changed but I didn't feel like there was any difference in how I approached the class you know? Yeah.

Tolbert: Which means that you felt that you had to be prepared to the same amount? You felt like things in the classroom were similar and your performance was similar?

Interviewee: Yeah, pretty much. I didn't really feel too much of a difference between the two teaching methods.

Tolbert: Okay great. Thank you very much.

Interview 9 Transcript

Tolbert: We are now starting interview nine. Before I start asking questions, I have this little paragraph of a description of what this is about so that you can understand that. This interview is intended to gather information regarding your experience in the general psychology course during the Fall 2018 semester. The purpose of this study was to compare the flipped classroom model of instruction with the traditional model of instruction. The flipped classroom model consists of moving most content delivery out of class to an online learning management system. Using class time for learning activities that are active and social and requiring students to complete pre and/or post-class activities to fully benefit from in-class work. The traditional classroom model consists primarily of lectures; students mainly taking notes, and out of class homework problems being assigned for students to complete on their own. Please answer each question as honestly as possible using your own words. If you find it helpful to separate and talk about each-the flipped classroom and the traditional classroom individually, you are welcome to do that. So, the first question, what was your experience in the classroom like?

Interviewee: My experience in the classroom was, I think it was very informative. I think that Pratt did a good job of explaining everything in detail. For me, I'm very visual, so the flipped classroom helped me understand how the foundation of psychology is. It helped me describe the basic concepts of it.

Tolbert: Okay. The second question is a two-part question, the first part is-how did you see your role in the learning environment?

Interviewee: How did I see my role in the learning environment? I saw my role in the learning environment...I would say…

Tolbert: Let me ask you the second part and maybe this will help. What did you believe were your responsibilities?

Interviewee: I guess to understand what's around me and understand the basic concepts around me. Just to have an understanding of what it is.

Tolbert: A role is a set of behaviors so when you think about what you were asked to do in the learning environment, what set of behaviors was part of your role?

Interviewee: Set of behaviors...I would have to say...I don't think I'm understanding the question clearly.

Tolbert: So, your role is as a student. How as a student did you see you were expected to behave in the class? What kinds of things were you expected to do?

Interviewee: For my research we were expected to observe and understand the material correctly. Um yeah.

Tolbert: Number three, what did you perceive was the role of the instructor in the class?

Interviewee: To be able to explain the work and the material well to us so that we would be able to understand it. So, like, different theories and different things we learned. I think that was their role to explain it and everything.

Tolbert: Okay. Number four, how did this experience compare to other classes you have taken?

Interview: Okay so the first part of it wasn't flipped. It was just a basic class. Just like tests and everything, but once we flipped it we were able to have more activities in the class and were able to do hands-on stuff. It was different because we were able to have different understandings of how you know, the different things that we were doing. We were able to visualize and be able to interpret things in a way we could yeah.

Tolbert: Number five, what about this experience do you think benefited your learning?

Interviewee: It benefitted my learning because I am a...it takes me awhile to understand things. So, it helped me grasp things in ways that I thought I thought I couldn't grasp things. It helped me have a different perspective on certain things. It helped me be able to explain to people in other ways because everybody has this idea of what psychology is and it helped me understand another meaning of it.

Tolbert: What about this experience do you think hurt your learning?

Interviewee: I would have to say, I know this may sound weird but the textbooks kind of messed me up a little. I know how to go through and read textbooks, but I'm more of like visually-I need to see it for myself so I think that probably kind of didn't help me a little.

Tolbert: Okay. This is the last question. In your opinion, how does the flipped classroom model compare with the traditional model?

Interviewee: Traditional model I guess is just a basic way of learning so just the basic lectures and everything. But the flipped side of the class also we were able to learn but in a different way or with a different structure. It's definitely the same comparisons yeah, we did sit at our desks or whatever but we were able to go around and have discussions and everything and we were able still to learn in each way.

Tolbert: Okay is there anything else you would like to add about your experience?

Interviewee: I think it's might...general psychology is a good glass and I think it's beneficial to anyone who is a psychology major. Overall my experience was good. I wish I probably would have been able to expand my-I was able to be able to-I feel like I understand the material but I feel like I, myself, wish that I could have learned another way as far as being able to voice my

opinion like in discussions or be able to be more participating in class. So, I think firmly I could have done better with that.

Tolbert: Okay, great.

Interview 10 Transcript

Tolbert: Okay so this is interview ten with Sierra Scribner and we are about to have the qualitative interview questions. So, what these questions relate to is your experience in the classroom. So, you will have the answers for these as long as you just give me your experience in answering the questions then we should be fine. I have this little blurb that I read at the beginning of each one so I will read that through, it kind of explains a little bit, and then we'll get to the questions. This interview is intended to gather information regarding your experience in the general psychology course during the Fall 2018 semester. The purpose of this study was to compare the flipped classroom model of instruction with the traditional model of instruction. The flipped classroom model consists of moving most content delivery out of class to an online learning management system. Using class time for learning activities that are active and social and requiring students to complete pre and/or post-class activities to fully benefit from in-class work. The traditional classroom model consists primarily of lectures; students mainly taking notes, and out of class homework problems being assigned for students to complete on their own. Please answer each question as honestly as possible and as you answer these questions if you want to answer specifically toward the flipped classroom portion or the traditional classroom portion you are welcome to do that. So, the first question is what was your experience in the classroom like?

Interviewee: I think my experience in the classroom was literally always positive and I always looked forward to it. Psychology family systems, it is my major, so of course I'm going to be more into it than someone who is a med student, but the way that Professor Pratt had us engaged, and I think, I don't remember if it was the flipped classroom-it may have been, where she would have us act. People would act something out in front of us. So, like, she would put examples of

something that happened in psychology in our book and we would have people come up and we would do personality theories. And she would have different personalities of people up front and I literally cannot forget it. I am still picturing the same people right now. So, it was something that always helped me on the test. I literally was like, okay Professor Pratt just set it up for me and then I would know the answer immediately. I think that was a good way for me to learn at least.

Tolbert: Cool. Alright question number two is a two-part question. How did you see your role in the learning environment?

Interviewee: Hm my role. So, meaning what I would give to the classroom? There were opportunities were you could be more up there doing it. Doing whatever she had for the class that day but that's not really me. I would rather watch and then keep it in my head. If I do it, I actually will forget it. Does that make sense? Seeing it though, literally I cannot forget. So, I never really did a role up front.

Tolbert: Well when I say role, it's basically any of the things that you would do in class as a student.

Interviewee: So, like the PowerPoints and stuff like that?

Tolbert: Not just up in the front, but on a normal day.

Interviewee: Oh. So, we didn't do much of hearing just lectures. We wrote a lot of papers, oh yeah, I wrote a lot of papers. I remember that we did reflection journals. Those were my favorite. I could tie in the Bible to whatever my psychological disorder was literally I loved it so much. I think I wrote over 25 of those.

Tolbert: So, thinking on that, what did you believe were your responsibilities?

Interviewee: To honestly enjoy getting my A. You know? It was easy as long as you just put forth effort it was just easy. I didn't really have, there are definitely deadlines for quizzes and for your papers. Then we would do group projects in class and we would turn them in immediately. We definitely had stuff to keep up on but it was nothing where you're constantly by yourself doing everything. You know?

Tolbert: Okay number three, what did you perceive was the role of the instructor in the class?

Interviewee: To teach us what she needed to show us, like you know, for the class. But I feel like Professor Pratt makes it very tangible. She is kind of just talking to you. She not really like "blah blah blah" it's like she knows everything and like she was just having a conversation with us so it was easy. You do that too in class, like it's just effortless and that is the best way to learn I feel. Once you put on that PowerPoint and just "blah blah blah" oh my word. When professors do that… *laugh* Girls and guys check out. You know what I mean? She made it very effortless. It was just like a conversation I feel like. She was quite amazing the way she could have that conversation with every single one of us.

Tolbert: Okay number four, how did this experience compare to other classes you have taken?

Interviewee: It was honestly raw. It was kind of how human sexuality is like, you're just putting your thoughts and everything that's in your head for that type of class you can say and you can do. I feel like general psychology was like that as well, it was, I had so much insight all the time and I could put it into my daily life. I could say psychological terms and I could come up with these theories I had remembered and I could write these papers so easily because class was just...I was going to class because I always enjoyed it. I mean I always go to class, but it wasn't work. You know? It was just fun. I just really liked it and I still think about that class when I go in that room and I think, "That was just the best class." So, I enjoyed it a lot.

Tolbert: So, you've kind of talked a little bit about this but maybe you can get more explicit, number five: what about this experience do you think benefited your learning?

Interviewee: The way I can implement it into my daily life and the way that it made me just feel like I was going to my classes but I was taking it back home with me. I wasn't just taking it for the test, I was taking it for life in general. I mean that's one of the greatest feelings because my job is to go to school right now in a way. You are my boss and I am supposed to do as well as I can in this job and I feel like I was taking this insight home and taking it to conversations. It made me feel much more intelligent as well. It stuck in my brain. I was revolving around these psychological terms and the way that I was perceiving life and things and feelings and it was just deeper than just that surface level conversation that you would have or that you would think in your own thoughts. I think that's about it.

Tolbert: So, number six, what about this experience do you think hurt your learning?

Interviewee: Sometimes I'm not the best test-taker. I'm good at the quizzes, I'm good at everything, but the tests are not always phenomenal. I usually cannot always just get an A on a test, so I don't know if it hurt my learning but I usually got Bs on the tests. I don't' know what that meant but I feel like that was almost a good thing because I never got a C or did poorly but I don't know if it increased my test-taking ability to where I was already at. Does that make sense? I've just really never been good at taking tests.

Tolbert: Alright number seven in your opinion, this is the last question, how does the flipped classroom model compare with the traditional model?

Interviewee: So, my first part of the class was that traditional classroom, the first time when I was from August to after Thanksgiving or…?

Tolbert: Um I can't remember which section you were in.

Interviewee: What sections are there?

Tolbert: What time did you take class?

Interviewee: Three.

Tolbert: Okay so it was two o'clock.

Interviewee: Yeah, sorry. Monday Wednesday.

Tolbert: So, I want to say that you were in the flipped classroom in the first part and the traditional in the second but I can't remember.

Interviewee: Yeah, I can't either.

Tolbert: You can describe what your experience was like in the first half and then maybe describe it in the second half.

Interviewee: Right okay. I really only remember the parts where we would….she would talk a little bit and then she would have people do...I really only remember that personality one and then everything is starting to go away. I think the part where she would bring us to psychology or entering the world and it wasn't just listening to her, we would actually do it, that was the best and I think that may have been flipped.

Tolbert: Sounds like it. The traditional is where she does most of the talking but if in the flipped is where she maybe talks a little but you are active.

Interviewee: Yes, when she talks a little and then we were active was the best one I believe for a lot of us too. But that's the one that I will never forget.

Tolbert: Is there anything else you would like to add?

Interviewee: I think that's it. Are you trying to do this more? Like the flipped classroom? To see if it is something that worked?

Tolbert: This study specifically is to find out if there is any difference in your academic performance and your critical thinking and in your overall evaluation perception of the classroom if there is an difference between the flipped classroom and the traditional classroom. So yes, that is the purpose of this study; to find out if one might be better than the other, if they are about the same, we'll figure that out.

Interviewee: Okay, I would say that the flipped classroom helped with my critical thinking. Absolutely. I could literally write papers in 30 minutes and get As on them because I just felt like intelligent, like expansion in my brain! I don't know, I think it does something when you are kinesthetically learning and stuff like that. I think the flipped classroom is really great but my grade stayed the same. I didn't really fluctuate too much so I don't' know if I'm really the best for this type of thing because it really stayed at a 96 the whole time but I know my friends were saying that they loved the flipped classroom. I liked it too.

Tolbert: Alright cool.

Interview 11 Transcript

Tolbert: Pretty straight forward-what I'm going to do first is read a little snippet of something to kind of just refresh your memory and then I have seven questions that you will be asked. This interview is intended to gather information regarding your experience in the general psychology course during the Fall 2018 semester. The purpose of this study was to compare the flipped classroom model of instruction with the traditional model of instruction. The flipped classroom model consists of moving most content delivery out of class to an online learning management system. Using class time for learning activities that are active and social and requiring students to complete pre and/or post-class activities to fully benefit from in-class work. The traditional classroom model consists primarily of lectures; students mainly taking notes, and out of class homework problems being assigned for students to complete on their own. Please answer each question as honestly as possible and in your own words. If you would like to differentiate between the flipped classroom portion and the traditional classroom experience please do so if you wish. So, the first question is very broad: what was your experience in the classroom like?

Interviewee: During both classrooms?

Tolbert: Again, that's up to you. If you want to sit and talk about both together or if you want to differentiate them out that's your call.

Interviewee: I guess I enjoyed the in-class activities a lot better during the flipped classroom because it was a lot more interactive. But I learned more during the traditional because I retain more when someone else is saying it. I don't know, it's...I don't comprehend well when I read on my own so...it's better if I'm hearing it from someone else. Does that answer the question?

Tolbert. Sure, absolutely. That's your experience. Number two is kind of a two-part question. How did you see your role in the learning environment? By role we are talking about a set of behaviors that you were expected to do in the learning environment?

Interviewee: Definitely in the flipped classroom it was the reading because we didn't really go over that in class. It wasn't "Okay we're going to learn about this stuff," it's "You should have already learned about this" so now we're going to talk about it or do an activity about this. So, I definitely would say that the reading was our goal, to learn outside of class and to be able to come to class and communicate together.

Tolbert: What did you believe were your responsibilities?

Interviewee: Oh.

Tolbert: No, that's the second part of the question.

Interviewee: Oh okay. Responsibilities? Reading. I don't know.

Tolbert: What about in class?

Interviewee: I don't know. I guess being part of the discussion. Joining in and you know, if no one very joined in then there wasn't really going to be discussion or the activities wouldn't have been fun because nobody would have been doing anything. I guess that if that makes sense.

Tolbert: It does. It does make sense. Just speak up a little louder so that we can hear it. Number three, what did you perceive was the role of the instructor in the class?

Interviewee: Traditional classroom would have been to teach the material and I guess in the flipped classroom it would have been to guide us and to answer questions that we may have on the stuff we learned on our own. So…

Tolbert: Alright cool. Question four, how did this experience compare to other classes you have taken?

Interviewee: I guess the only thing that was different since it switched half way through it made it confusing for me because like, when are things do now? Because we switched and I missed like three quizzes in a row because I kept forgetting that they were due at a different time so I guess that way was a little more difficult than other classes just because there was that switch but yeah, no different than any other classes besides that.

Tolbert: Okay so the flipped classroom area, you didn't see that as being much different from other classes?

Interviewee: I noticed a lot of classes tend to do that at least partially. At least in the psychology department since that is where my classes are.

Tolbert: Alright, so what about this experience do you think benefited your learning?

Interviewee: It helped me learn that I actually have to read. *laughs* Because throughout high school I never really read the material because it was always taught up front in class. Then I got here and you know it's that way some of the time but not all the time. And sometimes professors leave things out that they expect you to read so it's a lot better to read on your own and it kind of gave me the patience to actually do that since I actually had to. Because it would be important to talk about in class. I guess that's how it helped me.

Tolbert: You have kind of alluded to this before but I will ask you more specifically, question six, what about this experience do you think hurt your learning?

Interviewee: Just the fact that it switched in the middle and it brought my grade down because I missed a few things. With the flipped classroom having to do everything outside of class like all the reading, I wasn't learning as much specifically. If that makes sense.

Tolbert: Sure. So, the last question is just another broad question. In your opinion, how does the flipped classroom model compare with the traditional model?

Interviewee: Like explain. Compare how?

Tolbert: Are you repeating the question or are you asking for clarification?

Interviewee: Asking for clarification *laughs*

Tolbert: So, the flipped classroom model with the emphasis on preparation before class and active stuff in class and the traditional model with more of the lecture what you call teaching in class and then homework outside of class...how would you say they compare to one another?

Interviewee: They're definitely a lot different. I think doing the active stuff in class probably helps a lot of people just because you get to talk with other people who are in the class. You're not necessarily doing the homework and studying alone. You get to talk with other people and if you have those questions, you can ask a lot easier rather than being by yourself and being like, "I don't understand what I'm supposed to be doing." I don't know.

Tolbert: Often when we say "compare" we're talking about the value of as well.

Interviewee: I honestly probably although I like the lecture style some, just because I learn better, I would probably say that the value of the flipped classroom was better or higher or something. *laughs*

Tolbert: Okay. Well is there anything else that you would like to add?

Interviewee: Not really, no.

Tolbert: No that's fine! That's perfectly fine.

APPENDIX M

COURSE DESCRIPTION

PSYC 122 - General Psychology

3 hours

A beginning course in the basic principles and concepts of psychology. This course provides an exposure to a wide variety of human behaviors, which may include but are not limited to: sensation, perception, learning, memory, thinking, development, motivation, and personality. Hours of active learning are included in this course. Required of PSYC majors.

FALL | WINTER

VITA

Matthew Warren Tolbert was born in Chattanooga, TN, to Gary and Malia Tolbert. He attended Jacksonville Junior Academy in Jacksonville, FL, Fort Myers Junior Academy in Fort Myers, FL, Yakima Adventist Academy in Yakima, WA, and Upper Columbia Academy in Spangle, WA. After graduation, he attended Walla Walla College in Walla Walla, WA, and then Southern Adventist University in Collegedale, TN, where he became interested in theology and religion, graduating with a Bachelor of Arts in Religious Studies degree in 2001. After graduating, Matt served as assistant chaplain at Southern Adventist University for one year and then chaplain at Mount Vernon Academy in Mount Vernon, OH for another year before heading back to Southern Adventist University to earn a Master of Science in Community Counseling in 2005. After graduating, he worked for a federal grant in Cleveland, TN, as a Behavior Prevention/Intervention Specialist before accepting a position as an instructor of psychology at Cleveland State Community College where he eventually earned tenure and the rank of associate professor as well as two awards for Outstanding Instructor of the Year. Matt completed a Ph.D. in Learning and Leadership at the University of Tennessee at Chattanooga in the fall of 2019. He currently serves as Associate Professor of Psychology at Southern Adventist University.