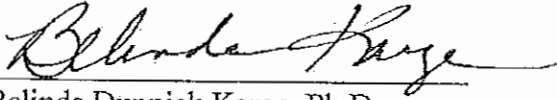


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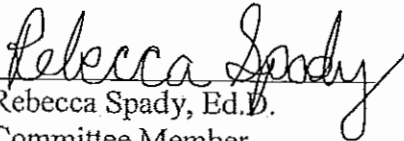
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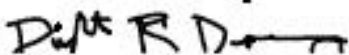


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TRADITIONAL, ONLINE, OR BOTH? A COMPARATIVE STUDY OF STUDENT
LEARNING AND SATISFACTION BETWEEN TRADITIONAL AND HYFLEX
DELIVERY MODALITIES

by

David Dewain Rhoads

A Dissertation

Presented in Partial Fulfillment of
Requirements for the
Degree of
Doctor of Education
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ABSTRACT

The purpose of this mixed method causal comparative and phenomenological study was to discover and examine the impact, if any, of 16-week traditional and five-week Hyflex delivery modalities on student learning and satisfaction within undergraduate courses. Quantitative satisfaction data was collected through a Likert survey as well as through data extraction from the institution's student information system. Qualitative data was collected from students through open ended survey questions as well as from select faculty through interviews. For each of the two hypotheses, statistical analysis was presented through descriptive statistics as well as through comparative analysis. The quantitative analysis was followed by qualitative analysis that explored themes and patterns that emerged.

The participants in this study included a total purposive sample of eighty-one students from fifteen undergraduate courses, offered in the traditional and non-traditional programs of a small private college in Southern California, and offered over the course of five academic semesters. While statistical findings on student performance/learning did not reveal a significant difference between course delivery modalities in the area of final grade average, statistical findings did reveal a significant difference between course delivery modality and student satisfaction in the area of two distinct measures of student satisfaction. Additionally, non-statistical findings reflected a positive relationship between course attendance flexibility and student satisfaction.

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CHAPTER 1: INTRODUCTION

Colleges and universities of various sizes, both private and public, are striving to increase enrollment, while dealing with the issue of limited classroom space and frequently, these schools do not have the ability to expand the total number of classrooms through building projects because of budgetary constraints (Smith, 2016). This classroom space challenge is exacerbated by the traditional way of delivering undergraduate education, through classroom anchored, lecture-based course offerings that are typically offered in a two to three day per week, face-to-face format (Smith, 2016). Administrative solutions to this dilemma generally focus on extending the school day, either through the addition of earlier courses, later courses, or both. The adding of early courses may increase classroom options, but could negatively affect student learning (Owens, Belon, & Moss, 2010). The addition of later courses could increase capacity, but since two thirds of four-year college students work, this solution could also maximize schedule flexibility (McCormick, Moore III, & Kuh, 2012).

If building new buildings or extending the school day cannot be relied on to solve the classroom space deficit, what are some institutional options that will promote both student success and schedule flexibility? Administrators frequently look to online course offerings as a solution (Moe & Chubb, 2009). Online courses have the potential to increase campus capacity by moving some instruction out of the physical campus, as well as reduce overhead costs. Cost savings could be realized through decreased faculty pay for accelerated courses, through facility overhead cost decreases, as well as through potential revenue increases coming from increased campus capacity (Bowen, 2012). Colleges and universities can offer their students the option to choose from individual online courses, or whole programs that are offered completely online, and these courses are usually offered in an accelerated format of various lengths, and in

asynchronous and synchronous varieties (Oztok, Zingaro, Brett & Hewitt, 2013). According to Allen, Seaman, Poulin, and Straut (2016), distance education enrollments were up 11.3%, from the previous year for private non-profit institutions, and the growth rate of students taking at least one online course was up 3.9%. These types of course and program options give administration the ability to free up classroom space and enable the institution to reach more students with their course offerings (Bowen, 2012).

There is a possibility that some students would not choose an online course or program if given the option because of their learning preference to have face-to-face interaction, but for these students, an alternative to the semester length traditional course and program option could be the blended or hybrid course. This course option blends the face-to-face and online modalities in a way that gives students the flexibility they need, while attending to their individual learning preferences (Nortvig, 2018). Blended courses, that have reduced face-to-face time, also have the added benefit of freeing up classroom space for the institution (Bowen, 2012).

Additionally, a third option can be available to the Institutions and to their students through Hyflex courses and programs (Beatty, 2013). According to Beatty (2013), Hyflex courses are the combination of an online course and a hybrid/blended course that give students the ability to choose their learning modality from week to week, thus increasing their options for course and program completion. Beatty also points out that from an institutional perspective, instead of offering two separate courses, with two separate teaching contracts, to potentially two separate professors, the Hyflex option brings the modalities together to help the institution realize potential cost and space savings.

Space savings are realized when face to face meeting times are reduced, and when shorter, accelerated courses replace traditional, 16-week offerings. As an example, an administrator's choice to offer eight, versus 16-week courses, could double the amount of available classroom space. The choice to shorten a course to eight weeks, and also to reduce face to face meeting times, would increase classroom space by a factor of four (Hanover, 2018).

These solutions provide innovative approaches to solving the limited classroom space challenge but many administration, faculty, and students are not convinced that these options would provide the same academic rigor and learning outcomes as the traditional, semester based, face to face option (Ciabocchi, Ginsberg, & Picciano, 2016). Only nine percent of the 3000 faculty members recently surveyed by Gallup strongly agree that online education can achieve the same learning objectives as face to face traditional courses (Jaschik, Lederman, & Gallup, 2014). Additionally, half of all faculty surveyed said that it was also not very important to convert face to face courses to hybrid, and less than 10% believed that cost savings should be a deciding factor in a move to hybrid (Jaschik, Lederman, & Gallup, 2014).

Statement of the Problem

For most of the history of higher education, professors were given the responsibility to choose the course of study that a student would progress through, as well as examine and certify that learning had taken place. This type of direct, face to face instruction evolved as it moved through Scotland and then on to the New World where curriculum and seat time in lecture halls were added as requirements of a quality education (Arnone, Altbach, & Kelly, 1992). The modern college or university has, for the most part, retained these approaches and has added the semester system, grading system, academic year, and typical 50-minute class session (Barr and Tagg, 1995).

Over the past 10 to 15 years, technology has progressed to the point where a quality education can be also be delivered in online and hybrid formats. These online and hybrid formats are frequently questioned though, by administration and faculty, as to their academic rigor and overall student satisfaction when compared to the traditional way of delivering education (Ciabocchi, Ginsberg, & Picciano, 2016).

Purpose of the Study

The purpose of this mixed method phenomenological and causal comparative study is to discover and examine the affect, if any, of traditional and Hyflex delivery modalities on student learning and satisfaction within undergraduate courses in a small, private liberal arts college in Southern California. At this stage in the research, the compared differences in student learning and satisfaction will generally be defined as the affect delivery modality has on student learning and satisfaction.

Research Questions and Hypotheses

This study addresses the following research questions:

- 1) How do the different delivery modalities of Hyflex courses and Traditional courses impact student learning?
- 2) How do the different delivery modalities of Hyflex courses and Traditional courses impact student satisfaction toward content and delivery?
- 3) How does the ability to choose how to attend a course from session to session impact a student's perception of their learning in that course?
- 4) How does the ability to choose how to attend a course from session to session impact a student's overall satisfaction with that course?

Hypothesis 1. Delivery Modality has no impact on student learning/performance

Hypothesis 2. Delivery Modality has no impact on student satisfaction

Theoretical Framework

The theoretical framework that will drive this study will be Andragogy, “the art and science of helping adults learn” (Knowles, 1980, p. 43). The five assumptions that Andragogy makes about the adult learner is that they,

- 1) Have an independent self-concept that allows them to direct their own learning.
- 2) Have adequate life experience that allows them the ability to add additional knowledge to.
- 3) Have learning needs that are related to flexible social roles
- 4) Have learning needs that are problem centered and the desire for immediate application in the real world.
- 5) Have primarily intrinsic rather than extrinsic motivations for learning (Knowles, 1980).

Knowles based his humanist psychology driven theory of andragogy on the premise that adult learners are autonomous, free, and growth oriented (Grace, 1996; Little, 1994; Pearson & Podeschi, 1997; Pratt, 1993). Knowles proposes that supporting this theory of andragogy, is the concept of self-directed learning that he defines as “a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes” (Knowles, 1975, p. 18). Alongside the theoretical framework of andragogy and self-directed learning comes the theory of community of Inquiry. Researchers Garrison, Anderson & Archer (2000) designed this process model of learning termed “The Community of Inquiry Framework,” that

proposed that individuals can derive meaning from critical reflection “but ideas are generated, and knowledge constructed, through the collaborative and confirmatory process of sustained dialogue within a critical community of learners” (p. 91).

Built on these theories of andragogy, self-directed learning, and community of inquiry, is the Hyflex Instructional Design Model (Beatty, 2010). In this adult learning theory-based model, Dr. Brian Beatty proposes that course designs based on the principles of student choice/learner control, equivalent learning, reusability, and accessibility lead to increased student performance and persistence, student and faculty satisfaction, and institutional campus capacity (Beatty, 2010).

Significance of the Study

The study is significant because of its potential for using Hyflex courses may be generalized across higher education institutions of similar size and type. Many schools are exploring online and hybrid options for their students, but administrators wonder if students will perform as well, and be satisfied with their learning experience, when compared to traditional campus courses (Ciabocchi, Ginsberg, & Picciano, 2016). Many institutions of Higher Education are space challenged and Hyflex courses, that have reduced face to face time, have the benefit of freeing up classroom space for the institution (Bowen, 2012).

According to Beatty (2013), Hyflex courses are the combination of an online course and a hybrid/blended course that give students the ability to choose their learning modality from week to week, thus increasing their options for course and program completion. Beatty (2013), also points out that from an institutional perspective, instead of offering two separate courses, with two separate teaching contracts, to potentially two separate professors, the Hyflex option brings the modalities together to help the institution realize potential cost and space savings

(2013). Therefore, this study has the potential of positively impacting many colleges and universities in the areas of student performance, student satisfaction, cost savings, and institutional capacity.

Definitions of Terms

Andragogy. The art and science of helping adults learn (Knowles, 1980).

Asynchronous Online Course. A course where online learning is supplemented by text-based discussions that take place according to the student's timetable (Lowenthal, Dunlap, & Snelson, 2017).

Hybrid Course. A course that replaces at least 20 percent, but not all, campus meetings with online activities. This type of course is sometimes referred to as a 'Blended course' (Mayadas & Miller, 2014)

Hyflex Course. A hybrid course that enables students to attend the course in person, online, or both according to the scheduling needs of the student. No percentage of in person attendance is required if the equivalent online attendance requirements are met. This type of course is sometimes referred to as a 'Hybrid Flexible course' (Beatty, 2010).

Online Course. A course where all learning activities are done online. Online classes can be conducted asynchronously, synchronously, or a combination of both. These courses have set due dates for assignments in most cases (Mayadas & Miller, 2014).

Pedagogy. The art and science of helping children learn (Knowles, 1980).

Self-directed Learning. "In its broadest meaning, self-directed learning describes a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning,

choosing and implementing appropriate learning strategies, and evaluating learning outcomes.”

(Knowles, 1975, p. 18)

Synchronous Distributed Course. A course that is predominately conducted at a physical campus, but enhanced by technology assisted, remote discussions and lectures in real time. This type of course is sometimes referred to as a ‘Flipped course’ (Mayadas & Miller, 2014).

Traditional Classroom Course. A course that takes place at a physical campus and is conducted according to an organized schedule (Mayadas & Miller, 2014).

Synchronous Online Course. A course where online learning is supplemented by live video conferencing or chat sessions that take place according to the professor’s timetable (Lowenthal, Dunlap, and Snelson, 2017).

Summary

Colleges and universities all over the world are striving, to have their value recognized, and to set themselves apart from their fellow Higher Education counterparts, in an ever-growing sea of educational offerings. Most institutions are hoping to increase enrollment, improve educational offerings, and to improve the capacity of their facilities while at the same time, decrease overall spending. These efforts seem daunting, especially to the small liberal arts colleges across the globe, but solutions are available for those willing to rethink how education has traditionally been done. A potential solution is examined in this study; Hyflex courses and programs. The following chapters review the relevant literature on the traditional, online, hybrid, and Hyflex approaches to college and university courses and compare the results in the areas of student learning and satisfaction. The study seeks to inform faculty, staff, and students of the potential benefits of the Hyflex approach to Higher Education

CHAPTER 2: REVIEW OF LITERATURE

Introduction

While the “Traditional Classroom Course” has been the most frequently employed delivery method in Higher Education, both the “Online” and “Hybrid” course delivery options have the potential for both, increasing student schedule flexibility, and maximizing classroom usage. This chapter presents the rationale for conducting research on the relationship between course delivery modality, student satisfaction, and student performance. Researchers over the last decade have studied the connections between course type and satisfaction and performance, using a multitude of research approaches.

The study aimed to build on this body of research through a comparison of the Traditional Classroom course delivery modality and the flexible Hybrid course delivery modality called Hyflex. The following review of the literature represents the literature relevant to the researcher’s study in the areas of Traditional, Online, and Hybrid course delivery modalities. Chapter II is organized into four sections: a) Origins of the Hyflex Course Design Model, b) Theoretical Framework, c) Comparisons of Online, Face to Face, and Hybrid Course Outcomes, and d) Comparison of Hyflex Course Outcomes

Origins of the Hyflex Course Design Model

The Hyflex Instructional Design Model has its roots in both traditional and distance learning strategies. For the entire history of higher education in the United States, traditional college courses were delivered predominately in a classroom setting, through the lectures and visual presentations of professors, while students sat at desks and took notes (Bunn, Fischer, & Marsh, 2014). This traditional learning model is an objectivist, teacher centered approach,

which builds on the theories of psychologists B.F Skinner and Robert Gagne. Skinner proposed that learning does not come from just doing, but the changing of a person's behavior in response to certain external stimuli (Skinner, 1989). Gagne believed that any system of instruction must be organized sequentially, with the introduction of foundational skills preceding higher order concepts and ideas (Roblyer, 2006). Influenced by these theorists, the objectivist model of learning proposes that the best way for a student to learn any subject, is through the efficient and effective transference of knowledge, from the expert professor, to the student learner (Leidner & Jarvenpaa, 1995). This model of instruction is most clearly seen in college lecture halls where professors are the ones in control of distributing knowledge in a face to face course, primarily through one-way communication.

Over the past 40 years, the theory of constructivism has replaced objectivism in many schools, but it has seemed to not have taken hold in traditional higher education institutions. Constructivism is based out of the cognitive sciences, and it was pioneered through the work of Jean Piaget and Lev Vygotsky. Constructivist theory proposes that students construct knowledge from their experiences and their various thoughts about those experiences (Schell, 2013). Constructivists propose that better learning occurs when students have more control over the process and discover the answers to their questions on their own through their own research and study. (Leidner & Jarvenpaa, 1995). Most universities and colleges build their adult education programs with constructivist theory as the backbone of their instructional design (Leidner & Jarvenpaa, 1995).

The history of the modern adult distance education movement began in 1840, with Issac Pitman's idea of distributing correspondence courses through the mail (Phillips, 1998). These distance education options expanded higher education learning opportunities for students unable

to come to a traditional college campus. Within twenty years of the start of these courses, Pitman's idea had grown to have a presence all over the world, and by the early 1900's a whole department dedicated to the distribution of courses by mail had been established at the University of Chicago (Matthews, 1999). The 1969 founding of the Open University in Great Britain began a new era of distance education with the addition of audio and video, television and radio, as well as a personal tutor over the phone (D.N., 1997)

In 1982, National Technological University (NTU) in Colorado, began using satellites to broadcast live and recorded college courses to working professionals all across the United States (Casey, 2008). The invention of the internet in the early 1990's, and the creation of online Learning Management systems in the early 2000's, allowed colleges to begin distributing their courses online to anyone who had an internet connection (Casey, 2008). According to Hall (1995), distance education, including the newly available online option, had two main goals; to help people that are unable to get to a college campus to get the education they needed, and to help the college increase its enrollment without increasing the size of their campus; online learning made this possible on a grand scale.

University administration began to realize that online offerings provided potential cost savings, and the potential to increase facility capacity without the need for new construction (Johnson-Bailey, 2016; Wake & Bunn, 2015), and the potential to decrease their school's cost per student. These savings would then allow an institution to increase online educational offerings as well as eventually reduce the overall cost of these programs for their students (Poulin & Straut, 2017), which in turn increases overall enrollment by giving more people access to an affordable education. According to and study done by Allen and Seaman (2013), about

70% of institutions now see online education as critical to their long-term strategy for growth and sustainability.

Once online education became available to the masses, because of both widespread availability of more affordable personal computers and broadband internet connections, there was the emergence of two distinct approaches to online course participation: asynchronous and synchronous. According to Hrastinski (2008) as well as Garrett and Legon (2019), asynchronous learning provides administrative efficiency, and scalability and is therefore the most common type of online learning in Higher Education institutions. Asynchronous online learning provides the flexibility for students and professors to interact using discussion boards, email, and the upload and download of assignments at a time convenient to the student (Garrett & Legon, 2019).

Asynchronous Online Learning

Asynchronous learning gives students the opportunity to engage with online content at a time of their choosing, according to their schedule, and usually include threaded discussions that give students the opportunity to contribute in more thoughtful ways than in class discussions (Hrastinski, 2007; Hawkes, 2006). According to a study done by Lewis, Treves, and Haindlin (1997), students believe that online asynchronous discussion forums provide a more learner focused learning environment than face to face discussions in the classroom. Gerosa, Filippo, Pimentel, Fuks and Lucena (2010) along with Kayler and Weller (2007), propose that asynchronous online discussion promotes dialogue between students, reflection on learned material, construction of knowledge, and self-assessment.

DeWert, Babinski and Jones (2006) as well as Yang, Yeh and Wong (2010) state that asynchronous discussion that includes sharing of thoughts, question asking and feedback, is the main way to encourage interaction and community building in the online learning environment. Researchers Collison, Elbaum, Haavind and Tinker (2000) also point out that asynchronous discussions allow students more time to reflect on the contributions of themselves and others as they can look back at the discussion threads at any time.

While many researchers promote the use of asynchronous discussion threads, some like Thomas (2002), Knowlton (2001), Hare, Bonk, and Angeli (2000), and Larson and Keiper (2002) point out that some of these discussions can lack focus and direction because of student prompted digressions or because some students only provide the minimum of what is expected. In a study by An and Frick (2006), one third of students surveyed revealed that they preferred asynchronous discussion over face to face discussion. This particular group of students tended to be more technologically savvy, more self-directed, and were more introverted than the other two thirds of the students (An & Frick, 2006).

Researchers An and Frick, (2006), Bocchi, Eastman, and Swift (2004), Hiltz and Shea (2005) and Hirschheim (2005) point out that the most frequent reason students choose the asynchronous online format is because of its flexibility or convenience. Kock, Verville, and Gaza (2007) assert that students may often state that they prefer the asynchronous online format because they would like to avoid the problems that face to face courses can have like traffic and work schedules. Daymont and Blau (2008) assert that the anytime, anywhere nature of asynchronous learning allows students the opportunity to choose the times when they can engage in learning rather than being locked down to certain times during the day or week.

Synchronous Online Learning

Synchronous online courses give students the opportunity to participate in learning activities that are similar to those found within a traditional face to face classroom (Hrastinski, 2008; Harris et al., 2009; Simonson, Smaldino, Albright, and Zvacek, 2012). In Synchronous online courses, lectures and all other learning activities occur at a designated time with the expectation that students would participate at that time via online video and/or audioconferencing software (Er, Özden, & Arifoglu, 2009). According to researchers Diaz & Entonado (2009) and Er, Özden, and Arifoglu (2009), online course satisfaction increases as the level of collaboration increases, and synchronous learning opportunities help to foster increased collaboration.

Synchronous online courses attempt to increase both interaction and collaboration to encourage student success by providing real time learning activities (Bonk & Zhang, 2006; Martinez-Caro & Campuzono-Bolarin, 2011). According to West and Jones (2007), in reaction to the limited interaction found in asynchronous online courses, some students are asking for more synchronous opportunities to interact and collaborate. Both instructors and students experience synchronous online learning as more social, as students can get their questions answered in real time (Hrastinski, 2007). Despite its overall learning benefits, synchronous online learning has some disadvantages that have contributed to the limited use of synchronous learning activities that include: high technology cost to students and school, limited access to a sufficient internet connection for students, and a lack of flexible attendance options with high potential for scheduling conflicts for both student and faculty (Duemer, et al, 2002).

Hybrid/Blended Learning

After a few years of experience with both synchronous and asynchronous online education, some institutions felt that elements of the traditional face to face model should be combined with new technology to better the learning experience for their students (Friesen, 2012). This combination of asynchronous and synchronous online course elements were described as “Blended Learning” and began in 1999 and around the same time this “mixed mode” type of learning also began to be referred to as “Hybrid Learning” (2012). Snart (2010) makes a distinction between “Blended Learning” and “Hybrid Learning” by pointing out that the term “Blended” is frequently used to describe a traditional face to face course with online components, while “Hybrid” is most often used to describe an online course with face to face components.

According to Niemiec & Otte (2009), Blended learning offers distinct advantages over traditional approaches to learning including: improved access to education for the student, improved potential of enrollment growth for the institution, improved time to completion of the degree for the student, improved retention and persistence of the student, improved technological skills and information literacy for the student, improved efficiency in the use of campus facilities, and improved teaching and learning. These researchers also describe the potential barriers along with strategies to overcome them as seen in Table 1.

Table 1

Goal, Barrier, Strategy, and Benefit, Niemiec & Otte (2009)

GOAL	BARRIER	STRATEGY	BENEFIT
<ul style="list-style-type: none"> Increased Access to Instruction 	Large lecture courses restricted to a few lecture halls	Replace F2F lectures with online lectures Create additional discussion sections using currently allocated classroom space	Increased enrollment opportunity Increased interaction, improved learning effectiveness
<ul style="list-style-type: none"> Accommodated Enrollment Growth 	General lack of classroom space	Replace one out of two class meetings with required online activity utilizing the same classroom for two sections	Increased classroom availability and accommodated enrollment
<ul style="list-style-type: none"> Improved Time to Degree 	Registration closes quickly in high demand courses creating bottleneck	Re-design curriculum to integrate online and F2F instruction replacing 50% of classroom time with online activities. Open additional sections of courses utilizing existing space.	Timely access to required courses
<ul style="list-style-type: none"> Enhanced Teaching and Learning 	Large lectures create distance between students and faculty Online tools under-utilized	Establish required participation in online discussion Focus classroom time on faculty/student interaction Make interaction with course content available 24/7	Increased interaction Self-directed learning Improved learning effectiveness
<ul style="list-style-type: none"> Better Retention/Persistence 	Student need for scheduling flexibility due to life situations Cost of transportation	Require fewer campus visits and time on campus Replace portion of f2f instruction with online instructional activities	Access to degree programs for time- and place-bound professionals Flexible scheduling to reduce need for stop-out or withdrawals

Theoretical Framework – Andragogy and Self-Directed Learning

Online and Hybrid approaches to teaching and learning are both based in what researcher Malcom Knowles (1968) described as Andragogy, referring to “the art and science of helping adults learn” as opposed to Pedagogy, “the art and science of helping children learn” (Knowles, 1980). Knowles describes the adult learner as having five characteristics,

(1) has an independent self-concept and who can direct his or her own learning, (2) has accumulated a reservoir of life experiences that is a rich resource for learning, (3) has learning needs closely related to changing social roles, (4) is problem centered and interested in immediate application of knowledge, and (5) is motivated to learn by internal rather than external factors. (Knowles, 1980, p. 43).

According to Rachal (1994), pedagogy can be easily understood as primarily teacher directed while andragogy can be seen as primarily self-directed learning. Rachal proposes that while pedagogical approaches usually best fit within the context of children learning, and andragogical approaches best fit within the context of adult learning, the appropriate approach can be dependent on individual learners rather than strictly according to those learners' chronological ages. Knowles defines self-directed learning as "a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes. (Knowles, 1975, p. 18)

Garrison (1992), proposes that most perspectives on self-directed learning share the commonalities that the learner has "some personal control over either or both the planning (goals) and management (support) of the learning experience" (p. 34). Brookfield (1988) makes sure to point out that self-directed learning is not completely autonomous but must possess the essential role of an educator at moments within the learning experience. Garrison (1989) argued that the learner must have both the opportunity and ability to make decisions about their learning process, and therefore self-directed learning is a collaboration between teacher and student.

Theoretical Framework: Community of Inquiry

John Dewey's (1959) understanding of education viewed community as essential to individual growth, but also valued and respected the role of the individual learner experiences. Based on Dewey's constructivist approach, researchers Garrison, Anderson and Archer (2000) designed a process model of online learning called the "Community of Inquiry Framework" that proposed that individuals can derive meaning from critical reflection "but ideas are generated, and knowledge constructed, through the collaborative and confirmatory process of sustained dialogue within a critical community of learners" (p. 91). At the heart of this "community of inquiry framework" are three essential elements: cognitive, social, and teaching presence (2000) as seen in Figure 1.

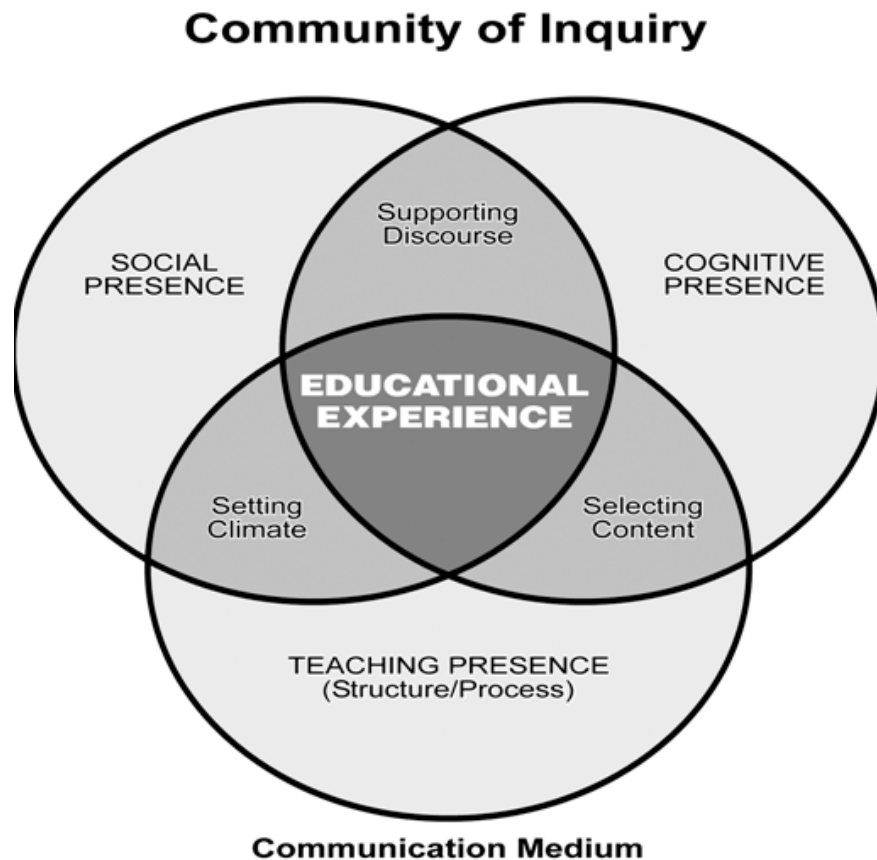


Figure 1. Community of Inquiry Framework (Garrison, Anderson & Archer, 2000)

As the first part of this community of inquiry framework, Cognitive presence is defined as “the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse” (Garrison, Anderson & Archer, 2001, p. 5). The second part of the community of inquiry framework, Social presence, is “the degree to which participants in computer mediated communication feel affectively connected one to another” (Swan, Garrison, & Richardson, 2009, p. 42). The last part of the community of inquiry framework, Teaching presence, is defined as “the design, facilitation and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes” (Anderson, Rourke, Garrison & Archer, 2001, p. 12). Garrison (1989) implemented the Community of Inquiry framework for understanding how asynchronous learning can provide students with quality learning experiences when there is meaningful instructor presence within the online environment and found that cognitive, social, and teaching presence are all essential factors. Oztok, Zingaro, Brett and Hewitt (2013), using this Community of Inquiry framework, propose that both synchronous and asynchronous learning can equally encourage critical thinking with intentionally present instructors.

Hyflex Learning

The Hyflex Instructional Design Model, based on the adult learning frameworks of andragogy, self-directed learning, and community of inquiry, was originated in 2006 (Beatty, 2013). After experimenting with various blended and hybrid learning approaches, Dr. Brian Beatty, the director of the Instructional Technologies (ITEC) Master’s degree program at San Francisco State University (SFSU), proposed the Hyflex Course Design as a solution to institutional enrollment and retention challenges based on a formative research process (2013). This research process, according to Reigeluth and Frick (1999) is the type of action research that

is intended to improve the ways that instructional strategies and processes are designed and implemented. Hyflex courses are designed to give students the ability to either attend onsite or online, and participate either synchronously or asynchronously, according to each student's learning needs. This approach requires that students are genuinely supported in whatever modality they choose to participate in that week (Beatty, 2013).

The need for the Hyflex course design at SFSU was prompted by various institutional needs; 1) a need for schedule flexibility for students because of commuting challenges, work or other responsibility conflicts 2) a need to attract online students without having to design a separate online program 3) a desire of the school's faculty to reach students outside their region (Beatty, 2013). These institutional needs were met through the implementation of Hyflex Course Design and the following benefits were realized: schedule/commuter flexibility was increased; students were given more ways to learn, classroom and course times conflicts were reduced; students were given freedom to split their learning throughout the week rather than the limiting them to just the face to face meeting time; faculty were able to impact a greater number of students; faculty were able to learn new technologies and teaching approaches; faculty were given the ability to shift the course completely online for a week if an illness or other unexpected event occurred; administration was able to schedule courses into smaller classrooms; and administration was able to bring courses to capacity without adversely impacting the instructor (Beatty, 2013). This Hyflex Instructional Design Model proposes that course designs built on the principles of Student Choice/Learner Control, Equivalent Learning, Reusability, and Accessibility lead to the following: student performance and persistence, student and faculty satisfaction, and institutional campus capacity (Beatty, 2010).

Student Choice/ Learner Control

The first principle of the Hyflex Course Design Model is student choice or learner control, which requires that, “meaningful alternative participation modes” be offered to students on a weekly or topical basis (Beatty, 2010). The concept of learner control refers to the ability that a student has to choose a learning path as well as the speed and details of that path (Shyu & Brown, 1992 and Hannafin, 1984). When comparing various learning model options such as traditional face to face, online, hybrid, or Hyflex, the options for students will vary. There will necessarily be more flexibility in an online, hybrid, or Hyflex course when compared to a traditional face to face course, due to the fact that traditional courses are more linear and time dependent than other options (Lin & Hsieh, 2001).

In all types of courses there are program controls that include required learning objectives that are set according to institutional and accrediting requirements, but it is highly beneficial to allow learners to choose how they will meet these objectives (Hannafin & Colamaio, 1987). When designing courses, learner control options are essential in motivating students to take ownership of their own learning (Steinberg, 1989). Giving options to students would allow them to choose what to study according to previous knowledge and potentially keep their attention longer (Lin & Hsieh, 2001).

Callens (2011) suggests that meeting the learning objectives of communication, reflection, and critical and creative thinking, requires that the student be in charge of their own learning. The concept of reflection, as it relates to learner control, prompts students to be more autonomous and teachers to be learning coaches (Procee, 2006). Van Eekelen, Boshuizen and Vermunt (2005) point out that learning can only truly take place when the learner is in control. When learners are in control of their own learning, they are more motivated to learn and perform

at a higher level (Scheiter & Gerjets, 2007; Kopcha & Sullivan, 2008). Sunstein and Thaler (2008) make it clear that both guidance and structure must also be present alongside learner control, to ensure learner success.

Equivalency

The second principle of the Hyflex Course Design Model is equivalency, which requires that courses provide “equivalent learning activities in all participation modes” (Beatty, 2010, p. 6). Simonson, Schlosser, and Hanson (1999) developed Equivalency theory-based on the premise that, equivalency in learning experiences between distance and face to face learners ensures the equivalency of learning outcomes. The intent of the theory is to ensure that distance learning modalities do not become inferior to another (1999). Courses built according to the principles of Equivalency theory are created in such a way where different learning experiences have equivalent value in all course delivery modalities (Lapsley, Kulik, Moody, & Arbaugh, 2008). Watkins and Schlosser (2000) suggest that equivalency should be based on the fulfillment of learning objectives rather than a comparison of seat time.

Simonson (1997) points out that learners should not have to compensate for any learning experiences that may have been chosen by the learner because of the particular situation they might have found themselves in. Equivalency in varying delivery modalities should be seen from the perspective of perceived value to the student, not as a quest for identical learning activities. According to Simonson, Schlosser, and Hanson (1999), instructional designers should attempt to make the sum of the student’s learning experiences be equivalent by providing multiple different opportunities for learning. The concept of appropriate application “implies that learning experiences suitable to the needs of the individual learner and the learning situation should be available and that the availability of learning experiences should be proper and timely”

(Simonson, Schlosser, & Hanson, 1999, p. 64). While final exam scores are frequently used to assess equivalency between learning modalities, participation level, papers, projects, and overall course grades can also be used to compare learning outcomes (Weber & Lennon, 2007).

Reusability

The third principle of the Hyflex Course Design Model is reusability, which enables course designers to reuse artifacts or learning objects from each modality, in all modalities (Beatty, 2010). The concept of a learning object refers to “any digital resource that can be reused to support learning” (Wiley, 2000, p. 132). Learning objects are built by course designers as smaller, modular learning activities that can be used many times, and in many different learning contexts (Kurilovas, Kubilinskiene, & Dagiene, 2014). As an example, the creation of these learning objects, through the recording of a particular synchronous online or face to face course session, can then immediately be posted and used in the online asynchronous portion of the same course (2014).

While some learning objects are very specific to a particular learning context, intentionality in the course design process can maximize the ability of these objects to be used at other times and in various contexts (Koppi, Bogle, & Bogle, 2005). Learning objects can be created from experiences at the same institution where they are employed or collected from shared learning object repositories that are often available free online from collaborative organizations such as MERLOT. Bradley and Boyle (2004) also point out that these learning objects must have specific learning ingredients even if they are simply an image. The concept of reusability, when it comes to the reuse of previously created resources, is seen by those within the distance learning community as one of the most important ways to scale their educational

offerings without having to create everything from scratch when new programs are launched (Wills & Pegler, 2015).

Accessibility

The fourth principle of the Hyflex Course Design Model is accessibility, which speaks to the necessity of equipping “students with technology, skills, and access to all participation modes” if they so choose. (Beatty, 2010). According to Rose and Meyer (2002, p. 43) the Universal Design for Learning (UDL) approach to curriculum design and delivery, makes accessibility to curriculum for all students a priority, no matter what the delivery modality is. These researchers present UDL as being driven by three principles that include: Principle 1: “To support recognition learning, provide multiple, flexible methods of presentation. Principle 2: To support strategic learning, provide multiple, flexible methods of expression and apprenticeship. Principle 3: To support affective learning, provide multiple, flexible options for engagement.” (2002). According to Chickering and Gamson (1987), UDL also promotes active learning, which is essential for increasing class participation and overall student learning.

UDL principles help curriculum designers focus on accessibility for all students inside and outside the physical classroom (Pace & Schwartz, 2008). Some students are not able to attend face to face due to distance from the school, work schedule, home responsibilities, technology challenges, internet accessibility, or disability. The rich cultural diversity of today’s students also brings unique learning challenges that can be addressed through intentional UDL driven design (2008). Whether a student attends face to face or online, it is essential that the institution supply needed academic and technological support, so all students have equal opportunity to be successful (Izzo & Murray, 2003). This type of student support enables

students to make the appropriate choices when it comes to flexible attendance options (Beatty, 2010).

Student Learning/Performance Comparison

Driscoll, Jicha, Hunt, Tichavsky, and Thompson (2012) along with Daymont and Blau (2008), after prior grade point average was controlled for, found no statistically significant difference between the learning/performance of online versus face to face students. Ni (2013) found no statistically significant difference overall between students in different course modalities but found that certain courses were more challenging for students than others in the online learning environment. Smith & Paige (2014), when comparing online and traditional delivery modalities, found no statistically significant difference in the learning/performance of students overall, but found a statistically significant difference in student performance in the lower division course and upper division course. This difference was attributed to underclassmen generally not performing as well as upperclassmen.

Lim, Morris, Kupritz and others (2014) found no statistically significant difference between the mean scores of students in face to face and online courses, in the areas of actual and perceived learning, as well as in the area of overall learning retention. When comparing student performance in hybrid and traditional face to face courses, Bowen, Chingos, Lack, and Nygren (2012) and Choi (2013) found no statistically significant difference between the modalities in the areas of passing rates, assignment grades, and final exam scores. Davies, Dean, and Ball, (2013) found no statistically significant difference in the area of student performance in hybrid and traditional face to face courses.

Helms (2014), discovered that students taking online courses had lower grade point averages and failed more frequently than those students in face to face courses. A study by

Atchley, Wingenbach and Akers (2013) revealed a statistically significant difference between students in online and traditional courses, with more grades at the two extremes in the online environment and more grades in the center of the grade scale in the face to face courses. Brown (2015) found that student performance varied according to course type, with developmental math students performing better face to face than in hybrid or online sections, with English students performing better in the hybrid courses than both online and face to face, and with veterinary students performing better in the online environment than both hybrid and face to face versions of the same course. Lewis and Harrison, (2012) found a statistically significant difference in student performance in hybrid versus traditional face to face courses. Pierce and Fox, (2012) found that hybrid students did significantly better than traditional face to face students in the areas of pre and post test scores, as well as in final exam scores.

Stone, (2012) found that Genetic Disease course students performed better in the hybrid version of the course compared to traditional face to face version of the same course. Means, Toyama, Murphy, Bakia and Jones (2009, p. 62) conducted a meta-analysis of over one thousand studies that contrasted online and face to face learning and found that students in online courses, “performed modestly better, on average, than those learning the same material through traditional face to face instruction.” While the overall findings of this meta-analysis point to the statistical equivalency of both face to face and online modalities, the blending of both promoted student performance over those in strictly face to face or online courses. Gibson (2008) found that face to face MBA students performed slightly better in assignments, assessments, and final grades than online MBA students.

When it comes to online versus face to face courses, as far as student learning/performance goes, there is no clear consensus as to which modality is better for

learning. Some studies indicate that online is a slightly better approach for student learning than face to face, while an equal amount of studies point to face to face as slightly superior. There is good evidence in the literature though, that the blending of the two delivery modalities, does lead to improved student learning overall.

Student Satisfaction Comparison

Driscoll, Jicha, Hunt & Tichavsky (2012) found no statistically significant difference in student satisfaction of those taking online versus face to face courses. Ferguson & DeFelice (2010), when comparing student satisfaction in five week online courses versus 16 week online courses, found no significant difference in perceived learning or student satisfaction between the different courses, and pointed to the essential presence of meaningful communication between student and student as well as student and faculty, as a major contributing factor in these satisfaction results.

Gibson (2008), in a comparative study of three MBA level Human Resources Management courses, found that face to face students were more satisfied with the overall learning experience than those students taking the online courses. Sadegi, Sedaghat and Sha Ahmadi (2014), in a comparative study of lecture and blended courses, found that blended learning produced more student satisfaction than purely face to face lecture-based courses. Lim, Morris, & Kupritz (2014), purported that students in online courses were less satisfied with the overall learning support in comparison to those students within blended courses. Dziuban (2015), found that students were more satisfied with online courses than with traditional face to face courses, and pointed to both choice and flexibility as strong contributing factors in this level of satisfaction. Cole, Shelley, & Swartz (2014), in a study that compared student satisfaction in online and hybrid courses, found that students were more satisfied with hybrid versus online

courses overall, and pointed to lack of student to professor interaction in online courses as the main reason behind the dissatisfaction within this modality.

When it comes to online versus face to face courses, similar to study findings for student learning/performance, there is no clear consensus as to which modality is better for overall satisfaction. Some studies indicate that online is a slightly better approach for student satisfaction than face to face, while an equal amount of studies point to face to face as slightly superior. There is good evidence in the literature though, that the blending of the two delivery modalities, does lead to improved student satisfaction overall.

Hyflex Course Student Learning and Satisfaction

Miller, Risser, and Griffiths (2013) conducted a study of 161 undergraduate students enrolled in a Hyflex delivered introduction to statistics course, and examined student performance of these students, compared to a control group of 168 students in a traditional face to face version of the same course that ran during the same semester. The pilot and control sections of this Statistics 145 course consisted of three 48-minute lecture sessions per week and two 48-minute recitation meetings. The Hyflex pilot course gave students the opportunity to attend the lecture sessions in person, synchronously in the online environment, or through a combination of the two modalities. Recitation meetings and examinations still required students to attend the on-campus face to face course. Both the pilot and control courses had the same professor, curriculum, assignments, and examinations. Motivation for the study stemmed from the need for more lecture space and the desire to teach more students within the same campus facilities.

Data for this study was collected through self-reported attendance information, final grades, an end of semester course survey, and select focus groups. Some within the study were

also given a pre and posttest to assess overall student progress in learning. When student homework, examination, and final grade data for the pilot and control courses were analyzed, no statistically significant difference was found in the student learning/performance of students in both courses (Miller, Risser, & Griffiths, 2013).

Ninety five percent of the students surveyed from the ten-week Hyflex course expressed that they valued the increased instructional technology available along with the learning options they were offered. While five percent of the students surveyed indicated that they preferred face to face lecture with little or no instructional technology, 57% of the students valued the variety of learning opportunities and 38% preferred purely online lectures.

Abdelmalak (2014) conducted a qualitative study that examined student satisfaction for six doctoral students enrolled in a Hyflex educational technology course. The semester length synchronous course, that gave students the choice of attending online, face to face, or through a combination of both, was studied in both the online and face to face learning environments. All students within this course, whether they attended online or in person, had the same learning objectives as well as the same assignments and course work expectations. Data was collected through interviews, direct observations, recordings, and student coursework, and then coded according to themes. Through this study these students revealed that the Hyflex course accommodated their need for attendance flexibility and gave them more control of their own learning. The study also revealed that students felt they were given the ability to effectively learn according to their learning preferences and despite personal schedule conflicts, through differentiated instruction, and increased course accessibility.

Lakhal, Khechine, and Pascot (2014) conducted a study of 439 students enrolled in a 10week Hyflex delivered undergraduate management information systems course, and compared

both learning/performance and satisfaction of these students in the following delivery modalities: 100% face to face, 100% synchronous online, 100% asynchronous online, and mixed modality attendance. Modality choice was given to every student and modality category compared was determined according to the percentage of courses attended in each type.

Academic performance was measured through student scores on a multiple-choice test, a written exam, and other assessment assignments. Student satisfaction data was collected through a 20-question survey that was administered during the last five weeks of the semester. Factor analysis was also run on the survey questions to ensure that the factors to determine student satisfaction were appropriate. One way ANOVA tests were performed on the answers to the satisfaction survey as well as on test, exam, and assignment scores and there was only one statistically significant difference found between the modalities in the areas of both satisfaction and performance; satisfaction and performance was significantly higher in the synchronous versus the asynchronous 100% online attenders.

Beatty (2013), the originator of the Hyflex instructional design model, conducted a study of courses that were delivered in the Hyflex format over the 2007-2011 Fall and Spring semesters. This study analyzed both student performance and student satisfaction data to see if course attendance modality choice effected either of these areas. Motivation for the study stemmed from the University's desire to offer students flexibility in their schedules as well as their desire to reach more students outside their immediate area without creating specific online programs. The Hyflex courses offered at this University allowed students to choose to attend class face to face, synchronously, or asynchronously according to student preference or need.

Student satisfaction data, collected through online surveys, reveal the following about Hyflex course attendees: 80% believe they learned as much or more than they expected, 80%

prefer a mix of attendance modalities, and 20% percent attended differently than they originally planned (Beatty, 2013). Survey data also showed that most students valued the flexibility of the Hyflex courses even if they did not personally take advantage of it. Participation data from the small seminar courses showed that 60% of the students attended the face to face course, 30% of the students attended asynchronously, synchronously, or a mix of both, and the remaining ten percent did not participate at all (2013). Participation data from the large lecture courses showed that 80 to 90 of the students participated asynchronously online, five to 10% of the students participated synchronously online, and the remaining students attended the face to face lecture. When approximately 150 out of 1200 students chose to attend these lecture courses face to face, classroom options were greatly increased. Analysis of the student performance data from these Hyflex courses show no statistically significant difference between modality choices.

When it comes to the available Hyflex learning studies, no statistically significant differences were found in the areas of student learning/performance or satisfaction. Students expressed that they appreciated the flexibility this modality gave them as well as the increased level of instructional technology present within their courses. In addition, students that chose the synchronous Hyflex option in one study performed slightly better than the other options. There is good evidence in the literature though, that the Hyflex course design gives students more choices in the areas of attendance and participation than their traditional course counterparts.

Measures of Student Learning/Performance

In their quasi experimental study, Driscoll, Jicha, Hunt, Tichavsky, and Thompson (2012), measured student learning/performance at a large urban university in North Carolina by comparing the scores of three individual unit exams and one signature assignment that were the same across terms and course delivery types. Data was collected from the Learning Management

System in the form of grades for the exams and signature assignments, as well as through responses to a semi anonymous Likert scale survey. The sample size of this study was 368 subjects, with 170 online students and 198 face to face students participating. Upon analysis, no statistically significant difference was found in the area of student learning/performance, between the online and face to face groups.

Daymont and Blau (2008), measured student performance through course final grades in a large public university in the eastern United States. Student learning/performance was based on quiz and forum discussion scores for all modalities and in class participation scores for traditionally delivered courses. Control variables of gender, grade level, and GPA were examined using a series of regression analyses. The sample size of this study was 245 subjects, with 64 online students and 181 face to face students participating. Upon analysis, no statistically significant difference was found in the area of student learning/performance, between the online and face to face groups.

Smith & Paige (2014), studied the student learning/performance of 645 students in a Division II state university by comparing final grades of multiple undergraduate business courses, extracted from the school's student information system of traditionally and online delivered courses of the same type. Four hundred and seventy-two of these students attended face to face courses while 173 students attended online courses. Upon ANOVA analysis, no statistically significant difference was found in the area of student learning/performance, between the online and face to face groups.

Bowen, Chingos, Lack, and Nygren (2012), studied the student learning/performance of 605 students, from an undergraduate statistics course offered in seven New York public universities, by comparing final grades and exam scores from online/hybrid and traditionally

delivered courses. Students were randomly assigned to online/hybrid or face to face courses in equal numbers. Final grades of the study participants were extracted from each institution's Learning Management System, and end of semester mixed method surveys, that asked students to describe their overall experience and reasons for attending one type of course over another. Upon analysis, no statistically significant difference was found in the area of student learning/performance, between the hybrid/online and face to face groups.

Helms (2014), studied the learning/performance of 96 students at Kennesaw State University students that attended an undergraduate Psychology course. Fifty-eight students attended the course online and 38 students attended the course face to face. Student data was extracted from the institutional student information system and analysis was done through multiple ttests on various course variable including, comparing assignment grades, final course grades in both online and traditionally delivered courses. Upon analysis, a statistically significant difference was found in the area of student learning/performance in favor of the face to face groups.

Atchley, Wingenbach & Akers (2013) studied course completion rates and student performance of 5477 students that took a variety of both online and face to face courses of the comparable types, at a regional, public university in the Southwest United States. Of those students in the study, 1825 students attended their classes online while 3652 students attended. This study followed a causal comparative research design, student final grade and completion data was extracted from the institutional student information system, and analysis was done using a Chi-square test to determine if there was a statistically significant difference between groups. Upon analysis, findings were mixed where some statistically significant differences were found for both completion rates and student performance in some subjects in favor of the face to

face courses, while no statistically significant differences were found for both completion rates and student performance in other subjects.

Brown (2015), studied the student learning/performance of all students in select online, hybrid, and face to face courses over a five-year period. The study was conducted at a medium sized community college in Virginia, and student data was extracted from the institutional student information system. The use of both descriptive analysis with pivot tables, and inferential analysis utilizing the Chi square test, were implemented to analyze the extracted final grade data to discover any statistically significant differences between the groups. Upon analysis, findings were mixed where some statistically significant differences were found for student learning/performance in some subjects in favor of the face to face courses, while no statistically significant differences were found for student learning/performance in other subjects.

Lewis and Harrison (2012), studied student learning/performance by comparing quiz and final grade data from one Social Science course delivered in both the online and face to face delivery formats. This study was a quasi-experimental field study that analyzed the quiz/exam scores along with final grade data of 28 face to face students and 32 online students. All data was extracted from the institutional learning management system and student information systems. Upon analysis, no statistically significant difference was found in the area of student learning/performance, between the online and face to face groups.

When it comes to the available comparative studies that examined relationships between the delivery modalities of online and face to face with student learning/performance, some statistically significant differences were found in the area of student learning/performance favoring the face to face delivery modality in a limited number of course subject areas but no statistically significant differences were found in most courses that were studied.

Measures of Student Satisfaction

Driscoll, Jicha, Hunt & Tichavsky (2012), studied student satisfaction and learning/performance by conducting a quasi-experiment within an undergraduate anthropology/sociology course offered both online and face to face at a large urban university in North Carolina. The data for this study was collected in the form of final grades and exam grades from both the institutional student information system and in the form of Likert questions through a semi-anonymous satisfaction survey distributed at the conclusion of the offered courses. The sections of the courses studied were all taught by the same professor, and a total of 443 students attended, with 231 students in the face to face course, and 212 students in the online course. Upon analysis, no statistically significant difference was found in the area of student satisfaction, between the online and face to face groups.

Gibson (2008), studied student satisfaction and learning/performance in Graduate level MBA Human Resource Management classes, offered in online and face to face formats at a large private university in Florida. A total of 26 students attended the 10week online course while 16 students attended the 12week face to face course. Satisfaction data was collected through the use of a Likert scale satisfaction survey. Upon analysis, no statistically significant difference was found in the area of student satisfaction, between the online and face to face groups.

Sadegi, Sedaghat and Sha Ahmadi (2014), studied student satisfaction and learning/performance in online and hybrid medical science courses within the Public Health School at Tehran University of Medical Science. This quasi-experimental study was conducted in both online and hybrid courses, where 43 students attended the face to face sections while 50 students attended the hybrid sections. Data was collected from the institutional student information system and through the use of a Likert scale satisfaction survey. Statistical tests such

as descriptive methods, paired *t*-test, independent *t*-test and ANOVAs were run to analyze the data. Upon analysis, no statistically significant difference was found in the area of student satisfaction, between the online and face to face groups.

Lim, Morris, and Kupritz (2014), studied student satisfaction and perceived learning in online and blended/hybrid Human Resource courses at the University of Tennessee. The subjects of this mixed method study included a total of 125 students, with 59 students attending online and 69 attending the hybrid/blended courses. Data was collected using a mixed method, post course survey that used both closed and open-ended questions. Paired *t*-tests, ANOVA, and domain analysis was used to analyze the collected quantitative and qualitative data. Upon analysis, no statistically significant difference was found in the area of student satisfaction, between the online and hybrid/blended groups.

Cole, Shelley, and Swartz (2014), studied student satisfaction in hybrid and online delivered undergraduate and graduate at Robert Morris University in Pittsburg, PA. Data was collected using a mixed method survey over the period of three years, and independent sample *t*-tests and keyword analysis was applied to the collected data. A total of 553 students participated in the study. Upon analysis, the study concluded that students were satisfied overall with both the online and hybrid offerings but that interaction with other students and faculty are lacking when compared to face to face offerings.

When it comes to the available comparative studies that examined relationships between the delivery modalities of online, hybrid and face to face with student satisfaction, no overall statistically significant differences were found in the area of student satisfaction with any of the modalities over another. Survey data did show that some students have modality preferences, and

in some cases, suggestions for improvement, but their overall satisfaction was similar across modalities.

Summary

The Hyflex course modality, described in this literature review, is made up of online and face to face components along with learner control of the mode of attendance for each individual class session. The various studies reviewed here have examined the relevant literature pertaining to traditional face to face, online, and hybrid modalities that make up the Hyflex approach. The traditional approach to student teaching and learning has been the dominant approach followed through the history of higher education, and only recently has online begun to challenge its prevalence. The studies reviewed here, suggest that neither the traditional approach or the online approach itself leads to better student learning/performance or satisfaction. The literature also suggests that various versions of combining these two modalities can potentially improve learning/performance and overall student satisfaction.

Findings specific to Hyflex course learning/performance outcomes as well as satisfaction are few and show no statistically significant differences to those course outcomes of courses offered either 100% online or traditionally 100% face to face. This researcher's study will add to the literature that examines the Hyflex approach to student teaching and learning, and additionally will expand other researcher's ability to determine which factors of the various approaches positively impact student learning/performance and satisfaction. The unique factor that is present in the Hyflex approach, of giving the learner the choice of how to attend classes from session to session, will be studied further to help determine if this attendance choice has any impact on student learning/performance and overall satisfaction.

CHAPTER 3 – METHODOLOGY

Research Design and Rationale

This chapter will discuss the methodology employed in this study. The purpose of this mixed method causal comparative and phenomenological study is to discover and examine the impact, if any, of 16-week traditional and five-week Hyflex delivery modalities on student learning/performance and satisfaction within undergraduate courses in a small, private college in Southern California. For purposes of this research, the compared differences in student learning and satisfaction will generally be defined as the impact delivery modality has on student learning and satisfaction.

This study addresses the following research questions:

- 1) How do the different delivery modalities of Hyflex courses and Traditional courses impact student learning?
- 2) How do the different delivery modalities of Hyflex courses and Traditional courses impact student satisfaction toward content and delivery?
- 3) How does the ability to choose how to attend a course from session to session impact a student's perception of their learning in that course?
- 4) How does the ability to choose how to attend a course from session to session impact a student's overall satisfaction with that course?

The researcher purports to inform design and execution of programs and courses across the institution. The researcher also hopes to use the information gathered through this study to improve overall student success and satisfaction within his own institution.

Setting and Participants

The researcher conducted this study at a small Southern California, Liberal Arts College. While the school also offers graduate programs, the study spanned both the traditional and nontraditional undergraduate programs within the school. The traditional program, within the specific courses studied, had a total number of 314 students while the non-traditional program, within the specific courses studied, had 146 students. The researcher compared 15 specific courses that had the same learning objectives, 15 delivered in the Hyflex model and the same 15 delivered using the traditional campus model.

Average number of students in the Hyflex courses combined was 24 while the average number of students in the Traditional campus courses combined was 39. The study sample specifically included the student population of each of the 15 courses. The professors of these courses included both full time and adjunct faculty members, some with a masters level education and some with Doctorate level education. Grades in the two modalities were compared and analyzed to determine percentages of each grade mark earned in each course. Each of the courses had approximately the same point structure and formative assessments were graded using similar grading rubrics.

Courses delivered in the Hyflex model were five weeks in length, while courses delivered in the traditional model were 16 weeks in length. Students in the Hyflex courses chose the way they attended class on a weekly basis, while those in the traditional courses were required to attend their courses face to face every week. In each of the Hyflex courses students had the choice to attend one four-hour campus class, or to participate in an equivalent asynchronous online discussion each week. In each of the traditional courses, students met on campus for two 50-minute class sessions per week. The five-week Hyflex courses were offered within the

nontraditional program while 16-week traditional courses were offered within the traditional program.

Males in the study made up 47% of the sample while females made up 53% of the sample. Sample ethnicity percentages were as follows: 4% American Indian or Alaska Native, 2% Asian, 12% Black or African American, 32% Hispanic, 2% Native Hawaiian or Other Pacific Islander, 4% Nonresident Alien, 9% Two or more races, 4% Unknown, 34% White. All of these courses were taught by experienced professors. These professors' experience included designing and teaching online, on site, and hybrid courses of varying lengths and types. These courses included both general education and major course required offerings in the areas of Math, Communication, Psychology, Business, Humanities, and Leadership.

Sampling Procedures

The participants of the study were a purposive sample, in that the students were enrolled in one of the 15 specific courses that were offered in both the traditional and nontraditional programs over an academic year, and additionally responded to the mixed method survey that was sent out. All matching courses in both traditional and nontraditional programs during the study period and all student data from those courses were examined, utilizing the nonrandom, cluster sampling approach. Student learning data was pulled from the Student Information System by the researcher, alongside select administration at the study institution. Once study data was matched up, student names, along with other unique identifiers were removed to provide student confidentiality in study reporting. The sample was representative of the institution as a whole, as overall demographic closely resembled those of the entire undergraduate population.

Instrumentation and Measures

Johnson and Onwuegbuzie (2004) point to the mixed method study as an effective way to more holistically research a given subject. It is because of this fact that, in addition to data analysis of student data from the institution's student information system to determine student learning, student satisfaction was measured using a mixed method survey that included quantitative survey questions, along with four open ended qualitative question prompts. Question structure, beyond the basic demographic type, were built based on the work of Rensis Likert (1932) and his Method of Summated Ratings. Demographic questions included sex, ethnicity and age.

The survey began with an informed consent page and was followed by demographic questions that asked students for their name (for data matching only), email address, gender, age, and ethnicity.

Table 2

Research Questions and Data Source

Research Questions	Data Source	Quantitative questions	Qualitative questions
Quant RQ 1 – How do the different delivery modalities of Hyflex courses and Traditional courses impact student learning?	Final grade data from student information system	N/A	N/A

Quant RQ 2 – How do the different delivery modalities of Hyflex courses and Traditional courses impact student satisfaction toward content and delivery?	Survey	Scale on satisfaction toward content and delivery seen in Appendix B	N/A
Qual RQ 1 – How does the ability to choose how to attend a course from session to session impact a student's perception of their learning in that course?	Survey Data	N/A	Survey questions seen in Appendix B
Qual RQ 2 – How does the ability to choose how to attend a course from session to session impact a student's overall satisfaction with that course?	Survey Data	N/A	Survey questions seen in Appendix B

The survey continued with seven satisfaction questions, that included questions such as “Overall, my instructors provided clear course requirements and expectations;” “Overall, my instructors sufficiently challenged us with assignments;” and “Overall, my instructors demonstrated expertise for the subject and content,” that were measured on a five point Likert scale of ‘Very Successful’ to ‘Unsuccessful.’ The survey ends with the following three open ended, qualitative prompts, “How did the ability/inability to choose how to attend a course from class meeting to class meeting affect your perception of your learning in these courses? Explain;” “How did the ability/inability to choose how to attend a course from class meeting to class

meeting affect your overall satisfaction with that course? Explain;” and “Any other comments about your experience with these courses you would like to share?”

In addition to distribution of the survey to students, phone interviews were done with two faculty/staff members that given these research question based, open ended prompts: “How do you believe the different delivery modalities of Hyflex courses and Traditional courses impacted student learning?” “How do you believe the different delivery modalities of Hyflex courses and Traditional courses impacted student satisfaction?” Faculty/staff participants were also given these non-research question based, open ended prompts: “How do you believe Hyflex course teaching impacted faculty success?” “How do you believe Hyflex course teaching impacted faculty satisfaction?” The two faculty/staff members that were interviewed had taught in both programs and served in student and faculty support roles in both programs.

Reliability/Validity

The survey instrument, and protocols were developed by a group of professors within a school of education and is valid on its face as it appears effective for what it is attempting to accomplish. After collecting the data through this instrument, reliability analysis will be done using a confirmatory Cronbach’s Alpha. Through triangulation of the collected data, both validity and reliability will be increased. To increase reliability and validity, the researcher revised the survey before distribution and questions were checked for clarity, consistency, and overall reflection of the study’s themes. The survey questions and associated scale provide a reasonable measure of student satisfaction toward content and delivery, through addressing all the major areas of concern within these satisfaction categories. These survey questions and the associated scale has been proven reliable and valid through multiple distributions and resulting data analysis.

Data Collection

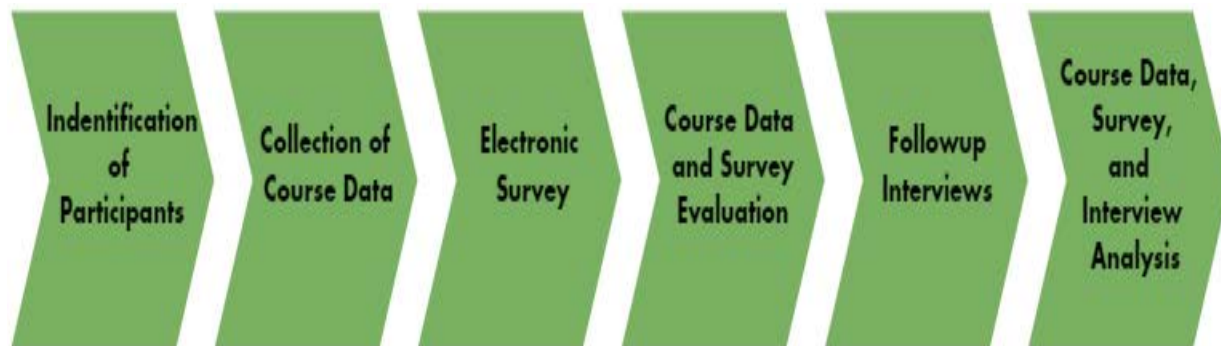


Figure 2. Data collection sequence.

Student participants for this study were chosen because of their enrollment in the traditional or Hyflex courses within the semesters being studied. To answer the quantitative research question, “How do the different delivery modalities of Hyflex courses and Traditional courses impact student learning?”, learning was measured based on a student’s final course grade. This data, along with the student’s sex, ethnicity and age was pulled from the institution’s student information system which holds all student data. To answer the quantitative research question, “How do the different delivery modalities of Hyflex courses and Traditional courses impact student satisfaction toward content and delivery?” student satisfaction was measured using a survey, built on a five point Likert scale of Unsuccessful to Very Successful. This scale measured the satisfaction of students with a professor’s creation and delivery of the course.

To answer the qualitative research question, “How does the ability to choose how to attend a course from session to session impact a student’s perception of their learning in that course?” perception of student learning was measured using the survey question, “How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your perception of your learning in these courses? Explain.” To answer the qualitative research

question, “How does the ability to choose how to attend a course from session to session impact a student’s overall satisfaction with that course? student satisfaction was measured using the survey question, How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your overall satisfaction with that course? Explain.” The qualitative survey question, “Any other comments about your experience with these courses you would like to share?” was also included in the survey.

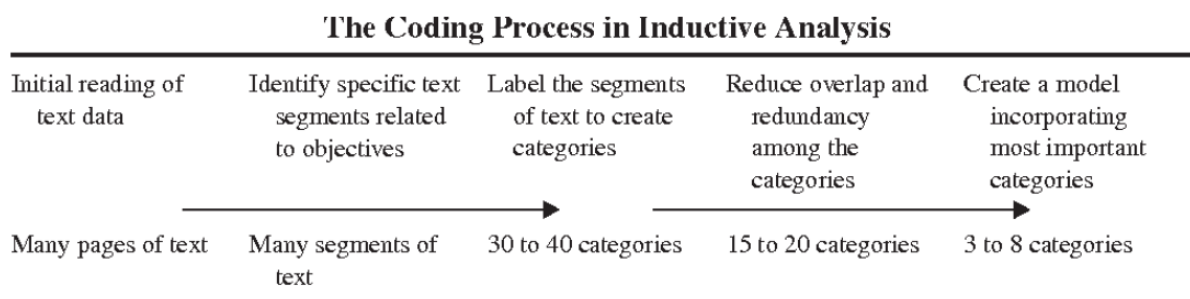
The course survey was distributed to students through the use of the SurveyMonkey survey tool, along with multiple reminder and thank you emails. Both school and personal email addresses for survey distribution were pulled from the school’s Student Information System. This collection of data from the institution’s student information system drew from all Hyflex and Traditional courses of the same type that were offered over the course of a full calendar year. Evaluation and analysis of the survey and course data began and continued through the end of that year. Faculty interviews of the two participants were done over the phone and were recorded and then transcribed to enable data analysis.

Data Analysis

The Causal comparative design of this study was used to analyze the differences between the outcomes or behaviors participants who took either HyFlex or traditional online courses. Data analysis of the qualitative data was conducted through the initial reading of the survey response data, by categorizing the data into concise, nonredundant themes, and then choosing the precise themes to be analyzed in depth. Axial coding was used to organize the data into themes and data was then presented in tables according to those themes. All quantitative and qualitative results were triangulated to assure the validity of the research.

The process is provided visually in Table 3.

Table 3

The Coding Process in Inductive Analysis

Source: Adapted from Creswell (2002, p. 266, Figure 9.4) by permission of Pearson Education, Inc. (© 2002, Upper Saddle River, NJ).

Descriptive and inferential statistics were used for the causal comparison part of the study, along with domain analysis to analyze the collected data. SPSS statistical software was used to analyze the quantitative data. Measures of central tendencies were calculated including mean, median, and mode. Descriptive statistics gave frequency distribution percentages and measures of dispersion were used, including range and standard deviation. For statistical data analysis, independent samples *t*-tests were conducted for student performance/learning and satisfaction data, and one way, between subjects ANCOVAs were calculated to examine the effect of program on grade average, covarying out the effect of age, gender and ethnicity. An alpha level of $p < .05$ was used to determine significance.

The narrative data was analyzed from survey and interview transcripts and the researcher coded the data using axial coding procedures. Qualitative data revealed themes and patterns through the use of domain analysis. “Qualitative research begins with assumptions, as well as the use of theoretical frameworks that inform the study of research problems addressing the meaning ascribed to social or human problems” (Creswell, 2013, p. 44). Adult learning theory provided the theoretical framework for this research. The university setting was considered a natural setting where participants experienced specific course design phenomena under study. By

utilizing open-ended questions (Creswell, 2013) in the natural setting where the experience occurred for the participants, it ultimately allowed the researcher to triangulate the findings with the Likert survey questions.

Ethical Issues

The researcher has taken steps to eliminate as much bias as possible by choosing all non-traditional Hyflex courses that matched offerings in the traditional program, and not choosing select offerings as part of the study. The researcher also enlisted the help of former colleagues to help maximize the efficiency of data collection through the survey and student information system data extract. The researcher also designed the Hyflex model that was implemented in the institution, as well as created and taught several courses within the program. None of the courses within this study were created or taught by the researcher. This study was approved by the institutional research boards at both universities involved. The Research NIH certificate is located in Appendix C.

Summary

The student participants of this study were chosen from two different programs within a small liberal arts college in Southern California. All student participants were either from the traditional or non-traditional undergraduate programs within the college and most were full time status. For the student learning portion of the study, participants were unaware that they were being studied, however collection of the mixed method survey informed these participants of the overall purpose of the study. All students in the traditional and non-traditional programs, that were in the matching courses during the study period, were sent the survey and were given a month to respond. Upon collection of the survey, data analysis was conducted using a causal comparative, phenomenological approach to determine the results. Faculty that were

interviewed were chosen because of their dual roles of both professor and administrator within both programs in the study.

CHAPTER 4: FINDINGS

Introduction

The purpose of this mixed method causal comparative and phenomenological study is to discover and examine the impact, if any, of 16-week traditional and five-week Hyflex delivery modalities on student learning and satisfaction within undergraduate courses. Quantitative data was collected through a Likert survey as well as through data extraction from the institution's student information system. Qualitative data was collected from students through open ended survey questions as well as from select faculty through interviews. For each of the two hypotheses, statistical analysis was presented through descriptive statistics as well as through comparative analysis. The quantitative analyses are followed by qualitative analyses that explores themes and patterns that emerged.

This causal comparative and phenomenological study sought to address four research questions: 1) How do the different delivery modalities of Hyflex courses and Traditional courses impact student learning?, 2) How do the different delivery modalities of Hyflex courses and Traditional courses impact student satisfaction toward content and delivery?, 3) How does the ability to choose how to attend a course from session to session impact a student's perception of their learning in that course?, and 4) How does the ability to choose how to attend a course from session to session impact a student's overall satisfaction with that course?

Participant Data

The participants in this study included a total purposive sample of 81 students from 15 undergraduate courses, offered in the traditional and nontraditional programs of a small college in Southern California, and offered over the course of five academic semesters. The students that were part of the study were invited to participate through informed consent, given to them at the

beginning of a distributed mixed method survey (Appendix B). A total of 509 students were enrolled in the 15 courses offered in the study period, and 81 students consented to participate in the study through completion of the distributed survey, for a total survey response rate of 15.9%. Three surveys, with verbiage appropriate to the program, were distributed to three separate groups: Traditional program students, Hyflex students, and Dual Program students. Only two total students responded incompletely to the Dual program survey, and thus the researcher made the decision to exclude these respondents from the study. Of those that responded to the Traditional and Hyflex surveys, 41 students responded to the Hyflex survey and 40 students responded to the Traditional program survey. Final grade data along with age, ethnicity and gender demographic data was also collected from the institution's student information system and matched to corresponding survey data.

The gender distribution of the traditional/face to face students that participated included 72.5% females (29) and 27.5% males (11).

Answered: 40 Skipped: 0

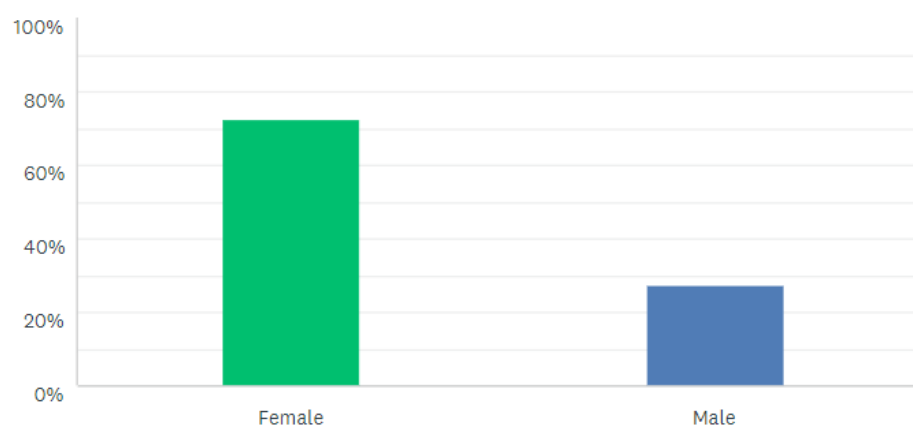


Figure 3. Gender distribution of traditional students

The gender distribution of the Hyflex students that participated included 56.1% females (23) and 43.9% males (18).

Answered: 41 Skipped: 0

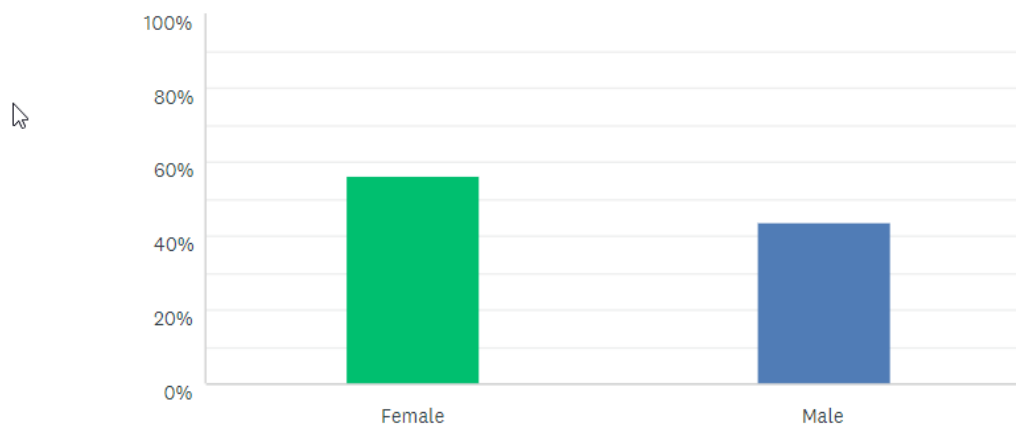


Figure 4. Gender distribution of Hyflex students

Table 4

Frequency of Traditional/Face to Face and Hyflex Program Gender

		Gender				
Program			Frequency	Percent	Valid Percent	Cumulative Percent
Hyflex	Valid	Male	18	43.9	43.9	43.9
		Female	23	56.1	56.1	100.0
		Total	41	100.0	100.0	
Face to Face	Valid	Male	11	27.5	27.5	27.5
		Female	29	72.5	72.5	100.0
		Total	40	100.0	100.0	

The age distribution of the traditional/face to face students that participated included 87.5% in the 18 to 24 age range (35) and 12.5% in the 25 to 34 age range (5).

Answered: 40 Skipped: 0

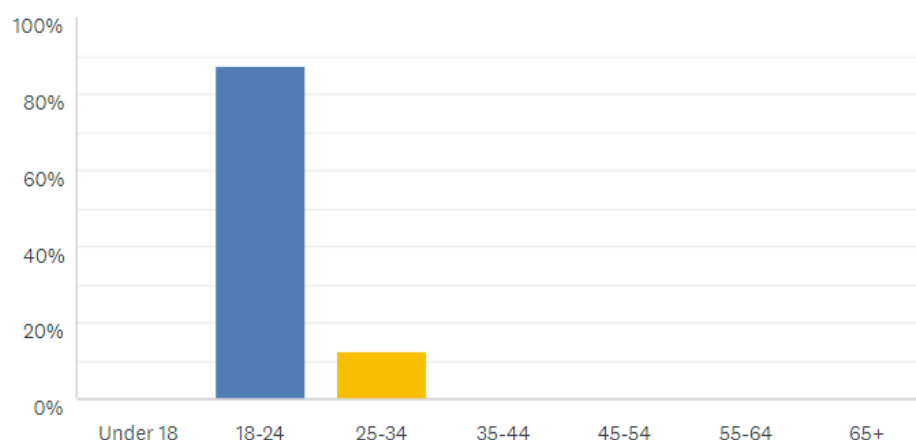


Figure 5. Age distribution of traditional/face to face students.

The age distribution of the Hyflex students that participated included 17.07% in the 18 to 24 age range (7), 31.71% in 25 to 34 age range (13), 21.95% in the 35 to 44 age range (9), 14.63% in the 45 to 54 age range (6), 12.2% in the 55 to 64 age range (5), and 2.44% in the 65+ age range (1)

Answered: 41 Skipped: 0

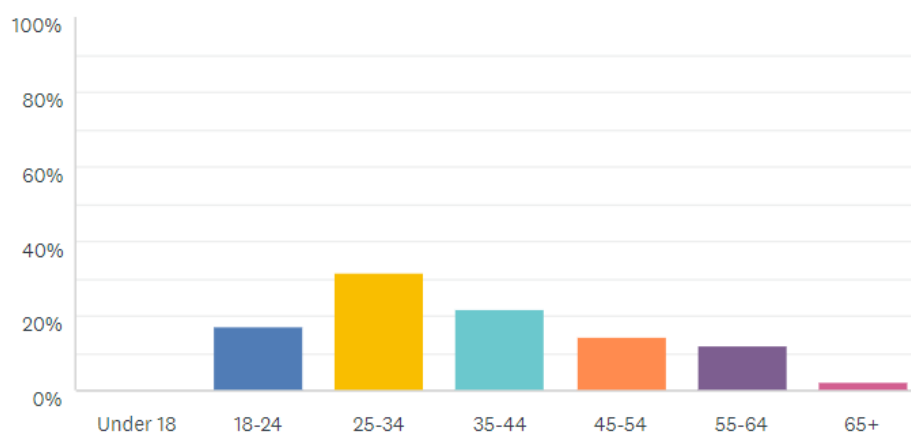


Figure 6. Age distribution of Hyflex students

Table 5

Frequency of Traditional/Face to Face and Hyflex Program Age

		Age_Range				
Program			Frequency	Percent	Valid Percent	Cumulative Percent
Hyflex	Valid	18-24	9	22.0	22.0	22.0
		25-34	15	36.6	36.6	58.5
		35-44	5	12.2	12.2	70.7
		45-54	7	17.1	17.1	87.8
		55-64	4	9.8	9.8	97.6
		65+	1	2.4	2.4	100.0
		Total	41	100.0	100.0	
Face to Face	Valid	18-24	37	92.5	92.5	92.5
		25-34	3	7.5	7.5	100.0
		Total	40	100.0	100.0	

The ethnicity distribution of the traditional students that participated included 5% Asian / Pacific Islander (2), 5% Black or African American (2), 12.5% Hispanic (5), 70% White / Caucasian (28), and 7.5% Multiple ethnicity / Other (3).

Answered: 40 Skipped: 0

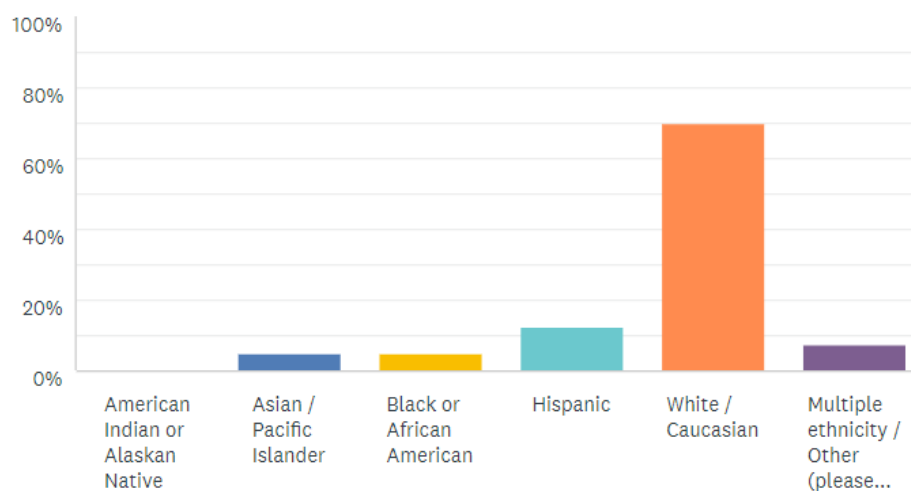


Figure 7. Ethnicity Distribution of Traditional/Face to Face Students

The ethnicity distribution of the Hyflex students that participated included 2.44% American Indian or Alaskan Native (1), 9.76% Asian / Pacific Islander (4), 21.95% Black or

African American (9), 26.83% Hispanic (11), 31.71% White / Caucasian (13), and 7.32% Multiple ethnicity / Other (3).

Answered: 41 Skipped: 0

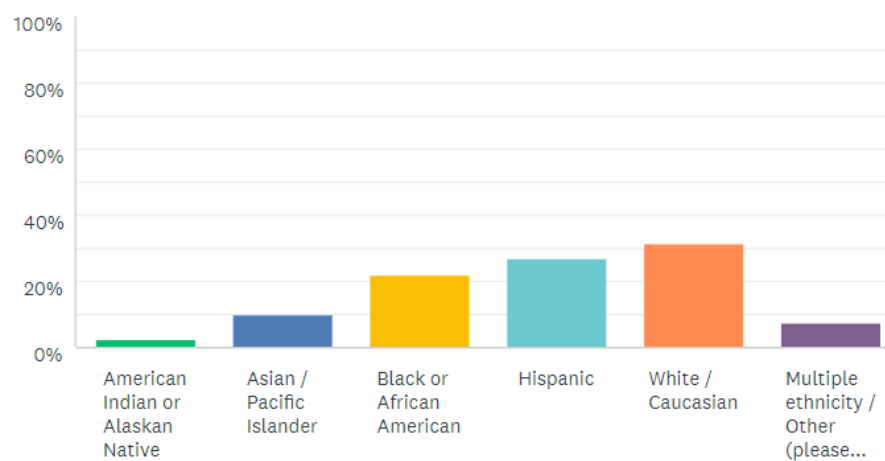


Figure 8. Ethnicity distribution of Hyflex students

Table 6

Frequency of Ethnicity

		Ethnicity				
Program			Frequency	Percent	Valid Percent	Cumulative Percent
Hyflex	Valid	Asian / Pacific Islander	4	9.8	9.8	9.8
		Black or African American	9	22.0	22.0	31.7
		Hispanic	11	26.8	26.8	58.5
		White / Caucasian	16	39.0	39.0	97.6
		Multiple Ethnicity/Other	1	2.4	2.4	100.0
		Total	41	100.0	100.0	
Face to Face	Valid	Asian / Pacific Islander	2	5.0	5.0	5.0
		Black or African American	2	5.0	5.0	10.0
		Hispanic	7	17.5	17.5	27.5
		White / Caucasian	26	65.0	65.0	92.5
		Multiple Ethnicity/Other	3	7.5	7.5	100.0
		Total	40	100.0	100.0	

Causal Comparative Data Analysis

Independent Samples *t*- tests

“Research Question 1: How do the different delivery modalities of Hyflex courses and traditional courses impact student learning?”

Final grade data from both sample groups was extracted from the institutional student information system and an independent samples *t*- test was calculated comparing the mean final grade of Hyflex students to the mean final grade of traditional students. No significant difference in final grade between the two groups was found ($t(79) = .204, p = .839$). The mean of the face to face/traditional student final grades ($M = 88.2858, SD = 17.14306$) was not significantly different from the mean of the Hyflex student final grades ($M = 87.6439, SD = 10.37138$). Findings indicate that Hypothesis One, “Delivery Modality has no impact on student learning/performance” should be accepted.

Table 7

Grade Average

Group Statistics					
	Program	N	Mean	Std. Deviation	Std. Error Mean
Grade_Average	Hyflex	41	87.6439	10.37138	1.61974
	Face to Face	40	88.2858	17.14306	2.71056

Independent Samples Test									
Levene's Test for Equality of Variances				t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper
Grade_Average	Equal variances assumed	.534	.467	-.204	79	.839	-.64185	3.13937	-6.89060 5.60690
	Equal variances not assumed			-.203	63.883	.840	-.64185	3.15764	-6.95017 5.66648

ANCOVAs

A one way, between subjects ANCOVA was calculated to examine the impact of delivery modality/program on grade average, covarying out the effect of age. The main effect for delivery modality/program was not significant ($F(1,78) = .113, p > .05$), with the grade average of Hyflex students not being significantly different ($M = 87.6439, SD = 10.37138$) than face to face/traditional students ($M = 88.2858, SD = 17.14306$), even after covarying out the effect of age. Findings indicate that Hypothesis One, “Delivery Modality has no effect on student learning/performance” should be accepted.

Table 8

ANCOVA with the Covariate of Age

Descriptive Statistics						
Dependent Variable: Grade_Average						
Program	Mean	Std. Deviation	N			
Hyflex	87.6439	10.37138	41			
Face to Face	88.2858	17.14306	40			
Total	87.9609	14.04122	81			

Tests of Between-Subjects Effects						
Dependent Variable: Grade_Average						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	24.588 ^a	2	12.294	.061	.941	.002
Intercept	54612.553	1	54612.553	270.499	.000	.776
Age	16.247	1	16.247	.080	.777	.001
Program	22.738	1	22.738	.113	.738	.001
Error	15747.870	78	201.896			
Total	64247.663	81				
Corrected Total	15772.459	80				

a. R Squared = .002 (Adjusted R Squared = -.024)

A one way, between subjects ANCOVA was calculated to examine the impact of delivery modality/program on grade average, covarying out the effect of gender. The main effect for

delivery modality/program was not significant ($F(1,78) = .067, p > .05$), with the grade average of Hyflex students not being significantly different ($M = 87.6439, SD = 10.37138$) than face to face/traditional students ($M = 88.2858, SD = 17.14306$), even after covarying out the effect of gender. Findings indicate that Hypothesis One, “Delivery Modality has no effect on student learning/performance” should be accepted.

Table 9 1

ANCOVA with the Covariate of Gender

Descriptive Statistics						
Dependent Variable: Grade_Average						
Program	Mean	Std. Deviation	N			
Hyflex	87.6439	10.37138	41			
Face to Face	88.2858	17.14306	40			
Total	87.9609	14.04122	81			

Tests of Between-Subjects Effects						
Dependent Variable: Grade_Average						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	31.700 ^a	2	15.850	.079	.925	.002
Intercept	49902.837	1	49902.837	247.283	.000	.760
Gender	23.359	1	23.359	.116	.735	.001
Program	13.485	1	13.485	.067	.797	.001
Error	15740.758	78	201.805			
Total	642478.663	81				
Corrected Total	15772.459	80				

a. R Squared = .002 (Adjusted R Squared = -.024)

A one way, between subjects ANCOVA was calculated to examine the impact of delivery modality/program on grade average, covarying out the effect of ethnicity. The main effect for delivery modality/program was not significant ($F(1,78) = .022, p > .05$), with the grade average of Hyflex students not being significantly different ($M = 87.6439, SD = 10.37138$) than face to

face/traditional students ($M = 88.2858$, $SD = 17.14306$), even after covarying out the effect of ethnicity. Findings indicate that Hypothesis One, “Delivery Modality has no effect on student learning/performance” should be accepted.

Table 10 1

ANCOVA with the Covariate of Ethnicity

Descriptive Statistics

Dependent Variable: Grade_Average

Program	Mean	Std. Deviation	N
Hyflex	87.6439	10.37138	41
Face to Face	88.2858	17.14306	40
Total	87.9609	14.04122	81

Tests of Between-Subjects Effects

Dependent Variable: Grade_Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	12.551 ^a	2	6.276	.031	.969	.001
Intercept	29117.178	1	29117.178	144.109	.000	.649
Ethnicity	4.210	1	4.210	.021	.886	.000
Program	4.487	1	4.487	.022	.882	.000
Error	15759.907	78	202.050			
Total	642478.663	81				
Corrected Total	15772.459	80				

a. R Squared = .001 (Adjusted R Squared = -.025)

“Research Question 2: How do the different delivery modalities of Hyflex courses and Traditional courses impact student satisfaction toward content and delivery?”

The following Likert satisfaction survey questions were examined to determine if program/delivery modality has an impact on student satisfaction toward content and delivery:

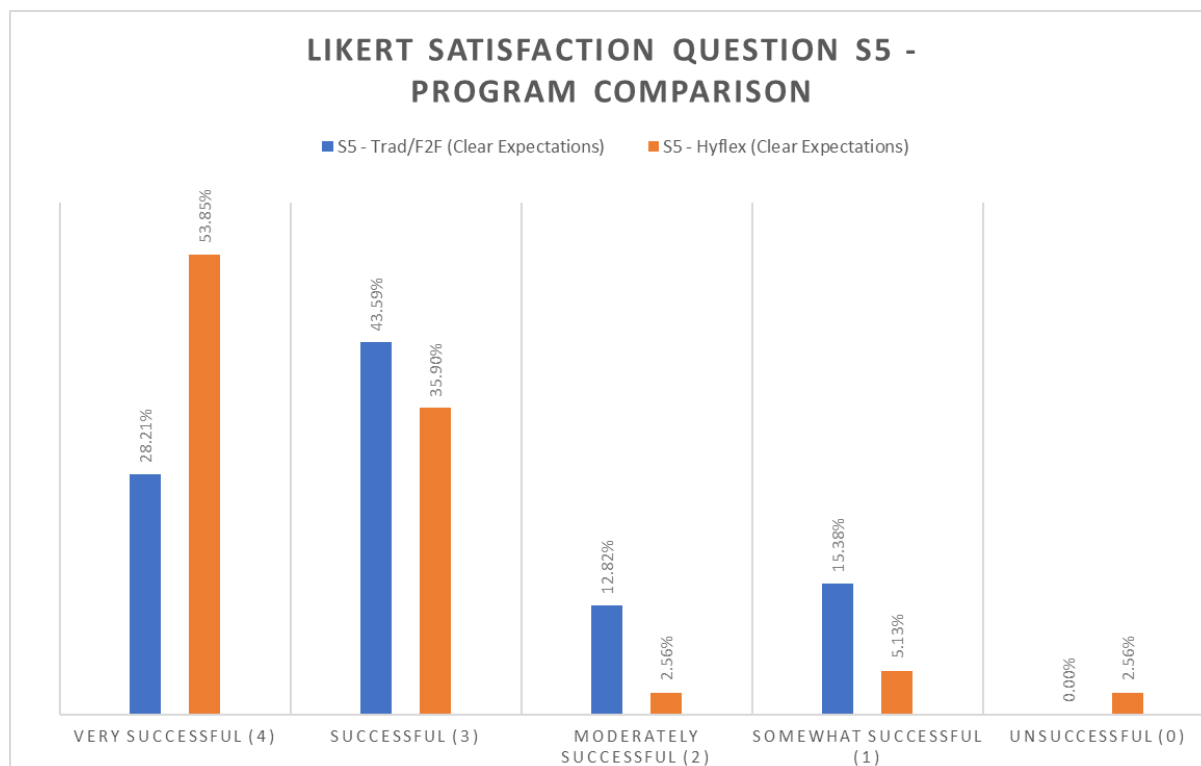


Figure 9. Likert satisfaction question 5 (S5). Overall, my instructors provided clear course requirements and expectations.

Likert survey data was collected through a distributed survey and an independent samples *t*- test comparing the mean score of the collected Likert scale satisfaction question, “Overall, my instructors provided clear course requirements and expectations” of Hyflex students, to the mean score of the same collected Likert scale satisfaction question of face to face/traditional students, and a significant difference was found between the means of the two groups ($t(76) = 2.184, p < .05$). The mean of the traditional students was significantly lower ($M = 2.85, SD = 1.014$) than the mean of the Hyflex group ($M = 3.33, SD = .955$). Findings indicate that Hypothesis Two, “Delivery Modality has no impact on student satisfaction” should be rejected.

Table 11

Likert Satisfaction Question 5 (S5)

Group Statistics					
	Program	N	Mean	Std. Deviation	Std. Error Mean
S5	Hyflex	39	3.33	.955	.153
	Face to Face	39	2.85	1.014	.162

Independent Samples Test									
Levene's Test for Equality of Variances				t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper
S5	Equal variances assumed	.225	.637	2.184	76	.032	.487	.223	.043 .931
	Equal variances not assumed			2.184	75.729	.032	.487	.223	.043 .931

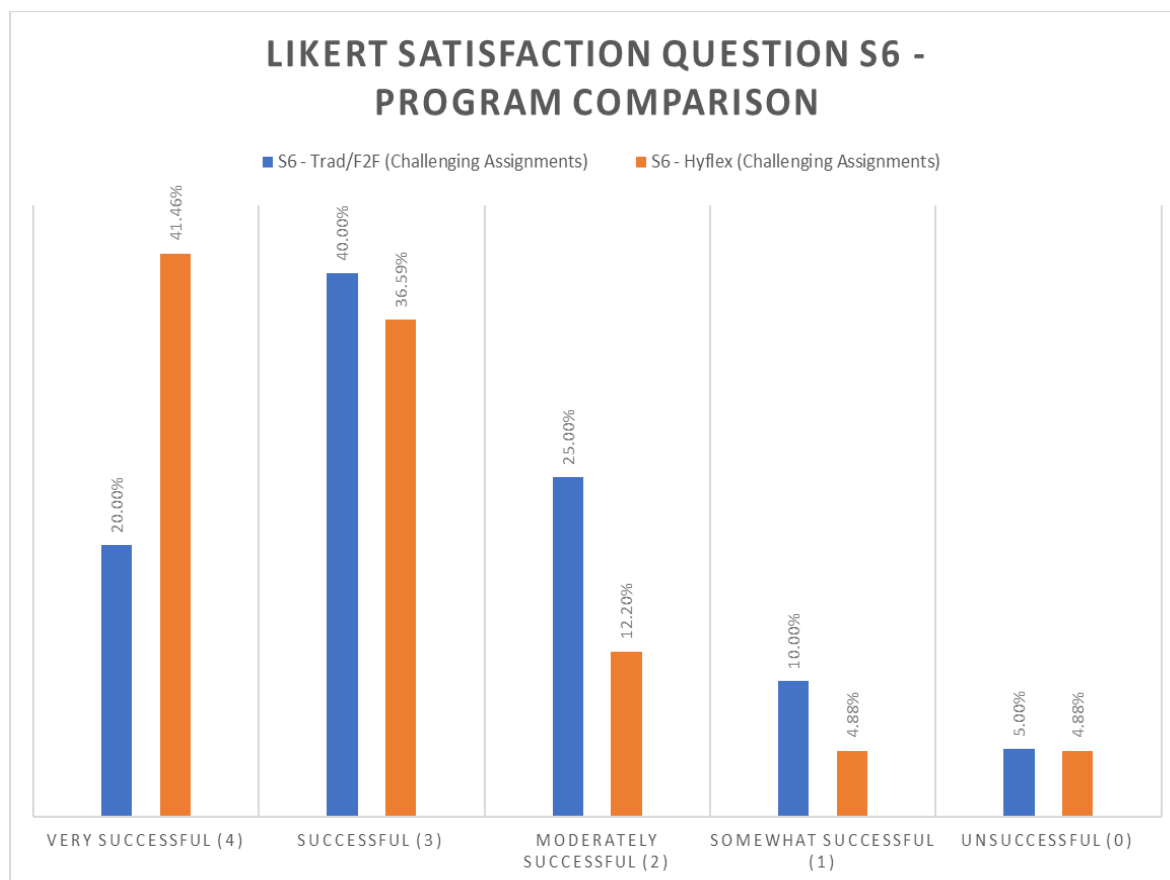


Figure 10. Likert satisfaction question 6 (S6). Overall, my instructors sufficiently challenged us with assignments.

Likert survey data was collected through a distributed survey and an independent samples *t*-test comparing the mean score of the collected Likert scale satisfaction question, “Overall, my instructors sufficiently challenged us with assignments” of Hyflex students, to the mean score of the same collected Likert scale satisfaction question of face to face/traditional students, and no significant difference was found ($t(79) = 1.856, p = .067$). The mean score of the face to face/students ($M = 2.60, SD = 1.081$) was not significantly different from the mean score of the Hyflex students ($M = 3.05, SD = 1.094$). Findings indicate that Hypothesis Two, “Delivery Modality has no impact on student satisfaction” should be accepted.

Table 12 1

Likert Satisfaction Question 6 (S6)

Group Statistics

	Program	N	Mean	Std. Deviation	Std. Error Mean
S6	Hyflex	41	3.05	1.094	.171
	Face to Face	40	2.60	1.081	.171

Independent Samples Test

		Levene's Test for Equality of Variances				t-test for Equality of Means			95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
S6	Equal variances assumed	.359	.551	1.856	79	.067	.449	.242	-.032	.930
	Equal variances not assumed			1.856	78.987	.067	.449	.242	-.032	.930

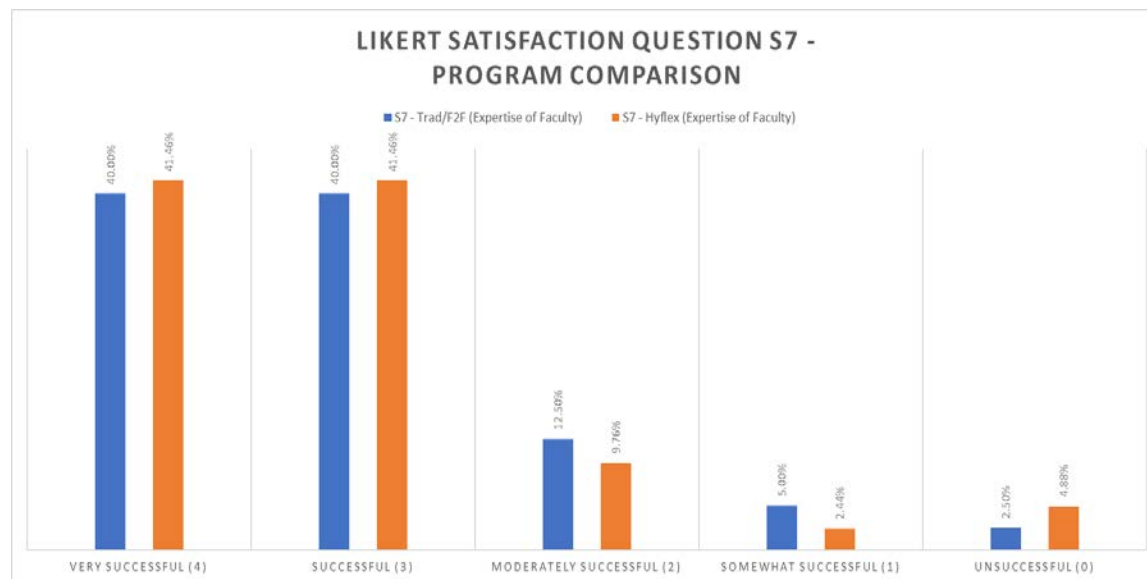


Figure 11. Likert satisfaction question 7 (S7). Overall, my instructors demonstrated expertise for the subject and content.

Likert survey data was collected through a distributed survey and an independent samples *t*-test comparing the mean score of the collected Likert scale satisfaction question, “Overall, my instructors demonstrated expertise for the subject and content” of Hyflex students, to the mean score of the same collected Likert scale satisfaction question of face to face/traditional students, and no significant difference was found ($t(79) = .098, p = .922$). The mean score of the face to

face/students ($M = 3.10$, $SD = .982$) was not significantly different from the mean score of the Hyflex students ($M = 3.12$, $SD = 1.029$). Findings indicate that Hypothesis Two, “Delivery Modality has no impact on student satisfaction” should be accepted.

Table 13

Likert Satisfaction Question 7 (S7)

Group Statistics					
	Program	N	Mean	Std. Deviation	Std. Error Mean
S7	Hyflex	41	3.12	1.029	.161
	Face to Face	40	3.10	.982	.155

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
S7	Equal variances assumed	.003	.958	.098	79	.922	.022	.224	-.423	.467
	Equal variances not assumed			.098	78.961	.922	.022	.223	-.423	.467

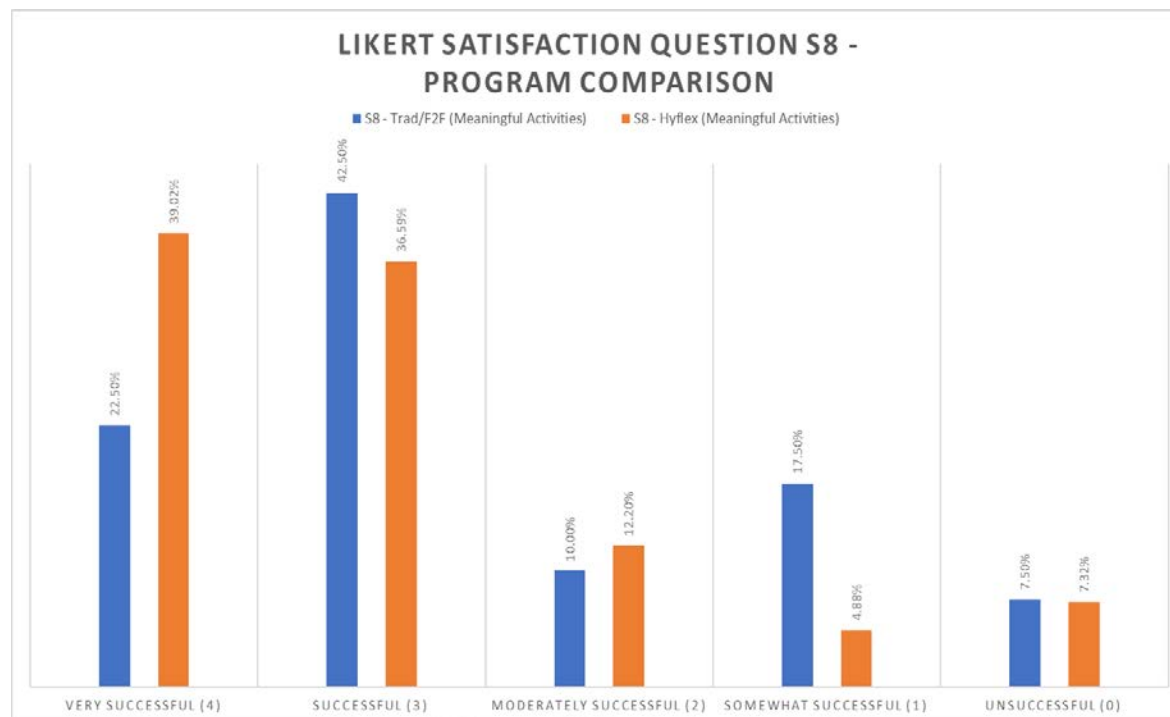


Figure 12. Likert satisfaction question 8 (S8). Overall, my instructors provided meaningful learning activities.

Likert survey data was collected through a distributed survey and an independent samples *t*-test comparing the mean score of the collected Likert scale satisfaction question, “Overall, my instructors provided meaningful learning activities” of Hyflex students, to the mean score of the same collected Likert scale satisfaction question of face to face/traditional students, and no significant difference was found ($t(79) = 1.491, p = .140$). The mean score of the face to face/students ($M = 2.55, SD = 1.239$) was not significantly different from the mean score of the Hyflex students ($M = 2.95, SD = 1.182$). Findings indicate that Hypothesis Two, “Delivery Modality has no impact on student satisfaction” should be accepted.

Table 14

Likert Satisfaction Question 8 (S8)

Group Statistics					
	Program	N	Mean	Std. Deviation	Std. Error Mean
S8	Hyflex	41	2.95	1.182	.185
	Face to Face	40	2.55	1.239	.196

Independent Samples Test										
		Levene's Test for Equality of Variances			t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
S8	Equal variances assumed	1.214	.274	1.491	79	.140	.401	.269	-.134	.937
	Equal variances not assumed			1.490	78.591	.140	.401	.269	-.135	.937

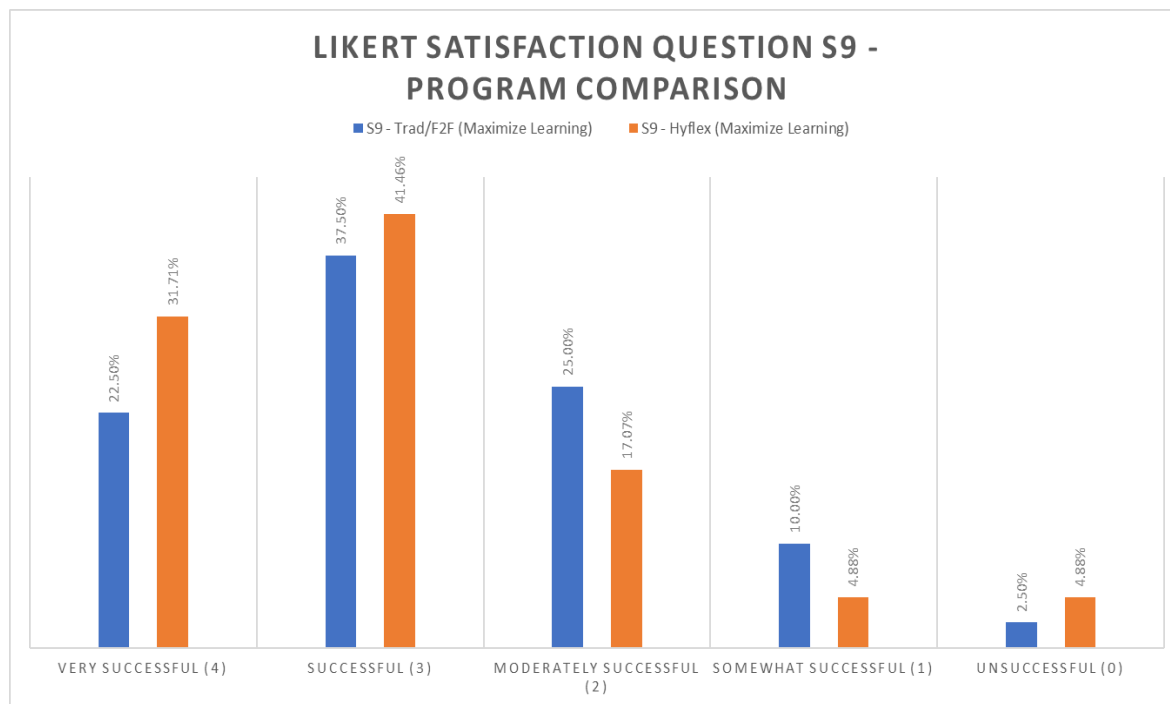


Figure 13. Likert satisfaction question 9 (S9). Overall, my instructors organized the course to maximize learning.

Likert survey data was collected through a distributed survey and an independent samples *t*-test comparing the mean score of the collected Likert scale satisfaction question, “Overall, my instructors organized the course to maximize learning” of Hyflex students, to the mean score of the same collected Likert scale satisfaction question of face to face/traditional students, and no significant difference was found ($t(78) = .895, p = .373$). The mean score of the face to face/students ($M = 2.69, SD = 1.030$) was not significantly different from the mean score of the Hyflex students ($M = 2.90, SD = 1.068$). Findings indicate that Hypothesis Two, “Delivery Modality has no impact on student satisfaction” should be accepted.

Table 15

Likert Satisfaction Question 9 (S9)

Group Statistics

	Program	N	Mean	Std. Deviation	Std. Error Mean
S9	Hyflex	41	2.90	1.068	.167
	Face to Face	39	2.69	1.030	.165

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
S9	Equal variances assumed	.186	.668	.895	78	.373	.210	.235	-.257	.677
	Equal variances not assumed			.896	77.984	.373	.210	.235	-.257	.677

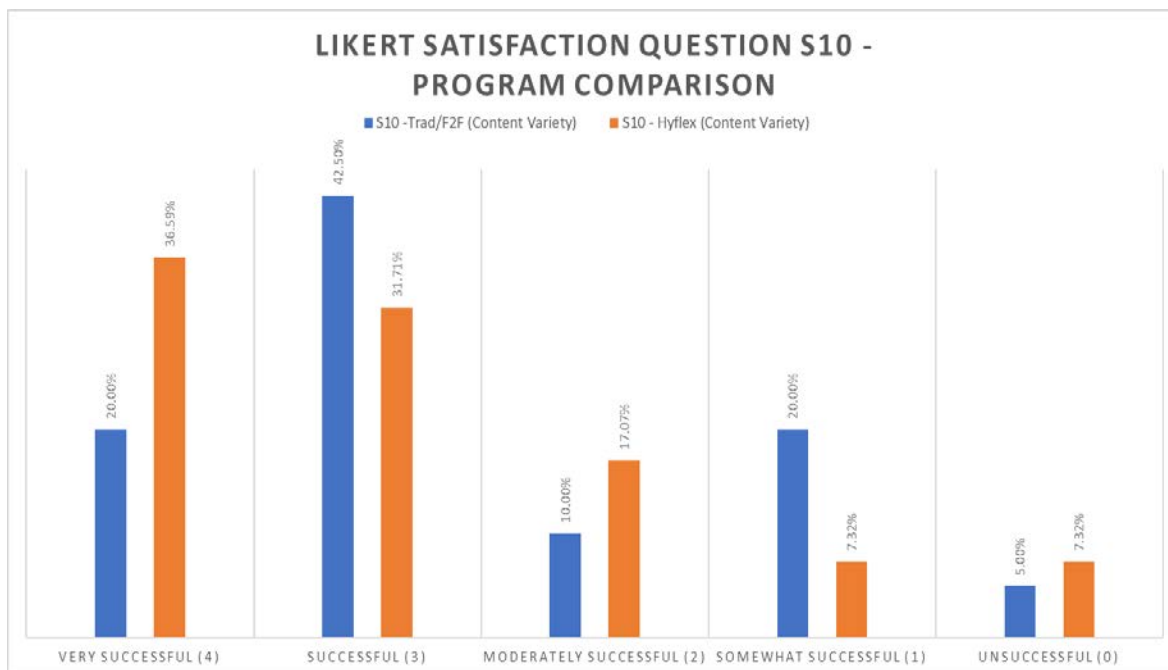


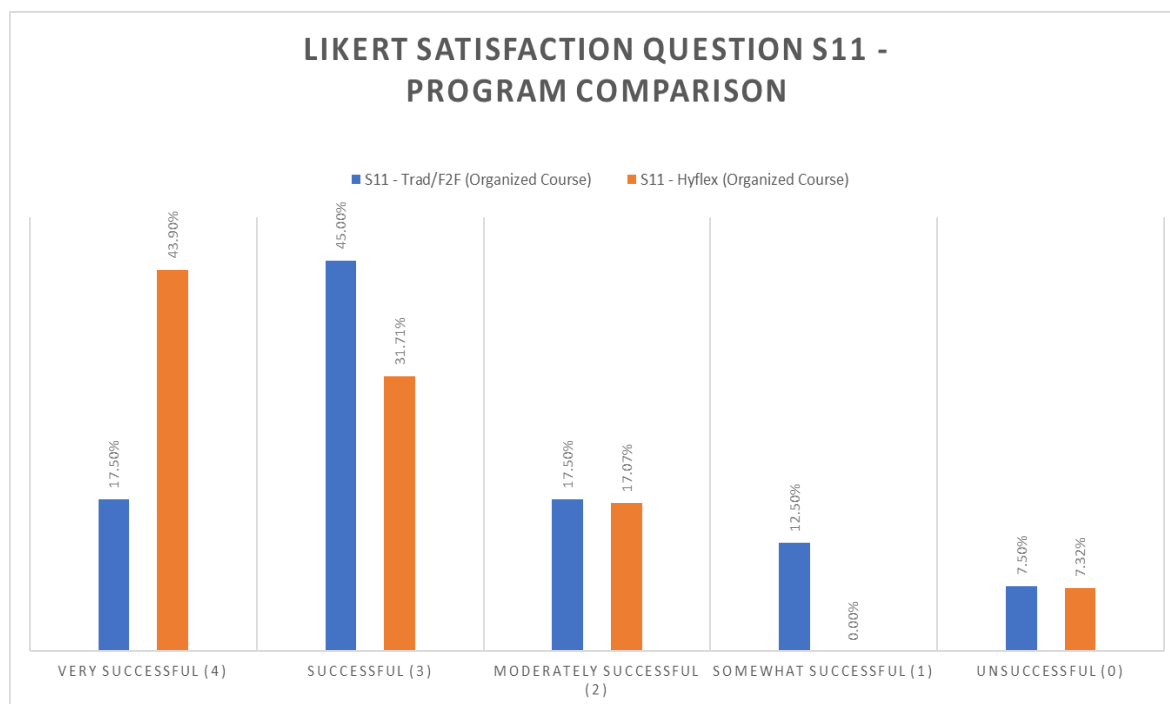
Figure 14. Likert satisfaction question 10 (S10). Overall, my instructors used an assortment of ways to share course content.

Likert survey data was collected through a distributed survey and an independent samples *t*-test comparing the mean score of the collected Likert scale satisfaction question, “Overall, my instructors used an assortment of ways to share course content” of Hyflex students, to the mean score of the same collected Likert scale satisfaction question of face to face/traditional students,

and no significant difference was found ($t(78) = 1.078, p = .284$). The mean score of the face to face/students ($M = 2.54, SD = 1.189$) was not significantly different from the mean score of the Hyflex students ($M = 2.83, SD = 1.223$). Findings indicate that Hypothesis Two, “Delivery Modality has no impact on student satisfaction” should be accepted.

Table 16

Likert Satisfaction Question 10 (S10)



Group Statistics					
Program	N	Mean	Std. Deviation	Std. Error Mean	
S10 Hyflex	41	2.83	1.223	.191	
Face to Face	39	2.54	1.189	.190	

Independent Samples Test										
Levene's Test for Equality of Variances				t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
S10	Equal variances assumed	.059	.808	1.078	78	.284	.291	.270	-.246	.828
	Equal variances not assumed			1.079	77.961	.284	.291	.270	-.246	.828

Figure 15. Likert satisfaction question 11 (S11). Overall, my instructors provided an organized learning environment.

Likert survey data was collected through a distributed survey and an independent samples *t*-test comparing the mean score of the collected Likert scale satisfaction question, “Overall, my instructors provided an organized learning environment” of Hyflex students, to the mean score of the same collected Likert scale satisfaction question of face to face/traditional students, and a significant difference was found between the means of the two groups ($t(79) = 2.055, p < .05$). The mean of the face to face/ traditional students was significantly lower ($M = 2.53, SD = 1.154$) than the mean of the Hyflex students ($M = 3.05, SD = .1.139$). Findings indicate that Hypothesis Two, “Delivery Modality has no impact on student satisfaction” should be rejected.

Table 17

Likert Satisfaction Question 11 (S11)

Group Statistics					
Program	N	Mean	Std. Deviation	Std. Error Mean	
S11 Hyflex	41	3.05	1.139	.178	
Face to Face	40	2.53	1.154	.183	

Independent Samples Test										
Levene's Test for Equality of Variances				t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
S11	Equal variances assumed	.475	.493	2.055	79	.043	.524	.255	.017	1.031
	Equal variances not assumed			2.055	78.884	.043	.524	.255	.016	1.031

Table 18

Likert Satisfaction Question Program Comparison

Likert Satisfaction Questions	Very Successful (4)	Successful (3)	Moderately Successful (2)	Somewhat Successful (1)	Unsuccessful (0)
S5 - Trad/F2F (Clear Expectations)	28.21%	43.59%	12.82%	15.38%	0.00%
S5 - Hyflex (Clear Expectations)	53.85%	35.90%	2.56%	5.13%	2.56%
S6 - Trad/F2F (Challenging Assignments)	20.00%	40.00%	25.00%	10.00%	5.00%
S6 - Hyflex (Challenging Assignments)	41.46%	36.59%	12.20%	4.88%	4.88%
S7 - Trad/F2F (Expertise of Faculty)	40.00%	40.00%	12.50%	5.00%	2.50%
S7 - Hyflex (Expertise of Faculty)	41.46%	41.46%	9.76%	2.44%	4.88%
S8 - Trad/F2F (Meaningful Activities)	22.50%	42.50%	10.00%	17.50%	7.50%
S8 - Hyflex (Meaningful Activities)	39.02%	36.59%	12.20%	4.88%	7.32%
S9 - Trad/F2F (Maximize Learning)	22.50%	37.50%	25.00%	10.00%	2.50%
S9 - Hyflex (Maximize Learning)	31.71%	41.46%	17.07%	4.88%	4.88%
S10 - Trad/F2F (Content Variety)	20.00%	42.50%	10.00%	20.00%	5.00%
S10 - Hyflex (Content Variety)	36.59%	31.71%	17.07%	7.32%	7.32%
S11 - Trad/F2F (Organized Course)	17.50%	45.00%	17.50%	12.50%	7.50%
S11 - Hyflex (Organized Course)	43.90%	31.71%	17.07%	0.00%	7.32%

A Cronbach's Alpha analysis was run to determine a scale of reliability (Table 19). Given a general acceptable level of reliability of .70, and 81 participants, it was determined that the Likert survey was reliable at .951.

Table 19

Cronbach's Alpha

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.951	.951	7

Phenomenological Analysis**Student Data**

The researcher was interested in the phenomenon of course delivery. The open-ended questions provided the venue of the participants to tell their stories.

Research Question 3: How does the ability to choose how to attend a course from session to session impact a student's perception of their learning in that course?

Open ended responses were collected from participating students in the traditional/face to face programs, through the distribution of survey questions, relating to student learning/performance. Students were asked how the flexibility or inflexibility of how they were able to attend their courses impacted their learning/performance. Three patterns emerged that included expressed reasons for learning success/lack of success, 1) Modality Preference; 2) Schedule Choice/Flexibility; and 3) Quality of Instruction. Data in the form of six tables provides the reader with a sample of the comments received. (Tables 20, 21, 22, 23, 24, 25) Tables 20, 22, and 24 focus on the learning success/lack of success of traditional students. Tables 21, 23, and 25 focus on the learning success/lack of success of Hyflex students.

A total of 32 out of 40 possible traditional students answered open-ended survey question one, “How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your perception of your learning in these courses? Explain,” and prompted responses fitting the pattern “Reasons for Learning Success/Lack of Success: Modality Preference.” A key example of a response fitting this pattern is, “I believe all courses were meant to be attended traditionally unless a course was not offered at the time then they would offer online classes as a last resort. I personally like attending classes as I learn more that way.” Table 20 lists more examples.

Table 20

Open Ended Survey Question #1 Traditional Responses: How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your perception of your learning in these courses? Explain

Traditional/Face to Face Student Responses Fitting the Pattern
 “Reasons for Learning Success/Lack of Success: Modality Preference”

“I believe all courses were meant to be attended traditionally unless a course was not offered at the time then they would offer online classes as a last resort. I personally like attending classes as I learn more that way.”

“Being able to attend each class meeting affected my perception of learning in a great way.”

“It is hands on, and I can ask questions directly to the teacher”

“I felt like we didn't actually learn as much in those environments that were not face to face.”

“I would have preferred the traditional, in class experience rather than hybrid courses (as almost every class was a hybrid course). This had a negative impact on my perception of learning.”

“In all of my classes attendance was mandatory. This had a positive effect on my perception of learning because I felt like I needed to be there, otherwise I would not succeed in the course.”

“When classes are skipped it's easy to miss important information; therefore, this it's very important to attend all classes, but especially the ones designed for my specific major!”

“When the course was an in-class course it made the material to be learned more important than the online option.”

“Having a set understanding that I would physically come to class, set an expectation that I would be better able to get hands on and more personalized instruction.”

A total of 37 out of 41 possible Hyflex students answered open-ended survey question one, “How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your perception of your learning in these courses? Explain,” and prompted responses fitting the pattern “Reasons for Learning Success/Lack of Success: Modality

Preference.” A key example of a response fitting this pattern is, “The ability to choose how to attend a course from class meeting to class meeting had a positive effect on my learning. In today's busy world online accessibility allows for individuals to pursue a degree yet stay mobile enough to interact with the everchanging world.” Table 21 lists more examples.

Table 21

Open Ended Survey Question #1 Hyflex Responses: How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your perception of your learning in these courses? Explain

Hyflex Student Responses Fitting the Pattern “Reasons for Learning Success/Lack of Success: Modality Preference”
<p>“The ability to choose how to attend a course from class meeting to class meeting had a positive effect on my learning. In today's busy world online accessibility allows for individuals to pursue a degree yet stay mobile enough to interact with the everchanging world.”</p> <p>“I liked the relief of overburdened work from multiple courses, and the one on one time the instructors put into each student's time.”</p> <p>“Allowed me to be more engaged when learning.”</p> <p>“I attended as an online student, so my attendance was measured through discussion questions. I was able to learn to the best of my ability as an online student. Had life circumstances permitted I would've preferred an on-campus experience to maximize my learning experience.”</p> <p>“It didn't affect my learning. There were some classes I thought should have been taught in the classroom, such as Counseling Theory.”</p> <p>“I enjoyed the choice to attend class with the Hyflex classes. I liked that I had the option but wasn't pressured to attend for a grade. It made it better for me and took some stress off.”</p>

A total of 32 out of 40 possible traditional students answered open ended survey question one, “How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your perception of your learning in these courses? Explain,” and prompted

responses fitting the pattern “Reasons for Learning Success/Lack of Success: Schedule Choice/Flexibility.” A key example of a response fitting this pattern is, “I don't know that the attendance rules were expressed very much, but some classes require attendance 3 times a week and others allow for the second or third class to be a work time. This flexibility has been very nice and has given me the ability to stay on top of the workload and absorb the info for longer.”

Table 22 lists more examples.

Table 22

Open Ended Survey Question #1 Traditional Responses: How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your perception of your learning in these courses? Explain

Traditional/Face to face Student Responses Fitting the Pattern
“Reasons for Learning Success/Lack of Success: Schedule Choice/Flexibility”

“The biggest issue I had was that I was not presented the opportunity to create my own schedule. It conflicted with basketball practices. This school has to be one of the only schools in the country that creates the schedule for their students as if they were still in high school.”

“I don't know that the attendance rules were expressed very much, but some classes require attendance 3 times a week and others allow for the second or third class to be a work time. This flexibility has been very nice and has given me the ability to stay on top of the workload and absorb the info for longer.”

“Well if I feel like I have to take the class then I know it's forced...and it's hard for me to get into the right mindset. However, I still end up enjoying the class itself, especially if it's a psych class.”

“Overall not having the ability to choose how to attend a course didn't affect my perception of learning. The only thing that affected my perception of learning was not being able to pick the time.”

“I was unable to set my courses in the schedule I preferred because only certain classes were offered for a specific semester. This caused many of the heavy load classes to fall on the same semester, making it difficult.”

A total of 37 out of 41 possible Hyflex students answered open ended survey question one, “How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your perception of your learning in these courses? Explain,” and prompted responses fitting the pattern “Reasons for Learning Success/Lack of Success: Schedule Choice/Flexibility.” A key example of a response fitting this pattern is, I was a Hyflex student and I loved the ability to choose to attend class in person. I am an extrovert, external processor, and collaborative learner. I appreciated and enjoyed my classes because I could learn with my peers and still complete assignments on my own.” Table 23 lists more examples.

Table 23

Open Ended Survey Question #1 Responses: How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your perception of your learning in these courses? Explain

Hyflex Student Responses Fitting the Pattern “Reasons for Learning Success/Lack of Success: Schedule Choice/Flexibility”
“I live an hour away from the campus. The weekly night class session helped clarify the online content. The flexibility aided greatly in being able to complete the courses on pace.”
“I liked the flexibility based on the inconsistency that my work schedule provided. It allowed me not to attend a scheduled class if my schedule didn't permit it. It kept the stress level down.”
“I like that I have the ability to attend classes and finish all my coursework at my own pace.”
“It allowed me to be flexible and to succeed as a student.”
“I was a Hyflex student and I loved the ability to choose to attend class in person. I am an extrovert, external processor, and collaborative learner. I appreciated and enjoyed my classes because I could learn with my peers and still complete assignments on my own.”
“Being able to choose online was challenging but very rewarding. Was able to study and complete assignments at my leisure. Making it not as stressful and gave me time for all other activities of daily living.”

“I found that I could learn and study any time. I wasn't constrained to a desk or had to travel to learn. It worked well for me and my schedule. I enjoyed having that ability. As an adult working fulltime and going to school, studying had to be on my time and according to my availability in order to succeed.”

A total of 32 out of 40 possible traditional students answered open ended survey question one, “How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your perception of your learning in these courses? Explain,” and prompted responses fitting the pattern “Reasons for Learning Success/Lack of Success: Quality of Instruction.” A key example of a response fitting this pattern is, “Having a set understanding that I would physically come to class, set an expectation that I would be better able to get hands on and more personalized instruction.” Table 24 lists more examples.

Table 24

Open Ended Survey Question #1 Responses: How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your perception of your learning in these courses? Explain

Traditional/Face to face Student Responses Fitting the Pattern
“Reasons for Learning Success/Lack of Success: Quality of Instruction”

“Having a set understanding that I would physically come to class, set an expectation that I would be better able to get hands on and more personalized instruction.”

“The classes did make me think more about things that I would have never thought of if I did not take those classes.”

“I learned better in classes where I spent more time in class as opposed to on assignments outside of class.”

A total of 37 out of 41 possible Hyflex students answered open ended survey question one, “How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your perception of your learning in these courses? Explain,” and prompted responses fitting the pattern “Reasons for Learning Success/Lack of Success: Quality of Instruction.” A key example of a response fitting this pattern is, “I am an online student, so I did not have to attend class which I liked. However, the school did incorporate virtual conferences which made a huge difference in helping students to communicate with the professor.” Table 25 lists more examples.

Table 25

Open Ended Survey Question #1 Responses: How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your perception of your learning in these courses? Explain

Hyflex Student Responses Fitting the Pattern “Reasons for Learning Success/Lack of Success: Quality of Instruction”
“Allowed me to be more engaged when learning.”
“I am an online student, so I did not have to attend class which I liked. However, the school did incorporate virtual conferences which made a huge difference in helping students to communicate with the professor.”
“I do not like the mandated class discussion once per class. The link is difficult to understand. Clear instructions were not given on the fact this was happening nor on how to join, when, or that it was to replace the normal discussion post for the week.”
“Face to Face was key for a depth of knowledge I would not have otherwise received from "Online Discussions" or Online reading.”

Research Question 4: How does the ability to choose how to attend a course from session to session impact a student’s overall satisfaction with that course?

Open ended responses were collected from participating students in the traditional/face to face programs, through the distribution of survey questions, relating to student satisfaction. Students were asked how the flexibility or inflexibility of how they were able to attend their courses impacted their satisfaction. Three patterns emerged that included expressed reasons for satisfaction/lack of satisfaction, 1) Modality Preference; 2) Schedule Choice/Flexibility; and 3) Quality of Instruction. Data in the form of six tables provides the reader with a sample of the comments received. (Tables 26, 27, 28, 29, 30, 31) Tables 26, 28, and 30 focus on the satisfaction of traditional students. Tables 27, 29, and 31 focus on the satisfaction of Hyflex students.

A total of 32 out of 40 possible traditional students answered open ended survey question two, “How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your overall satisfaction with that course? Explain,” and prompted responses fitting the pattern “Reasons for Satisfaction/Lack of Satisfaction: Modality Preference.” A key example of a response fitting this pattern is, “I like traditional courses better... so I was only unsatisfied a couple times when I had to do online.” Table 26 lists more examples.

Table 26

Open Ended Survey Question #2 Traditional Responses: How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your overall satisfaction with that course? Explain

Traditional/Face to face Student Responses Fitting the Pattern
“Reasons for Satisfaction/Lack of Satisfaction: Modality Preference”

“This does not affect much to me as I was a fulltime student and my availability was very open”

“Traditional classes for my major were better and more meaningful because of the hands-on experiences.”

“The inability to choose was okay because it was less confusing on which course was required to graduate.”

“I like traditional courses better... so I was only unsatisfied a couple times when I had to do online.”

“Attending each course from class to class was very helpful in my learning of that certain subject. Overall it was very satisfactory.”

“I’m an extrovert I learn better with people and real discussions. Discussion boards suck, they don’t help and are busywork. So many of my classes had them, including the non-online ones!”

“I was more satisfied with the online courses than some of the in-class courses.”

“When I signed up to go to college, I specifically chose not to go to an online school. However, in almost every class, there was some aspect of online learning this made these classes and subject matter unappealing to me.”

A total of 37 out of 41 possible Hyflex students answered open-ended survey question two, “How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your overall satisfaction with that course? Explain,” and prompted responses fitting the pattern “Reasons for Satisfaction/Lack of Satisfaction: Modality Preference.” A key example of a response fitting this pattern is, “I was very satisfied with the ability to attend courses without being overwhelmed by too much work. I also preferred the online courses due to my busy schedule and inability to attend in classroom meetings.” Table 27 lists more examples.

Table 27

Open Ended Survey Question #2 Hyflex Responses: How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your overall satisfaction with that course? Explain

Hyflex Student Responses Fitting the Pattern “Reasons for Satisfaction/Lack of Satisfaction: Modality Preference”
<p>”The ability to choose helped greatly, and did not delay my program completion.”</p> <p>“The ability to choose provided deep satisfaction. I can attend a quality institute of higher learning from anywhere around the world.”</p> <p>“I was very satisfied with the ability to attend courses without being overwhelmed by too much work. I also preferred the online courses due to my busy schedule and inability to attend in classroom meetings.”</p> <p>“Again, had life circumstances permitted I would've preferred an on-campus experience to maximize my learning experience. Otherwise I was pleased with my experience!”</p> <p>“It was more difficult for me doing only online. I prefer in class.”</p> <p>“Being able to do all of my courses online had advantages and disadvantages. The advantages outweighed the disadvantages.”</p> <p>“I was extremely satisfied when I could choose to attend in person. Whenever this was not an option, my level of satisfaction decreased.”</p> <p>“Online gave me the opportunity to study/read and research in the comfort of my own home. Often as my children did theirs. My grades improved dramatically, and I was able to truly enjoy the course material. I am utterly satisfied with online schooling.”</p>

A total of 32 out of 40 possible traditional students answered open ended survey question two, “How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your overall satisfaction with that course? Explain,” and prompted responses fitting the pattern “Reasons for Satisfaction/Lack of Satisfaction: Schedule Choice/Flexibility.” A key example of a response fitting this pattern is, “Again, the inability to choose how to attend

a course did not affect my overall satisfaction, it was mostly the time that affected the satisfaction.” Table 28 lists more examples.

Table 28

Open Ended Survey Question #2 Traditional Responses: How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your overall satisfaction with that course? Explain

Traditional/Face to face Student Responses Fitting the Pattern “Reasons for Satisfaction/Lack of Satisfaction – Schedule Choice/Flexibility”
<p>“It has been really nice to have a few class periods that are just set aside for studying, because this has given me the opportunity to spend more time with my family and study at a separate time on occasion. This family time or rest time and flexibility with study/learning time has led to an overall improved mental health level and has reduced my anxiety to almost an unnoticeable level... huge blessing and praise! And I do think that having the bit of stretch in my schedule has helped with that!”</p> <p>“While I did not like the courses I took at this university, my inability to choose how to attend the course had a positive effect on my satisfaction. I say this because, if I had the option of taking them online, for example, I would have felt less inclined to do the work myself. Because attendance was mandatory, it held me accountable.”</p> <p>“Again, the inability to choose how to attend a course did not affect my overall satisfaction, it was mostly the time that affected the satisfaction.”</p> <p>“While there were moments that I wished to do an online version of some classes, I was generally satisfied with my on-ground courses.”</p>

A total of 37 out of 41 possible Hyflex students answered open ended survey question two, “How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your overall satisfaction with that course? Explain,” and prompted responses fitting the pattern “Reasons for Satisfaction/Lack of Satisfaction: Schedule Choice/Flexibility.”

A key example of a response fitting this pattern is, “Very satisfied with the ability to have classes

that work around my work schedule and to complete my coursework at my own pace.” Table 29 lists more examples.

Table 29

Open Ended Survey Question #2 Hyflex Responses: How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your overall satisfaction with that course? Explain

Hyflex Student Responses Fitting the Pattern “Reasons for Satisfaction/Lack of Satisfaction – Schedule Choice/Flexibility”
“Nice to have the flexibility so my view was very positive.”
“I was really happy that I was able to finish school and still be able to work.”
“Very satisfied with the ability to have classes that work around my work schedule and to complete my coursework at my own pace.”
“It was once again convenient for my work and extracurricular life outside of school.”
“It helped me to really be focus on that subject and it was nice to know I had the ability to do so.”
“Being able to complete the material online increased my satisfaction of the course, especially when I was working full time.”
“I had higher satisfaction taking the Hyflex class after being there in person AND online.”
“ <u>I think</u> that I was very satisfied with the educational experience because I was able to manage my time in order to have a work, life and school balance.”

A total of 32 out of 40 possible traditional students answered open ended survey question two, “How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your overall satisfaction with that course? Explain,” and prompted responses fitting the pattern “Reasons for Satisfaction/Lack of Satisfaction: Quality of Instruction.” A key example of a response fitting this pattern is, “Being able to take the College Comp courses in

class satisfied me completely due to have the teacher in front of you every week as a resource for anything that you might be struggling on.” Table 30 lists more examples.

Table 30

Open Ended Survey Question #2 Traditional Responses: How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your overall satisfaction with that course? Explain

Traditional/Face to Face Student Responses Fitting the Pattern “Reasons for Satisfaction/Lack of Satisfaction – Quality of Instruction”
“Some courses were just sitting and listening to lectures and regurgitating information when necessary.”
“I always walked away from the course feeling as if I didn't learn very much and didn't get a comprehensive overview of the subject.”
“Being able to take the College Comp courses in class satisfied me completely due to have the teacher in front of you every week as a resource for anything that you might be struggling on.”

A total of 37 out of 41 possible Hyflex students answered open ended survey question two, “How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your overall satisfaction with that course? Explain,” and prompted responses fitting the pattern “Reasons for Satisfaction/Lack of Satisfaction: Quality of Instruction.” A key example of a response fitting this pattern is, “As I stated previously, I am an online student. I think the online classes are great but need improvement with directions in course assignments.”

Table 31 lists more examples.

Table 31

Open Ended Survey Question #2 Hyflex Responses: How did the ability/inability to choose how to attend a course from class meeting to class meeting impact your overall satisfaction with that course? Explain

Hyflex Student Responses Fitting the Pattern "Reasons for Satisfaction/Lack of Satisfaction – Quality of Instruction"
"I am satisfied with the format, but the content could be updated."
"Some personal interaction may be a good thing."
"As I stated previously, I am an online student. I think the online classes are great but need improvement with directions in course assignments."
"I enjoyed it very much. Everyone learns differently. I can learn without being in a classroom setting. Professors were very helpful and willing to talk or discuss assignments by email, mostly any time I needed it. They were very responsive and even understood the online environment and its pitfalls. I liked getting, I think, the "real" opinions from classmates. I didn't feel pressured to pretend."
"I am satisfied with my courses. Some were definitely questionable."
"Affects my overall satisfaction strongly as I learn better through direct communication with the instructors."

Open ended responses were collected from participating students in the traditional/face to face programs, through the distribution of survey questions, relating to student learning success and satisfaction. Students were asked to give open ended comments about their experience with these courses. Three patterns emerged that included expressed reasons for satisfaction/lack of satisfaction, 1) Modality Preference; 2) Schedule Choice/Flexibility; and 3) Quality of Instruction. Data in the form of two tables provides the reader with a sample of the comments

received. (Tables 32, 33) Table 32 focuses on the comments of traditional students. Table 33 focuses on the comments of Hyflex students.

A total of 28 out of 40 possible traditional students answered open ended survey question three, “Any other comments about your experience with these courses you would like to share?,” and prompted responses fitting the pattern “Reasons for Learning Success/Lack of Success and Satisfaction/Lack of Satisfaction: Modality Preference, Schedule Choice/Flexibility, and Quality of Instruction.” A key example of a response fitting this pattern is, “I love learning. So very much. These professors really care about us and I am always bragging on them. Like I have the best professors and they care about us and pray for us... etc. The student culture is friendly though sometimes unmotivated, so we have to work on spurring each other on. The work and information tend to be reliable and useful.” Table 32 lists more examples.

Table 32

Open Ended Survey Question #3 Traditional Responses: Any other comments about your experience with these courses you would like to share?

<p>Traditional/Face to Face Student Responses Fitting the Pattern “Reasons for Learning Success/Satisfaction or Lack of Learning Success/Satisfaction – Modality Preference, Schedule Choice/Flexibility, and Quality of Instruction”</p>

“I love the school!”

“We’ve filled our course surveys each semester and have complained about the incompetency of a certain professor and her subpar “teaching.” She’s not what she used to be, and we students are cheated out of our money, time, and education with her poor standards for her own teaching. The price we pay for these courses do not match the poor quality of teaching. She is also unavailable for questions, clearly contradicts herself on assignments and expectations and has a response to any questions we have for clarity that are simply unbecoming of a businesswoman. She is unfit to teach.”

“I just wish we had more exposure to the real world while studying as I was busy getting my required volunteer hours in, I also was employed as I had to spend on myself and student loans, as well being a fulltime student. I don't have the experience jobs require. Whereas, if I studied at another school I believe that experience would have been part of the graduating process as they are alongside professors who conduct their own research.”

“I love learning. So very much. These professors really care about us and I am always bragging on them. Like I have the best professors and they care about us and pray for us... etc. The student culture is friendly though sometimes unmotivated, so we have to work on spurring each other on. The work and information tend to be reliable and useful.”

“Taking Greek in 8 weeks is very hard, even for an honors student like myself. I wouldn't recommend taking something like that in 8 weeks or classes where in class discussion could be very valuable, like communication courses”

“Courses where well organized for the most part.”

A total of 33 out of 41 possible Hyflex students answered open ended survey question three, “Any other comments about your experience with these courses you would like to share?,” and prompted responses fitting the pattern “Reasons for Learning Success/Lack of Success and Reasons for Satisfaction/Lack of Satisfaction: Modality Preference, Schedule Choice/Flexibility, and Quality of Instruction.” A key example of a response fitting this pattern is, “Overall, I enjoyed the experience. I enjoy face.to face learning so that would always be my first choice if I had. Being a professional though, my schedule would never permit it.” Table 33 lists more examples.

Table 33

Open Ended Survey Question #3 Responses: Any other comments about your experience with these courses you would like to share?

<p style="text-align: center;">Hyflex Student Responses Fitting the Pattern “Reasons for Learning Success/Satisfaction or Lack of Learning Success/Satisfaction – Modality Preference, Schedule Choice/Flexibility, and Quality of Instruction”</p>

“I appreciate it when our professors take the time to include themselves in class discussions over the entire week's studies. Too often I have noticed instructors make their comments late on Sunday.”

“Being raised in a traditional classroom setting had its advantages, however the virtual setting fosters educational community without requiring a physical presence. I was apprehensive about going to college online for years. It took time to accept the idea that my education would be valid and warranted even though I did not attend in a traditional classroom setting. My experience overall has been positive, meaningful and empowering.”

“Overall, I enjoyed the experience. I enjoy face.to face learning so that would always be my first choice if I had. Being a professional though, my schedule would never permit it.”

“Absolutely phenomenal. The instructor took much time out of her day to respond to concerns and emails as quickly as possible and was always availed to help when reached out to. And she often checked in, kept updated on my progress through the course, and helped in every way needed. Absolutely awesome!”

“Think outside the box when coming up with lessons. Don’t just ask students to write papers on everything. There are more ways to know if your students actually read the material and did their assignments other than just making us write papers for everything. This to me shows LAZINESS and COMPLACENCY on the part of your staff and every individual who has input on the course material process.”

“I loved the nontraditional program. I felt valued as a student when I could connect with and learn from my professors face to face. Although my season of life did not allow me to study as a traditional student, I chose this school because I could still come to class and participate in lessons with my peers. This was a valuable experience for me that I hope future students can enjoy.”

“I don't think online learning is for everyone, but it could be a Godsent type of learning modality for students like me.”

Faculty/Staff Data

Research Question 3: How does the ability to choose how to attend a course from session to session impact a student's perception of their learning in that course?

Research Question 4: How does the ability to choose how to attend a course from session to session impact a student's overall satisfaction with that course?

Open ended responses to phone interviews were recorded, transcribed, and analyzed from two faculty/staff members from the institution, that had participated in teaching and administrating within both Hyflex and traditional/face to face programs. These faculty/staff members were chosen because of their unique position of being both professors and support staff for both programs. These faculty/staff were asked how they thought the flexibility or inflexibility of how students were able to attend their courses effected their learning/performance and satisfaction. Five patterns emerged that included expressed reasons for learning success/lack of success and satisfaction/lack of satisfaction that included Modality Preference; Schedule Choice/Flexibility; Quality of Instruction; Student Count; and Course Length. The first three patterns that emerged are the same as those that emerged with student survey data, with the addition of Student Count and Course Length. Data in the form of five tables provides the reader with a sample of the comments received. (Tables 34, 35, 36, 37, 38)

A total of two out of two possible faculty/staff answered open ended interview questions, and prompted responses fitting the pattern “Reasons for Learning Success/Lack of Success and Reasons for Satisfaction/Lack of Satisfaction: Modality Preference. A key example of a response fitting this pattern is, “I actually had 20 total students in my traditional class each week and

offered them an attendance choice as a pilot. I had about eight of those students online and the athletes loved it because they had that option. They wanted to be in class, but they couldn't be in class though.” Table 34 lists more examples.

Table 34

Interview Responses: Faculty/staff members were asked how they thought the flexibility or inflexibility of how students were able to attend their courses impacted their learning/performance or satisfaction.

Faculty/Staff Responses Fitting the Pattern
“Reasons for Learning Success/Satisfaction
or
Lack of Learning Success/Satisfaction – Modality Preference”

“I actually had 20 total students in my traditional class each week and offered them an attendance choice as a pilot. I had about eight of those students online and the athletes loved it because they had that option. They wanted to be in class, but they couldn't be in class though.”

“I think it did affect both in the sense that if a traditional student sense that they had a part to play in the decision about how they were learning. They were much more engaged in the process. And with the traditional model, there really wasn't that flexibility, I could tell that in general as students might be a little bit less engaged in the learning process and enjoying it.”

“Yeah, as a professor my preference would be Hyflex simply because with my experience I wanted to be a much more engaged faculty member with students. And I wanted them to learn the material within a day. It wasn't about me. It was about them. And so for me as a professor, I appreciated having the flexibility to engage with the students outside of the normal setting.”

A total of 2 out of 2 possible faculty/staff answered open ended interview questions, and prompted responses fitting the pattern “Reasons for Learning Success/Lack of Success and Reasons for Satisfaction/Lack of Satisfaction: Schedule Choice. A key example of a response fitting this pattern is, “The people that had that option for week to week, and actually took advantage of it, actually we're happier.” Table 35 lists more examples.

Table 35

Interview Responses: Faculty/staff members were asked how they thought the flexibility or inflexibility of how students were able to attend their courses effected their learning/performance or satisfaction.

Faculty/Staff Responses Fitting the Pattern
“Reasons for Learning Success/Satisfaction

or

Lack of Learning Success/Satisfaction – Schedule Choice/Flexibility”

“I would say this. Yes, people (traditional students) did say they wanted choices and things to be different. Yes. I have heard things like that all the time like, you know, students needing to work or them not being able to get there for the class meeting, that sort of thing. That's a hard one because, I mean I would say there are a few that that would definitely qualify for, but the majority you know basically had a certain thing in mind when they signed on to go to the traditional program at the school and they just accepted it as that's the way you do school. Some of them I even know went online because they couldn't do it that way.”

“A lot of people are switching over to online because they didn't have that flexibility.”

“The people that had that option for week to week, and actually took advantage of it, actually we're happier.”

“So, I think it has a lot to do with the institution, but I do think it is awesome for athletes. I do think it works better in a traditional model, maybe.”

“In the professor's perspective, to automatically have the students to be able to go online when they're going to be absent is wonderful. I mean I do that anyways in my classes whether it is Hyflex or not. I think building that in no matter what, not matter if the class is called hyflex, is really powerful. Because athletes are gone. Music majors are gone you know? So having the ability to automatically do something online. I think it's powerful.”

“Yeah, I think in today's culture with the students, what they were experiencing is a confinement where, when they were told that they had to be in class at certain time and had to be in every class and there were issues, they weren't there, the Hyflex students appreciated having flexibility with their attendance based upon choices they made in life or requirements they had outside of the classroom.”

A total of 2 out of 2 possible faculty/staff answered open ended interview questions, and prompted responses fitting the pattern “Reasons for Learning Success/Lack of Success and Reasons for Satisfaction/Lack of Satisfaction: Quality of Instruction. A key example of a response fitting this pattern is, “I think for the most part I answered but I think the bottom line is that Hyflex works when there's a big enough group of people. It doesn't work when it's small numbers because especially on ground, not having that learning experience like that they would enjoy you know.” Table 36 lists more examples.

Table 36

Interview Responses: Faculty/staff members were asked how they thought the flexibility or inflexibility of how students were able to attend their courses effected their learning/performance or satisfaction.

<hr/> Faculty/Staff Responses Fitting the Pattern “Reasons for Learning Success/Satisfaction or Lack of Learning Success/Satisfaction – Quality of Instruction” <hr/>
<p>“I think for the most part I answered but I think the bottom line is that Hyflex works when there's a big enough group of people. It doesn't work when it's small numbers because especially on ground, not having that learning experience like that they would enjoy you know.”</p> <p>“I think that is on a course by course basis, it all depends on the flexibility of the professor in a sense because at least for my experience, the traditional professors wanted to spend most of their time lecturing in a classroom setting. It created an environment where if the students knew that there were other options, other than that traditional setting, it did create a perception on the part of the students that they just they would rather have the flexibility if possible and sometimes that's because of the lack of engagement on the part of the professor.”</p> <p>“In general, I think they were certainly satisfied with Hyflex from my estimate. Just my opinion. I think in general the reason why they wouldn't be satisfied with it is if the professor didn't necessarily model a true Hyflex model and what they were doing and it's just that the professor was not wanting to come to class or they had other engagements time wise during that time slot”</p> <hr/>

A total of 2 out of 2 possible faculty/staff answered open ended interview questions, and prompted responses fitting the pattern “Reasons for Learning Success/Lack of Success and Reasons for Satisfaction/Lack of Satisfaction: Student Count. A key example of a response fitting this pattern is, “I think those that came on ground or the Hyflex program were frustrated. I think the ones that chose online each week, we're happy, does that make sense? Because the ones that showed up, and then there's only one or two people in the class, were frustrated. I think that it's a number thing more than anything.” Table 37 lists more examples.

Table 37

Interview Responses: Faculty/staff members were asked how they thought the flexibility or inflexibility of how students were able to attend their courses effected their learning/performance or satisfaction.

Faculty/Staff Responses Fitting the Pattern
“Reasons for Learning Success/Satisfaction
or
Lack of Learning Success/Satisfaction – Student Count”

“I think those that came on ground or the Hyflex program were frustrated. I think the ones that chose online each week, we're happy, does that make sense? Because the ones that showed up, and then there's only one or two people in the class, were frustrated. I think that it's a number thing more than anything.”

“Yeah, because our numbers were not super big on ground in the students that we're going to come every week. They were not going to do the option of hyflex. They just wanted to come do an on ground class. They were coming to class with just one or two students and that was frustrating for them.”

“I have definitely seen that the effect of Hyflex depends on the about what size of the classes if somebody's happy. I mean it impacts which group of students are actually happy or not. It's like you're saying, it is those that take advantage of it that are the happiest”.

A total of 2 out of 2 possible faculty/staff answered open ended interview questions, and prompted responses fitting the pattern “Reasons for Learning Success/Lack of Success and Reasons for Satisfaction/Lack of Satisfaction: Course Length. A key example of a response fitting this pattern is, “From my experience. I also think Hyflex works best in an 8-week or 5-week model rather than 16-week model.” Table 38 lists more examples.

Table 38

Interview Responses: Faculty/staff members were asked how they thought the flexibility or inflexibility of how students were able to attend their courses effected their learning/performance or satisfaction.

Faculty/Staff Responses Fitting the Pattern
“Reasons for Learning Success/Satisfaction
or
Lack of Learning Success/Satisfaction – Course Length”

“From my experience. I also think Hyflex works best in an eight week or five-week model rather than 16-week model.”

“I mean honestly that was very good for the traditional students. I mean the students loved it because like I said a lot of them are athletes and so it only being eight weeks, there were people they liked it. It was only eight weeks because then they didn't have to be there as long and because it was you know, it was the Hyflex model, it just was very flexible for them period. I mean, you know, I could tell that a lot of people appreciated taking a class that way in that particular instance.”

“Yeah, so it in terms of the length of the course, I think some courses lent themselves to a shorter timeframe. Some of the difficulties that I experience with students not just as a faculty but even as a as a coach ,what I noticed is if the student was engaged in four traditional classes and they had a Hyflex class on top of that that was a 5 week course, sometimes the students that they had other outstanding responsibilities had a difficult time being able to focus on that 5week course well because they also had the traditional courses. I think if a student had one or two Hyflex classes and this is more with the adult students I was experiencing it with, In the 5 week format if they only had one or two of those classes, they did a much better job with being able to manage it then say if they were mixing and matching with the 16 week modality on top of that.”

Faculty/Staff

Open-ended responses to phone interviews were recorded, transcribed, and analyzed from two faculty/staff members from the institution, that had participated in teaching and administrating within both Hyflex and traditional/face to face programs. These faculty/staff were asked how Hyflex courses impacted faculty/staff performance or satisfaction. Five patterns emerged that included expressed reasons for satisfaction/lack of satisfaction and learning success/lack of success, that included Modality Preference; Schedule Choice/Flexibility; Quality of Instruction; Student Count; and Course Length. Data in the form of one table provides the reader with a sample of the comments received.

The same five patterns that emerged for faculty's perspective of student satisfaction and performance/learning also emerged for faculty satisfaction and performance. A key example of a response fitting these patterns is, "Some of the complacency with Hyflex I think is their classes, because the professors have to do the same amount of work for an on-ground course and an online course and they have to do both. So, I do think it's the student numbers have been higher, and they were coming in and doing that lecture and doing online, and the pay was higher, I don't think the complacency probably would have been as much as it was, just the perfect storm probably." Table 39 lists more examples.

Table 39

Interview Responses: Faculty/staff members were asked how they thought the flexibility or inflexibility of how students were able to attend their courses impacted faculty/staff performance/success or satisfaction.

<p>Faculty/Staff Responses Fitting the Pattern</p> <p>“Reasons for Faculty/Staff Success/Satisfaction or Lack of Success/Satisfaction – Modality Preference; Schedule Choice/Flexibility; Quality of Instruction; Student Count; and Course Length”</p>
<p>“There are two parts to this, and you can use both parts if you want. The first part of it is me as somebody who is doing the scheduling and having to do contracts and make sure the classes are covered and all that kind of thing, that side of it is beautiful for anybody, because with Hyflex I don't have to cancel a class. I can keep the contract and that costs less for the institution. Like all of those things made it really good for me as the leader. As far as leading the faculty, there was a lot of complacency that would happen. You know, “Well I went to class and there was enough students you know, or they come out to the campus and there's nobody and so now they have to grade online and then they have to... so it is like they are doing, like they were doing double work. On the administrative side, it's wonderful from a liaison or as the leader of the people doing it. It is harder only because of some of the complacency that came from it.”</p> <p>“Some of the complacency with Hyflex I think it's their classes because the professors have to do the same amount of work for one sitting on ground as many as 20 minutes on ground right, at the same amount of work. So, I do think it's the numbers have been higher, you know, they were coming in and doing that lecture and the pay was higher, I don't think the complacency probably would have been as much as it was, just the perfect storm probably.”</p> <p>“I think they're definitely is an administrative role involved in that where someone with subject matter expertise in a Hyflex environment can really help coach both the Faculty members as well as the students in transitioning to that Hyflex model and I think it does take resiliency on the part of both to say, you know what this is something new but as long as I know what's the benefits are and that there will be a little bit of transition involved in it. I think you'll see professors and students adapt quite well to it, especially with just where we're at culturally today.”</p>

Summary

This study, through a mixed method causal comparative phenomenological design, sought to discover and examine the impact, if any, of 16-week traditional and five-week Hyflex delivery modalities on student learning and satisfaction within undergraduate courses. Quantitative survey data was collected through Likert questions and analyzed using independent *t*-tests. Quantitative final grade average data was extracted from the institution's student information system and analyzed using independent samples *t*-tests and ANCOVAs, covarying out the effect of age, ethnicity, and gender. For each of the two hypotheses, statistical analysis is presented through descriptive statistics as well as through comparative analysis. Qualitative data was collected from students through open ended survey questions as well as from select faculty through interviews. Axial coding was used to organize the data into themes and data was then presented in tables according to those themes. All quantitative and qualitative results were triangulated to assure the validity of the research.

CHAPTER 5: DISCUSSION

Introduction

Individual colleges and universities consistently struggle to increase degree options, and therefore enrollment, while dealing with the issue of limited classroom space on their campuses. Administration's usual solutions to this dilemma generally focus on extending the school day, either through the addition of earlier courses, later courses, or both. These options are not always possible for schools or best for student learning or satisfaction, so what are the institutional solutions that will allow maximum enrollment while at the same time promoting excellent educational options that provide students with flexible and affordable options? Accelerated online and hybrid courses and programs must be looked at as viable options to achieve both student and institutional goals.

Before schools decide to pursue hybrid and online options to help them achieve their enrollment goals, research into how this would impact student learning success and overall satisfaction need to be examined. The purpose of this mixed method causal comparative phenomenological study is to discover and examine the impact of two different course delivery modalities on student learning/performance and satisfaction. The two course delivery modalities being examined are the 16-week traditional and five-week Hyflex course and program options. Participants of this study included undergraduate students in a small liberal arts college in Southern California. Both quantitative and qualitative research approaches were used to analyze the collected data and triangulation of both types of data was to enhance validity and reliability. The research study took place over the course of one academic year.

Summary of the Study

Research Question One

The first hypothesis stated that delivery modality would have no impact on student learning/performance. At the end of the causal comparative study, the null hypothesis was accepted. Delivery modality, did not impact student learning/performance, measured through student final grade average, in a statistically significant way (See Table 7). This statistical analysis was done through independent samples *t*-test. Additionally, three one way, between subjects ANCOVAs were also calculated to examine the impact of delivery modality on grade average, covarying out the effect of age, gender and ethnicity and the main impact for delivery modality/program on student learning/performance, measured through student final grade, was not found to be significant. (See Tables 8,9,10)

Even though the causal comparative study found that delivery modality has no statistically significant impact on student learning/performance, non-statistical phenomenological data shows that the phenomenon of different delivery modalities can impact student's perceptions of their learning experience. Students in the traditional program revealed how delivery modality impacted or did not impact their perception of learning, "Overall not having the ability to choose how to attend a course didn't affect my perception of learning. The only thing that affected my perception of learning was not being able to pick the time." and "In all of my classes attendance was mandatory. This had a positive effect on my perception of learning because I felt like I needed to be there, otherwise I would not succeed in the course."

Students in the Hyflex program revealed how the ability/inability to choose how to attend a course from session to session impacted their perception of learning:

The ability to choose how to attend a course from class meeting to class meeting had a positive effect on my learning. In today's busy world online accessibility allows for individuals to pursue a degree yet stay mobile enough to interact with the everchanging world.

“I liked the flexibility based on the inconsistency that my work schedule provided. It allowed me not to attend a scheduled class if my schedule didn't permit it. It kept the stress level down.”

Research Question Two: How do the different delivery modalities of Hyflex courses and Traditional courses impact student satisfaction toward content and delivery?

The second hypothesis stated that delivery modality would have no impact on student satisfaction. At the end of the study, the null hypothesis was accepted in five of seven measures of student satisfaction: Likert Satisfaction Question 6: Overall, my instructors sufficiently challenged us with assignments; Likert Satisfaction Question 7: Overall, my instructors demonstrated expertise for the subject and content; Likert Satisfaction Question 8: Overall, my instructors provided meaningful learning activities; Likert Satisfaction Question 9: Overall, my instructors organized the course to maximize learning; and Likert Satisfaction Question 10: Overall, my instructors used an assortment of ways to share course content. (Tables 12, 13, 14, 15, 16)

The null hypothesis was rejected in two of seven measures of student satisfaction: Likert Satisfaction Question 5: Overall, my instructors provided clear course requirements and expectations; and Likert Satisfaction Question 11: Overall, my instructors provided an organized learning environment. (Tables 11, 17)

Non statistical phenomenological data supports those quantitative findings, where the null hypothesis was rejected and supplement those that were accepted, in that it reveals the phenomenon of different delivery modalities can impact student satisfaction. Students in the traditional program revealed:

It has been really nice to have a few class periods that are just set aside for studying, because this has given me the opportunity to spend more time with my family and study at a separate time on occasion. This family time or rest time and flexibility with study/learning time has led to an overall improved mental health level and has reduced my anxiety to almost an unnoticeable level... huge blessing and praise! And I do think that having the bit of stretch in my schedule has helped with that!

“While there were moments that I wished to do an online version of some classes, I was generally satisfied with my on-ground courses.”

Students in the Hyflex program revealed, “Very satisfied with the ability to have classes that work around my work schedule and to complete my coursework at my own pace.” and “I think that I was very satisfied with the educational experience because I was able to manage my time in order to have a work, life and school balance.”

Research Question Three: How does the ability to choose how to attend a course from session to session impact a student’s perception of their learning in that course?

Non-statistical phenomenological data supplements the quantitative findings about student learning, in that the ability/inability to choose how to attend a course from session to session can impact student’s perception of their learning. Students in the traditional program revealed how the ability/inability to choose how to attend a course from session to session impacted their perception of their learning in the area of Modality Preference:

I believe all courses were meant to be attended traditionally unless a course was not offered at the time then they would offer online classes as a last resort. I personally like attending classes as I learn more that way.

“When the course was an in-class course it made the material to be learned more important than the online option.”

Students in the Hyflex program revealed how the ability/inability to choose how to attend a course from session to session impacted their perception of their learning in the area of Modality Preference:

The ability to choose how to attend a course from class meeting to class meeting had a positive effect on my learning. In today's busy world online accessibility allows for individuals to pursue a degree yet stay mobile enough to interact with the everchanging world.

“I liked the relief of overburdened work from multiple courses, and the one on one time the instructors put into each student's time.”

Students in the traditional program revealed how the ability/inability to choose how to attend a course from session to session impacted their perception of their learning in the area of Schedule Choice/Flexibility:

The biggest issue I had was that I was not presented the opportunity to create my own schedule. It conflicted with basketball practices. This school has to be one of the only schools in the country that creates the schedule for their students as if they were still in high school.

I don't know that the attendance rules were expressed very much, but some classes require attendance 3 times a week and others allow for the second or third class to be a

work time. This flexibility has been very nice and has given me the ability to stay on top of the workload and absorb the info for longer.

Students in the Hyflex program revealed how the ability/inability to choose how to attend a course from session to session impacted their perception of their learning in the area of Schedule Choice/Flexibility, “I live an hour away from the campus. The weekly night class session helped clarify the online content. The flexibility aided greatly in being able to complete the courses on pace.” and “I liked the flexibility based on the inconsistency that my work schedule provided. It allowed me not to attend a scheduled class if my schedule didn't permit it. It kept the stress level down.”

Students in the Traditional program revealed how the ability/inability to choose how to attend a course from session to session impacted their perception of their learning in the area of Quality of Instruction, “Having a set understanding that I would physically come to class, set an expectation that I would be better able to get hands on and more personalized instruction.” and “The classes did make me think more about things that I would have never thought of if I did not take those classes.”

Students in the Hyflex program revealed how the ability/inability to choose how to attend a course from session to session impacted their perception of their learning in the area of Quality of Instruction, “I am an online student, so I did not have to attend class which I liked. However, the school did incorporate virtual conferences which made a huge difference in helping students to communicate with the professor,” and

I do not like the mandated class discussion once per class. The link is difficult to understand. Clear instructions were not given on the fact this was happening nor on how to join, when, or that it was to replace the normal discussion post for the week.

Research Question Four: How does the ability to choose how to attend a course from session to session impact a student's overall satisfaction with that course?

Non-statistical phenomenological data supplements the quantitative findings in that the ability/inability to choose how to attend a course from session to session can impact student's satisfaction. Students in the Traditional program revealed how the ability/inability to choose how to attend a course from session to session impacted their overall satisfaction in the area of Modality Preference:

When I signed up to go to college, I specifically chose not to go to an online school.

However, in almost every class, there was some aspect of online learning this made these classes and subject matter unappealing to me.

As well as "This does not affect much to me as I was a fulltime student and my availability was very open"

Students in the Hyflex program revealed how the ability/inability to choose how to attend a course from session to session impacted their overall satisfaction in the area of Modality Preference, "The ability to choose provided deep satisfaction. I can attend a quality institute of higher learning from anywhere around the world." and "I was extremely satisfied when I could choose to attend in person. Whenever this was not an option, my level of satisfaction decreased."

Students in the traditional program revealed how the ability/inability to choose how to attend a course from session to session impacted their overall satisfaction in the area of Schedule Choice/Flexibility:

It has been really nice to have a few class periods that are just set aside for studying, because this has given me the opportunity to spend more time with my family and study at a separate time on occasion. This family time or rest time and flexibility with

study/learning time has led to an overall improved mental health level and has reduced my anxiety to almost an unnoticeable level... huge blessing and praise! And I do think that having the bit of stretch in my schedule has helped with that!

“Again, the inability to choose how to attend a course did not affect my overall satisfaction, it was mostly the time that affected the satisfaction.”

Students in the Hyflex program revealed how the ability/inability to choose how to attend a course from session to session impacted their overall satisfaction in the area of Choice/Flexibility, “Very satisfied with the ability to have classes that work around my work schedule and to complete my coursework at my own pace.” and “I had higher satisfaction taking the Hyflex class after being there in person AND online.”

Students in the traditional program revealed how the ability/inability to choose how to attend a course from session to session impacted their overall satisfaction in the area of Quality of Instruction, “Some courses were just sitting and listening to lectures and regurgitating information when necessary.” and “I always walked away from the course feeling as if I didn't learn very much and didn't get a comprehensive overview of the subject.”

Students in the Hyflex program revealed how the ability/inability to choose how to attend a course from session to session impacted their overall satisfaction in the area of Quality of Instruction:

I enjoyed it very much. Everyone learns differently. I can learn without being in a classroom setting. Professors were very helpful and willing to talk or discuss assignments by email, mostly any time I needed it. They were very responsive and even understood the online environment and its pitfalls. I liked getting, I think, the "real" opinions from classmates. I didn't feel pressured to pretend.

“I am satisfied with my courses. Some were definitely questionable.”

Faculty/Staff

Faculty/staff who taught in both traditional and Hyflex programs revealed how they perceived the ability/inability for a student to choose how to attend a course from session to session impacted their perception of learning and overall satisfaction in the area of Modality Preference:

I actually had 20 total students in my traditional class each week and offered them an attendance choice as a pilot. I had about eight of those students online and the athletes loved it because they had that option. They wanted to be in class, but they couldn't be in class though.

I think it did affect both in the sense that if a traditional student sense that they had a part to play in the decision about how they were learning. They were much more engaged in the process. And with the traditional model, there really wasn't that flexibility, I could tell that in general as students might be a little bit less engaged in the learning process and enjoying it.

Faculty/staff who taught in both traditional and Hyflex programs revealed how they perceived the ability/inability for a student to choose how to attend a course from session to session impacted their overall satisfaction in the area of Schedule Choice/Flexibility:

In the professor's perspective, to automatically have the students to be able to go online when they're going to be absent is wonderful. I mean I do that anyways in my classes whether it is Hyflex or not. I think building that in no matter what, not matter if the class is called hyflex, is really powerful. Because athletes are gone. Music majors are gone you know? So having the ability to automatically do something online. I think it's powerful.

Yeah, I think in today's culture with the students, what they were experiencing is a confinement where, when they were told that they had to be in class at certain time and had to be in every class and there were issues, they weren't there, the Hyflex students appreciated having flexibility with their attendance based upon choices they made in life or requirements they had outside of the classroom.

Faculty/staff who taught in both traditional and Hyflex programs revealed how they perceived the ability/inability for a student to choose how to attend a course from session to session impacted their overall satisfaction in the area of Quality of Instruction,

I think for the most part I answered but I think the bottom line is that Hyflex works when there's a big enough group of people. It doesn't work when it's small numbers because especially on ground, not having that learning experience like that they would enjoy you know.

I think that is on a course by course basis, it all depends on the flexibility of the professor in a sense because at least for my experience, the traditional professors wanted to spend most of their time lecturing in a classroom setting. It created an environment where if the students knew that there were other options, other than that traditional setting, it did create a perception on the part of the students that they just they would rather have the flexibility if possible and sometimes that's because of the lack of engagement on the part of the professor.”

Faculty/staff who taught in both traditional and Hyflex programs revealed how they perceived the ability/inability for a student to choose how to attend a course from session to session impacted their overall satisfaction in the area of Student Count:

I think those that came on ground or the Hyflex program were frustrated. I think the ones that chose online each week, we're happy, does that make sense? Because the ones that showed up, and then there's only one or two people in the class, were frustrated. I think that it's a number thing more than anything.

Yeah, because our numbers were not super big on ground in the students that we're going to come every week. They were not going to do the option of hyflex. They just wanted to come do an on-ground class. They were coming to class with just one or two students and that was frustrating for them.

Faculty/staff who taught in both traditional and Hyflex programs revealed how they perceived the Hyflex delivery modality that e ability/inability for a student to choose how to attend a course from session to session impacted their overall satisfaction in the area of Course Length, "From my experience, I also think Hyflex works best in an eight-week or five-week model rather than 16-week model."

I mean honestly that was very good for the traditional students. I mean the students loved it because like I said a lot of them are athletes and so it only being eight weeks, there were people they liked it. It was only eight weeks because then they didn't have to be there as long and because it was you know, it was the Hyflex model, it just was very flexible for them period. I mean, you know, I could tell that a lot of people appreciated taking a class that way in that particular instance.

Faculty/Staff

Faculty/staff were asked how the flexibility of how students were able to attend their courses impacted faculty/staff performance or satisfaction. Faculty/staff revealed,

There are two parts to this, and you can use both parts if you want. The first part of it is me as somebody who is doing the scheduling and having to do contracts and make sure the classes are covered and all that kind of thing, that side of it is beautiful for anybody, because with Hyflex I don't have to cancel a class. I can keep the contract and that costs less for the institution. Like all of those things made it really good for me as the leader.

As far as leading the faculty, there was a lot of complacency that would happen. You know, well I went to class and there was enough students you know, or they come out to the campus and there's nobody and so now they have to grade online and then they have to... so it is like they are doing, like they were doing double work. On the administrative side, it's wonderful from a liaison or as the leader of the people doing it. It is harder only because of some of the complacency that came from it.

Some of the complacency with Hyflex I think it's their classes because the professors have to do the same amount of work for one sitting on ground as many as 20 minutes on ground right, at the same amount of work. So, I do think it's the numbers have been higher, you know, they were coming in and doing that lecture and the pay was higher, I don't think the complacency probably would have been as much as it was, just the perfect storm probably.

Implications for Practice

Results from causal comparative analysis revealed the need for clear directions, and expectations along with an organized learning environment, and pointed to the Hyflex modality as stronger in these areas than the traditional modality. These strengths may come from the fact that online or hybrid courses with less face to face contact with students need to be more explicit in their written directions and expectations within the learning management system. It is

recommended that traditionally delivered courses be built and organized like those within the Hyflex delivery modality, so directions and expectations are clear even if the student cannot make it to the physical classroom.

Results from phenomenological analysis revealed that students perceive that they learn better and are more satisfied when they are given choices for their schedule and course type rather than being assigned to courses without options or input. It was also revealed that many students prefer the traditional classroom, but schedule conflicts prohibit many of these students from attending according to their preference. It is recommended that traditionally delivered courses be built and organized in the Hyflex delivery modality format so students could attend according to their preference as much as possible, but also be given the flexibility to attend online when necessary. Data analysis also revealed that students struggle with keeping up with accelerated, five-week Hyflex or online courses when they also enrolled in a program that has primarily 1-week courses. It is recommended that traditional student enrollment in five-week Hyflex courses be minimized when they are also enrolled in mostly 16-week traditional courses. If the entire traditional program could transition over to shorter five or eight-week Hyflex courses, it could then be recommended for these traditional students because of its increased flexibility and decrease course enrollment overlap.

Results from phenomenological analysis of, “How did Hyflex courses impact faculty/staff performance or satisfaction?” revealed that faculty need to be properly trained in the administration of these courses, as well as paid fairly to compensate for the extra work of moderating two modalities within one course. It is recommended that an online faculty support course be built and required of all Hyflex faculty. It is also recommended that faculty be paid at a higher rate than stand-alone traditional or online courses, in relation to the increased workload

required of teaching Hyflex courses. These measures would certainly lead to higher satisfaction among Hyflex faculty.

Limitations

The first limitation involved sampling. The study used a purposive sample of those students who, were attending a particular institution, were enrolled in particular courses, were part of two particular programs, and were attending those courses within a particular time period. Survey response rate and completion with informed consent also limited those who participated in the study and established an overall smaller sample size in each group that was studied. The second limitation involved instructional constraints. The study compared matching courses from two different programs that had the same learning outcomes, but the way content was taught, and the way learning outcomes were assessed, were done differently according to program, professor, and course discipline.

The third limitation involved programmatic constraints. The study compared courses that were not only delivered in different modalities, as was the focus of the study in the areas of student learning/performance and satisfaction, but the courses were also offered in different lengths. Traditional courses were 16 weeks in length while Hyflex courses were 5 weeks in length. Students also, as required by each program, took a different number of courses at a time. Traditional students took four to five courses at a time while Hyflex students took one to two courses at a time to be considered full-time.

The fourth limitation involved the limited sample size of the faculty interviewees. Only two faculty/staff members were chosen to be studied due to study time constraints. The two faculty/staff members interviewed were chosen because of their unique position of being professors and support staff within both programs.

Delimitations

Delimitations for this study include the objectives, research questions, variables, and theoretical framework that have been adopted. The researcher chose this area of study because of their interest in how traditional versus non-traditional course delivery modalities impacted student learning/performance and satisfaction.

Recommendations for Future Research

The first recommendation for future research would be increasing the sample size by including more schools/students. While finding other schools and programs that are using the Hyflex model will be challenging, the increased sample size of future studies will increase both the reliability and validity of these studies. It is recommended that research also be done to test the impact that different courses with identical curricular content and structure (Hyflex and traditional), but that are delivered via different modalities, have on success and satisfaction. Courses that were compared within this study had the same learning objectives, but curriculum and structure were different. It is recommended that research also be done on the impact that different length courses, delivered via different modalities, have on success and satisfaction. Courses compared (Hyflex and traditional) in this study were different lengths and those lengths could have an impact on student learning/performance and satisfaction separate and apart from delivery modality. It is also recommended that research be done on the learning/performance and satisfaction of students only taking one or two courses at a time in the accelerated Hyflex model, versus four or five courses at a time in the longer traditional model. Traditional students within this study took four to five courses at a time while Hyflex students took one or two courses at a time, which could have an impact on student learning/performance separate and apart from delivery modality.

Conclusion

This mixed method causal comparative phenomenological study, sought to discover and examine the impact, if any, of 16-week traditional and five-week Hyflex delivery modalities on student learning and satisfaction within undergraduate courses. Research question one asked, “How do the different delivery modalities of Hyflex courses and Traditional courses impact student learning?” The first hypothesis stated that delivery modality would have no impact on student learning/performance. At the end of the causal comparative study, the null hypothesis was accepted. Phenomenological data shows that phenomenon of delivery modality can impact student’s perceptions of their learning.

Research question two asked, “How do the different delivery modalities of Hyflex courses and Traditional courses impact student satisfaction toward content and delivery” The second hypothesis stated that delivery modality would have no impact on student satisfaction. At the end of the study, the null hypothesis was accepted in five of seven measures of student satisfaction and rejected in two of seven measures that include the areas of “course requirements and expectations,” and “organized learning environment” Phenomenological data showed that delivery modality can impact student satisfaction.

Research question three asked, “How does the ability to choose how to attend a course from session to session impact a student’s perception of their learning in that course?”

Phenomenological data showed that delivery modality can impact student’s perception of their learning. Research question four asked, “How does the ability to choose how to attend a course from session to session impact a student’s overall satisfaction with that course?”

Phenomenological data showed that delivery modality can impact student satisfaction.

Phenomenological data from interviewed faculty/staff also showed that delivery modality can impact faculty performance and satisfaction.

Based on the results of the study, the researcher believes that because similar results are achieved in the areas of learning and satisfaction in both traditional and Hyflex courses, that institutions should explore the shorter Hyflex courses as options for future program offerings. These offerings could potentially save the institution money through the reduction of overhead costs, maximize campus capacity by the reduction of classroom demand, and help students achieve their educational goals at a faster rate than traditional programs, through the shorter course lengths. The researcher is interested in personally exploring each of areas of potential future research mentioned, to help his own institution as well as others, to maximize enrollment while offering academically excellent programs in ways that today's students need.

The researcher has been working in higher education for over 10 years at the time of this writing, and before that attended various versions of accelerated and online programs. Because of this experience as a non-traditional student, the researcher is personally devoted to the work of finding better ways for students to achieve their educational goals affordably, and in a way that best fits their busy schedules. Hyflex programs seem to offer students the most flexibility while still honoring their desire to be in the classroom if at all possible. More research in this area will not only add to the limited research already present in the literature on the Hyflex approach, but it will also help institutions discover if this delivery modality truly provides what is best for students in the areas of academic excellence, student performance, student satisfaction, and affordability.

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APPENDIX

APPENDIX A: SURVEY QUESTIONS

Informed Consent

TRADITIONAL, ONLINE, OR BOTH? A COMPARATIVE STUDY OF STUDENT LEARNING AND SATISFACTION BETWEEN TRADITIONAL AND HYFLEX DELIVERY MODALITIES

The study in which you are being asked to participate is designed to investigate the impact of course delivery type and course attendance flexibility on course satisfaction and student learning. This study is being conducted by David Dewain Rhoads under the supervision of Dr. Belinda Karge, Professor of Doctoral Programs in the School of Education at Concordia University Irvine. This study has been approved by the Institutional Review Board, Concordia University Irvine, in Irvine, CA.

****To protect the integrity of the study, please disregard this request for participation if you are not 18 years of age or older. Thank you for interest!**

PURPOSE:

The purpose of this mixed method phenomenological study is to discover and examine relationships, if any, in student learning and satisfaction between traditional 16 week face to face undergraduate courses and five week Hyflex undergraduate courses (courses where you can choose to attend class online or in person from class session to class session).

DESCRIPTION:

Data for this study will be collected through this survey, and through the collection of final grade data from the courses being examined within the study.

PARTICIPATION:

Participation in this study is voluntary and refusal to participate will involve no penalty or loss of benefits to which the subject is otherwise entitled, and the subject may discontinue participation at any time without penalty or loss of benefits, to which the subject is otherwise entitled. Those who choose to participate will indicate their willingness to participate through the completion and submission of the associated survey. Those who choose to participate in this study will be entered in a random drawing for one student to receive a \$100 Amazon gift card.

CONFIDENTIALITY:

The data collected from the survey and course final grades will be kept confidential with only the researcher knowing what particular data is attached to which particular student. Once data

is collected and analyzed, deidentified results will be published in the researcher's dissertation. The confidentiality of records identifying individual students/subjects will be maintained stored in a password protected computer until the end of this study, at which time these collected records will be destroyed/deleted.

DURATION:

The maximum duration of the subjects' participation in the study will be from January 15, 2020 and April 15, 2020.

RISKS:

There are no foreseeable risks in participating in this study, beyond the potential emotional risk of identifiable data being released. Please contact your counseling center if you are in need of any emotional support due to study participation.

BENEFITS:

Benefits expected from the research are minimal but could be realized through the administrative use of the findings to improve student's overall educational experience.

VIDEO/AUDIO/PHOTOGRAPH:

N/A

CONTACT/RESULTS:

For questions regarding data collection methods or goals of the overall study, please feel free to contact me at david.rhoads@eagles.cui.edu or my university supervisor at Concordia University Irvine, Dr. Belinda Karge, at belinda.karge@cui.edu . After the study has been completed and disseminated for publishing, results can be reviewed via the Concordia University Irvine Digital Repository at <https://www.cui.edu/library/index/id /24734>

Please click 'OK' then 'Next' to begin the survey.

Student Survey

Demographic Information

Please answer the following questions about yourself.

1. Please enter your name and email address below.

Name

Email Address

2. What is your age?

☐

Under 18

☐

18-24

☐

25-34

☐

35-44

☐

45-54

☐

55-64

☐

65+

3. Which race/ethnicity best describes you? (Please choose only one.)

- ☐ American Indian or Alaskan Native
- ☐ Asian / Pacific Islander
- ☐ Black or African American
- ☐ Hispanic
- ☐ White / Caucasian
- ☐ Multiple ethnicity / Other (please specify)

4. What is your gender?

- ☐ Female
- ☐ Male

Student Survey

Content and Delivery Questions

5. Overall, my instructors provided clear course requirements and expectations.

- | | |
|---|--|
| <input type="radio"/> Very Successful | <input type="radio"/> Somewhat Successful |
| <input type="radio"/> Successful | <input type="radio"/> Unsuccessful |
| <input type="radio"/> Moderately Successful | <input type="radio"/> Not Applicable, does not relate to the course, or you do not have an opinion |

6. Overall, my instructors sufficiently challenged us with assignments.

- | | |
|---|--|
| <input type="radio"/> Very Successful | <input type="radio"/> Somewhat Successful |
| <input type="radio"/> Successful | <input type="radio"/> Unsuccessful |
| <input type="radio"/> Moderately Successful | <input type="radio"/> Not Applicable, does not relate to the course, or you do not have an opinion |

7. Overall, my instructors demonstrated expertise for the subject and content.

- | | |
|---------------------------------------|-----------------------|
| <input type="radio"/> Very Successful | Moderately Successful |
| <input type="radio"/> Successful | |



Somewhat Successful



Unsuccessful



Not Applicable, does not
relate to the course, or you
do not have an opinion

8. Overall, my instructors provided meaningful learning activities.



Very Successful



Somewhat Successful



Successful



Unsuccessful



Moderately Successful



Not Applicable, does not relate to the course, or you do not have an opinion

9. Overall, my instructors organized the course to maximize learning.



Very Successful



Somewhat Successful



Successful



Unsuccessful



Moderately Successful



Not Applicable, does not relate to the course, or you do not have an opinion

10. Overall, my instructors used an assortment of ways to share course content.



Very Successful



Somewhat Successful



Successful



Unsuccessful



Moderately Successful



Not Applicable, does not relate to the course, or you do not have an opinion

11. Overall, my instructors provided an organized learning environment .



Very Successful



Somewhat Successful



Successful



Unsuccessful



Moderately Successful



Not Applicable, does not relate to the course, or you do not have an opinion

Student Survey

Attendance Flexibility Questions

12. How did the ability/inability to choose how to attend a course from class meeting to class meeting affect your perception of your learning in these courses? Explain

13. How did the ability/inability to choose how to attend a course from class meeting to class meeting affect your overall satisfaction with that course? Explain

Student Survey

Overall Comments

14. Any other comments about your experience with these courses you would like to share?

APPENDIX B: NIH CERTIFICATE



Completion Date 12-Dec-2019

Expiration Date 11-Dec-2022

Record ID 34516996

This is to certify that:

David Rhoads

Has completed the following CITI Program course:

Social & Behavioral Research - Basic/Refresher (Curriculum Group)**Social & Behavioral Research**

(Course Learner Group)

1 - Basic Course

(Stage)

Under requirements set by:

Concordia University IrvineVerify at www.citiprogram.org/verify/?w00155d39-d59a-4714-a0ad-4ead5e51d7a5-34516996