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Pepperdine University
Graduate School of Education and Psychology

SENSE OF BELONGING IN CYBERSPACE: EXAMINING THE IMPACT OF HYBRID
COURSES ON STUDENT PERSISTENCE

A dissertation submitted in partial satisfaction
of the requirements for the degree of
Doctor of Education in Learning Technologies

by

Ronald J. Costello

May, 2015

Paul Sparks, PhD – Dissertation Chairperson

This dissertation, written by

Ronald J. Costello

under the guidance of a Faculty Committee and approved by its members, has been submitted to and accepted by the Graduate Faculty in partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

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DEDICATION

To my partner, who talked me off the ledge when I needed it, who encouraged me through the adversity that comes with earning a doctoral degree, and was with me every step of the way throughout this long journey. This work is dedicated to my wife, Nora, and our children Iris and Vincent.

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VITA

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ABSTRACT

The following is a quantitative study of the effects of hybrid course offerings on student sense of belonging and satisfaction at a commuter campus. The study employed the following independent variables: gender, age, race, class standing, GPA (which was self-reported), marital status, number of children, employment status, number of hours worked per week, number of hybrid courses taken, and 2 dependent variables (sense of belonging and satisfaction). The study found no significant difference in sense of belonging and satisfaction among students in either the hybrid or face-to-face modalities. Other findings found that students with children exhibited a negative relationship between number of children and perceived faculty support/comfort as well as a negative relationship was between number of children and perceived classroom comfort in both hybrid and face-to-face modalities. This study also includes recommendations for additional studies to explore possible interventions to increase students sense of belonging and satisfaction.

Chapter 1: Study Introduction

Background

Two issues commonly on the minds of administrators in higher education are issues surrounding student persistence and online course offerings. While on the surface these appear to be separate issues, there may be a relationship between the two. Whether or not the online learning environment at a college or university impacts the campus culture as far as overall student satisfaction and a student's sense of belonging at a post-secondary institution is a worthy issue to consider. Tinto (1987) asserted that college campuses represent a transition between a sense of belonging in old communities and new, and how well students make that transition profoundly impacts their decision to persist in college. Well designed online learning environments represent a new kind of community where students are interacting in ways not seen in the traditional lecture-based college classroom (Palloff & Pratt, 2002). It therefore becomes a natural line of inquiry to determine if the building of online communities within online or partially online courses offered at a traditional college campus can impact a student's sense of belonging to the overall college community. If so, these types of modalities could potentially influence student persistence.

Undergraduate institutions are facing numerous challenges with regard to retention, and few issues have commanded more attention from administrators (Barefoot, 2004). Naturally then, the concept of student persistence becomes worthy of study. It is important to distinguish between the terms persistence and retention as the two are often conflated. Persistence refers to student attitudes and behavior, and whether or not they continue their academic career, while retention is an institutional term to measure the number of students who remain at the institution

until they graduate (Wyrick, 2014). The distinction between the two terms is important to note as this study will focus on student attitudes and behavior (persistence).

Although enrollments in post-secondary education continue to be on the rise, retention and graduation rates remain relatively low (Morrow & Ackermann, 2012). For this reason, issues of retention and degree completion are a serious matter facing all post-secondary institutions but particularly public colleges and universities where the graduation rate is significantly worse than at their privately funded counterparts (Barefoot, 2004). Low retention and graduation rates put increasing pressure on public institutions since some state legislators have proposed tying institutional funding to graduation rates (Barefoot, 2004). Proposals like these are a natural outcome of a prediction Harold Hovey (1999) made over a decade ago as part of a report published by the National Center for Public Policy and Higher Education. The report predicted that states would be facing increasingly smaller budgets to fund state affiliated institutions (Hovey, 1999). Because of the serious competition among colleges and universities, attracting and retaining students has become a natural focus for higher education administrators. This leads to two fundamental questions: What impacts a student's decision to persist, and what can be done to improve the chances of retaining them (Morrow & Ackermann, 2012).

Researchers have developed various models to determine why students may decide not to persist at an institution (Astin, 1984; Tinto, 1987). They may leave for academic or social reasons, poor fit of the institution to their needs, levels of support, lack of clear academic goals, and financial reasons (Tinto, 1987). However, several studies have concluded that connectedness and a student's sense of belonging are strongly related to retention (Morrow & Ackermann, 2012). Therefore, it becomes important to determine what might influence a student's sense of belonging to the institution. Very little research has been conducted to determine if course

modality, and the related academic experience associated with course modality, can be a significant influence on a student's sense of belonging. If a course is highly interactive, builds a strong sense of community, and is sensitive to the student's needs in terms of flexibility, could that type of course have a significant impact on a student's sense of belonging and satisfaction?

When one examines the type of academic experience that would provide a student with a sense of flexibility to their needs as well as a highly interactive experience based on a sense of community, the hybrid or blended course provides such an option. While many undergraduate students are enrolled in large lecture-based courses, where there is little to no interaction among peers or with the instructor, well-designed blended courses that take place both in the classroom and in the online learning environment offer an attractive alternative (Moskal, Dziuban, & Hartman, 2013). Unlike online courses, hybrid courses utilize both the traditional classroom environment and the online learning environment to provide students with the strengths of each modality. Many of these types of courses utilize technology to foster valuable interaction among peers and can lay the groundwork for productive social knowledge construction and a rich web of ideas (Bruckman, 2006). By their nature, hybrid courses set up a constant virtual space for class interaction that can establish a lifeline for the student as it is available 24/7 for interaction, collaboration, community, and support (Palloff & Pratt, 2002). Perhaps one of the greatest benefits of the hybrid course format is that it allows an institution to tailor these types of offerings to the campus culture for maximum benefit to the student population (Howell, 2011).

As the proliferation of these types of course offerings continue to rise, it would be of great benefit to institutions offering them to determine what effect, if any, these types of offerings contribute to student's sense of connectedness to the college community and satisfaction with the institution. If due to their flexible and highly interactive nature, these types

of course offerings could increase a student's sense of belonging to the college community and satisfaction with the institution, they would have a positive effect on two major factors significantly affecting student persistence.

Statement of Problem

The issue of retention, particularly among first and second year students is a significant problem nationally and an issue foremost in the minds of university administrators (Barefoot, 2004). Additionally, attrition rates are felt at an even greater level in public colleges and universities, where the rates are higher than at private institutions and where some state legislatures are discussing the notion of tying institutional funding to graduation rates (Barefoot, 2004). For these reasons, higher education institutions are looking for specific interventions and strategies to boost student persistence. Numerous studies have established that improving a student's connectedness and sense of belonging to the institution is one such intervention (Morrow & Ackermann, 2012). While common strategies and avenues of intervention have included changes to academic advising, first-year seminars, and traditional learning communities, the researcher found no existing research on course modality as a potential influence on a student's sense of belonging. Over the past two decades, there has been a proliferation of online and hybrid course offerings in large part because of the overwhelming demand from students (Allen & Seaman, 2010). Thus, higher educational institutions are faced with two problems, increasing the amount of online and partially online course offerings, and increasing factors that contribute to student persistence. Determining if there is a positive relationship between these kinds of course offerings and a sense of belonging (a primary factor in student persistence) becomes an extremely important study. Can a traditional campus improve its community and its

students' sense of belonging by extending that community into the virtual world by way of online learning environments?

Purpose & Importance of the Study

The Abington College of the Pennsylvania State University, a nonresidential campus, is no exception to feeling the need to improve student persistence. In a memorandum sent by then Penn State President Rodney Erickson to the campus chancellor, the Abington College was charged with both increasing its retention rates as well as increasing its number of hybrid (partially online) course offerings (R. Erickson, personal communication, October 13, 2011). A natural inquiry to come from this charge is to determine if there is a relationship between the two variables. Specifically, can hybrid course offerings contribute to an overall increase in student persistence? More directly, since the hybrid course offerings at the Abington College are all predicated on building virtual communities when students are not in the classroom, can these hybrid courses contribute to a student's sense of belonging on the campus? The following study will explore this issue by attempting to answer the following research question: Do hybrid course offerings at a nonresidential campus increase the sense of belonging and satisfaction?

As previously stated, hybrid courses offer a great deal of flexibility for the students who enroll in them. Web-based courses by their nature are more attractive to busy students than traditional courses (Doherty, 2006). A course that takes place partially online requires less time on campus, which could be particularly appealing on a nonresidential campus. In a campus culture where students juggle work, family, and coursework, having the flexibility to come to campus less often while completing their studies could be of great benefit for the students and the institution. In particular if the flexible and communal nature of these offerings improve student satisfaction and sense of belonging, the benefit would contribute to a solution to one of

the greatest challenges facing the institution. Understanding student attitudes and behaviors with the online learning environment also offers the additional benefit of informing course design practices and faculty development (Ralston-Berg & Nath, 2011). The nature of this data could not only benefit the current practices of instructional design and faculty development at the Abington College, but also the greater academic community.

One of the most commonly referred to student persistence models was developed by Vincent Tinto (1987), which is predicated on academic and social integration into the university community. According to Tinto, integrating into both the academic and social system of a college or university is based on a student's sense of fit in this new setting. The perception of integration into the institution represents a sense of affiliation and identification within the campus community, known as a *sense of belonging* (Hoffman, Richmond, Morrow, & Salomone, 2002). This study will examine a student's sense of belonging and whether it is influenced by course modality. Specifically, it will examine students who take community-based hybrid courses and attempt to determine if they exhibit a higher sense of belonging than those enrolled in traditional courses.

Online learning and its associated research are still in their infancy (relatively speaking). While standards and best practices have emerged, research on its long-term impact is still a new frontier. While there is a great deal of research surrounding persistence and retention within online and hybrid courses, there is a significant gap in the literature in terms of how online and hybrid courses and programs impact student persistence and retention at an institution overall. It is an important distinction to make as a quick search of the existing literature reveals a great number of studies that address retention rates in hybrid and online courses along with studies on specific interventions and their impact on student persistence to the end of the course. Since this

is established research, it is important to point out that this study instead looks at the experience of taking hybrid courses and what effect that experience may have on student persistence at the institution itself, as opposed to persisting to the end of a particular course.

Much of the scholarly research and literature in online learning can be traced to one of the most significant findings in terms of the effectiveness of online learning, Russell's (1999) *no significant difference phenomena*. The no significant difference phenomena established that modality, whether online or face-to-face, did not impact student outcomes in terms of academics (Russell, 1999). Russell's finding paved the way for higher education institutions to begin building online and blended courses and programs at a rapid pace, and they continue to do so because of the popularity of these courses (Ellis, O'Reilly, & Debreceeny, 1998). Stemming from Russell's findings, a series of scholarly works explored best practices in online learning. Major concepts in online pedagogy include the use of community building among peers and timely communication between instructor and student (Palloff & Pratt, 2002). As technology improved the practice of active learning, while avoiding too much absorb content (in which students are passive) has been promoted as well (Horton, 2011). These are the building blocks for successful online course design and execution. What remains unclear in the literature is the overall impact the experience of community-based hybrid course design can have on a student's perception of the overall university community.

Definition of Terms

ANGEL - ANGEL is the learning management system in which all of the hybrid courses in this study used when delivering instruction online.

Hybrid – Penn State defines a hybrid course as any course in which traditional classroom-based instruction is combined with online instruction in which 40% or more of the classroom-based instruction is replaced with activities in the online learning environment.

LMS – LMS stands for Learning Management System. At Penn State, the LMS is ANGEL. All hybrid courses at the Abington College of Penn State use the ANGEL LMS to deliver online course content.

ALN – ALN stands for Asynchronous Learning Networks. Asynchronous refers to online interactions that take place in a non-specific time frame. In other words, students do not have to be online at a specific time, rather they have “check points” that represent extended time frames to complete online assignments. For example, one course at the Abington College included in this study requires students to watch a film online as the week begins and post to an online discussion forum by Thursday at midnight, then respond to at least two peers in the course in the discussion forum by Sunday at midnight. The flexible schedule and asynchronous nature of the course allows the student to complete online work at a time that is convenient for them, rather than requiring students to convene online at a designated time, as is the case with the synchronous modality. Such a system for online instruction is sometimes referred to as an asynchronous learning network or ALN (Rovai, 2002b).

OL2000H – This term refers to the training instructors at the Abington College undertake in order to effectively teach online and transform their traditional courses into hybrid courses. All instructors at the Abington College who wish to teach a hybrid course must enroll in OL2000H. This professional development course lasts three weeks and is delivered in the hybrid format so instructors get a feel for what the student experiences taking a hybrid course. Issues such as online pedagogy and time management are stressed. Participants also learn about various

e-learning authoring tools, the use of which could impact a student's satisfaction with a course. Most importantly the Abington College's quality assurance standards for online learning are explained, exemplified, and emphasized.

Sense of Belonging - Hagerty and Patusky (1995) define sense of belonging as "the experience of personal involvement in a system or environment so that persons feel themselves to be an integral part of that system or environment" (p. 173).

Quality Assurance Standards - These are standards that must be followed by Abington instructor's who wish to teach online or hybrid courses. These standards are based on the quality matters standards, which have established meaningful attributes to quality online instruction (Ralston-Berg & Nath, 2011).

SBS – Sense of Belonging Scale. The SBS is a 26-item scale to measure students' sense of belonging in the college environment (Hoffman et al., 2002). It serves as the basis of the survey instrument for this study.

Traditional – Traditional refers to a course modality in which instruction takes place in the classroom only (as opposed to some portion taking place online). Traditional courses are also referred to as face-to-face (f2f).

Conceptual Framework

The design of this research is a quantitative study that will examine the impact of hybrid course offerings at a nonresidential campus and the impact on a student's sense of belonging and satisfaction. In one of the most referenced models of student persistence, the transition of the student into the college environment is a fundamental indicator of student persistence (Tinto, 1987). As the student transitions into the college environment, whether or not that student chooses to persist at the institution is predicated on their integration into academic and social

aspects of the institution (Tinto, 1987). Citing Tinto's model as "the most comprehensive model of persistence/withdrawal behavior," Hoffman et al. (2002, p.228) conducted a study to determine a student's judgment of fit into the social and academic aspects of the institution. The student's sense of fit is established by his/her own sense of affiliation and identification with the university community is known as sense of belonging (Hoffman et al., 2002). As sense of belonging increases so does the likelihood that the student will persist at the institution (Hoffman et al., 2002). Hoffman et al. (2002) conducted an extensive study to determine the factors related to and important to the development of this sense of belonging. Hoffman et al.'s study produced a 26-item survey instrument that will form the basis of the survey instrument for this study.

Hybrid courses at the Abington College are predicated on the building of an online learning community. The concept of community is stressed in the professional development program all instructors who teach a hybrid course at the college are required to take. Rovai (2002) conducted research on community dynamics in online courses and found that online graduate students can feel connected to their virtual classroom community. The structure of an online forum available 24/7 to the members of the course can provide a built-in support community (Bruckman, 2006). The hybrid courses at Abington pair traditional classroom instruction with online instruction, which replaces at least 40% of classroom instruction and attempts to build in a classroom support community in the online learning environment. During the professional development process, basic online pedagogy of community building is stressed. The instructors are advised to make every attempt to build community as is stressed in seminal literature because it is essential to promote learning in the online environment (Palloff & Pratt, 1999). When examining course evaluations from OL2000H, 91% of instructors who participated indicated that they subscribed to a community-based approach for their hybrid courses. It is the

hope of the administration of the Abington College that this will have the desired effect of building strong online learning communities within its hybrid course offerings. The researcher will attempt to determine if participating in a hybrid course that emphasizes community will lead to a greater sense of belonging to the college community as a whole.

Studies have indicated that student satisfaction is a significant factor influencing retention (Aitken, 1982). In the student persistence model created by Tinto (1987), satisfaction with academics played a significant role in a student's transition into the college system and thusly played a significant factor in a student's likelihood to persist. The researcher will also gauge student satisfaction as a secondary dependent variable. Students enrolled in hybrid courses at the Abington College will be asked to participate in this study to examine their sense of belonging and satisfaction in an attempt to determine if their enrollment in a community-based hybrid course has had an impact on their sense of belonging, their satisfaction with the course, as well as their overall satisfaction with the college. Students enrolled in the same courses delivered in a traditional modality also will be asked to participate in this study. The researcher will attempt to draw conclusions about the levels of satisfaction and sense of belonging among various student groups enrolled in hybrid courses and their traditional counterparts.

Research Question

Based on the theoretical framework on student persistence and sense of belonging described above, this study will employ a series of independent variables to measure the relationship between these independent variables and student sense of belonging and satisfaction. The independent variables in this study are gender, age, race, class standing, GPA (which will be self-reported), marital status, number of children, employment status, number of hours worked per week, and number of hybrid courses taken. The two dependent variables will be student

sense of belonging and student satisfaction. The two dependent variables will be analyzed from a survey instrument, the sense of belonging scale, administered to the students from both groups at the end of the fall semester.

The research question this study will attempt to answer is: Do students who take hybrid course offerings at a nonresidential campus exhibit increased levels of sense of belonging and satisfaction? To attempt to answer this question, a quantitative analysis will be done to determine the correlation, if any, between the dependent and independent variables described above using a multiple regression analysis.

The researcher through the data analysis will attempt to establish a relationship between the independent variables employed in the study and student sense of belonging and satisfaction in an effort to determine if students taking hybrid courses exhibit greater levels of sense of belonging and satisfaction. The analysis will not only explore the course modality students are enrolled in, but also several demographic factors. The factors that will be included in the exploratory analysis are as follows: gender, age, race, class standing, GPA (which will be self-reported), marital status, number of children, employment status, number of hours worked per week, and number of hybrid courses taken. The analysis will attempt to establish whether any or all of these factors impact levels of satisfaction and sense of belonging.

Limitations of the Study

The limitations of this study are as follows. The analysis for this study will come from a one-time collection of data at the end of the semester. Collecting data over subsequent terms may establish a pattern in correlation or may yield varying results from one term to the next. Students who are experienced in taking hybrid courses may have higher levels of satisfaction than students taking this type of course for the very first time (Wickersham & McGee, 2008).

Therefore, students may have a different response to the same study conducted in a subsequent semester or term. The results of this study represent a snapshot in time of a convenience sample of students at the Abington College who agree to participate. Results may not be generalizable to other types of institutions.

Finally, all hybrid courses included in this study are delivered via the ANGEL LMS platform. Data collected about student satisfaction in hybrid courses will reflect, to some extent, satisfaction with the ANGEL platform, and there is no mechanism in this study to account for this. Satisfaction with the LMS can have an impact on student satisfaction with online learning (Wickersham & McGee, 2008).

Delimitations

The boundaries of the study are as follows:

1. Data will be collected at the end of the Fall 2014 semester.
2. Data will only be collected from students at the Abington College of Penn State University. To establish the impact of the community approach in the design and delivery of hybrid courses, it is critical that the courses included in this study are taught by instructors who have undergone the same professional development program that emphasizes community dynamics.
3. Data will come from a convenience sample of students in hybrid courses and f2f counterparts who agree to participate in this study.

Organization of the Study

- Chapter 1 describes the background, purpose, and scope of the study. It provides details of the research question, the hypothesis as well as a description of the

confirmation and exploratory analysis. The limitations, delimitations, and assumptions of the study are also discussed.

- Chapter 2 provides a thorough review of the literature including past research on how satisfaction measures retention as well as how instruments are measured to gauge students' satisfaction. The nature of online learning and hybrid courses, and their impacts on higher education will be discussed along with elements that make for a successful online/hybrid course offering. Finally, the researcher will look at studies of student persistence and related factors.
- Chapter 3 describes the methodology of the study. The research is a quantitative study using data from a distributed survey instrument along with the data collected from student registration and their corresponding dates.
- Chapter 4 presents the data analysis, findings, as well as a summary of key findings.
- Chapter 5 contains the summary, conclusions, and implications of the findings and their impact on both the institution and the body of research on hybrid course offerings.

Chapter 2: Review of Related Literature

Overview

The following chapter will provide a thorough review of the literature, as well as an explanation of the theoretical framework that serves as a basis for this study. The chapter will further provide a historical context for the proliferation and importance of online learning in the field of higher education as well as how the blended/hybrid format has evolved from it. Additionally, the issue of student persistence and its importance to higher education administrators will be thoroughly examined. Specifically, Tinto's (1987) model of student persistence, which serves as a significant element of the theoretical framework for this study, will be contextualized. From this contextualization, the issues of student integration into the college community, and the student perception of their own sense of fit will be explored. Finally, an explanation of the dichotomous independent variable of course modality will be presented along with the dependent variables of sense of belonging and student satisfaction.

The primary purpose for this study is to evaluate the impact of hybrid courses on student attitudes and behaviors. Although online courses offerings are steadily increasing year by year, little research has been done on the effect thereof on student attitudes and behaviors (Allen & Seaman, 2007). The learning outcomes for online students compared with that of their counterparts in traditional courses has been a subject thoroughly studied dating back to Russell's (1999) *no significant difference phenomenon*. However, a natural research question that can arise from these studies is how is the college experience different for an online student? Such a question would be especially pertinent on a campus that integrated aspects of online learning into traditional campus culture. Specifically, what effect does introducing online learning into the curriculum on a nonresidential campus have on the campus culture? As mentioned in Chapter 1,

the Abington College was charged with increasing its number of hybrid (partially online) course offerings (R. Erickson, personal communication, October 13, 2011). It could be hypothesized that the flexible nature of these hybrid course offerings could have a significant impact on the campus culture (Moskal et al., 2013). Previous research has discovered that web-based courses by their nature are more attractive to busy students (Doherty, 2006). On a nonresidential campus students often juggle work, family, and academics so an online component within courses provides the option to come to campus less often may also be more attractive to many of the students. If this option is attractive to a significant portion of the student body, what is the effect on their attitudes about the college? How do these courses affect their behavior? It is natural to wonder if the virtual environment of the LMS extends the campus presence for students or isolates them. Is it possible that a student taking these types of courses, and spending less time on campus, can feel a greater sense of belonging to the college than a student enrolled in traditional courses and spending more time on campus? To this date little research has been conducted to determine if this is the case.

The reason why this research would be of interest to administrators and scholars in the field of higher education is that student attitudes about their own perceived connection or sense of belonging to a campus has a significant impact on whether or not that student will persist to graduation at that institution (Hoffman et al., 2002). One of the most widely referenced models of student persistence is Vincent Tinto's (1987), which placed a strong emphasis on how well the student acclimated to the academic and social aspects of the institution and correlated that acclimation to the intention to persist. The acclimation of students to the collegiate environment is predicated on the student perception of their own sense of fit into these institutional aspects (Tinto, 1987). The process of acclimating to the institution forms the foundation for the primary

dependent variable for this study, student sense of belonging. Tinto (1997) in his later work wondered if virtual interactions could replace face-to-face interactions in his model. The research contained in this study will attempt to help answer that question by using several independent variables. The independent variables in this study are gender, age, race, class standing, GPA (which will be self-reported), marital status, number of children, employment status, number of hours worked per week, and number of hybrid courses taken. The instrument for this study, the SBS, is the same instrument that Hoffman et al. (2002) used to determine if learning communities have a significant impact on student sense of belonging at the University of Rhode Island. In that study, Hoffman et al concluded that learning communities do impact student sense of belonging in a positive manner. It is the prediction of the researcher in this study that community-based hybrid course will also have a positive impact on sense of belonging. The SBS also examines another aspect of Tinto's model with an item related to student satisfaction with the academic experience at an institution. Therefore, student satisfaction will be the second dependent variable for this study. The researcher predicts that the flexible nature of hybrid courses will better meet the needs of this population of nonresidential students, and subsequently students who take them will exhibit higher levels of satisfaction than their counterparts in traditional courses.

The Proliferation of Online Learning

Online learning in higher education is growing at rapid pace (Allen & Seaman, 2007). As far back as 2006, online enrollments were growing at a rate of 9.7 % compared with 1.5% growth of student population (Allen & Seaman, 2007). In 2009, that figure jumped to 17% growth in online enrollments while the growth of student population in higher education shrank slightly to 1.2% (Allen & Seaman, 2010). The upswing in online learning coincided with the tech

boom of the 1990s, and college presidents looked to ride the dotcom wave to higher enrollment figures. But the growth in online learning has sustained, whereas the dotcom boom has not (Hafner, 2002). Although the proliferation of online learning began with the dotcom bubble, interestingly enough, the economic downturn (starting with the great recession of 2008), also increased the demand for online learning (Allen & Seaman, 2010). Higher education administrators report that due to the economic decline, there has been a 66% increase in demand for new online courses and programs and a 73% increase in demand for existing online courses and programs (Allen & Seaman, 2010). With individuals seeking to acquire skills that are desirable in the current job market while at the same time trying to support their families and themselves, the flexibility that online and partially online courses provide would seem to be a desirable commodity in the current economic climate.

Within Penn State, administrators are seeing that same demand for online course offerings, and the World Campus is experiencing even higher rates of growth. The World Campus, Penn State's all online division, has experienced rates of double-digit growth for five consecutive years as of 2012 (Aneckstein, 2013). These figures provide strong evidence for expanding online and hybrid course offerings at the university.

As online learning gains popularity within traditional brick and mortar institutions, the online learning environment has become a larger part of the college setting (Ralston-Berg & Nath, 2011). However, little research exists on how online learning in a traditional college setting can affect the campus culture as well as student attitudes and behavior. At a nonresidential campus like the Abington College, students cannot be strictly online students. Students can take some online offerings through the Penn State World Campus along with some hybrid courses thus experiencing a combination of online and traditional instruction. There is a

great need for research in this area as much of the distance education literature that has been published is either theoretical or anecdotal as opposed to research based (Walker & Fraser, 2005).

From Online Courses to Hybrid Courses

The popularity of hybrid courses at the Abington College can be traced back to a meta-analysis commissioned by the U.S. Department of Education published in 2009. The analysis concluded that supplementing face-to-face instruction with online learning produced stronger learning outcomes than traditional instruction with no online component (Means, Toyama, Murphy, Bakia, & Jones, 2009). That finding also was confirmed through a study conducted by the University of Central Florida, one of the largest adopters of the hybrid course format. It reported that students taking courses in the hybrid format achieved at a higher level than their traditional counterparts (Dziuban & Moskal, 2011). The academic outcomes of the hybrid modality made it easier for the faculty at the Abington College to subscribe to the idea of offering these types of courses. The track record of academic success these courses have had, coupled with the familiarity of the classroom instruction component, can make it easier for faculty who feel that teaching online is not real teaching. For this reason, hybrid courses are more widely adopted than all online courses simply because they are less controversial among the faculty (Young, 2002).

From an administrative perspective, hybrid courses have several practical benefits. The student population in higher education is increasing every year (Allen & Seaman, 2010). Offering more courses in the hybrid format can cut down on problems such as parking, commute time, and classroom space on a nonresidential campus (Young, 2002). Like many other institutions, the Abington College faces an ever-increasing student body and finite amount of classroom space and resources. The college is landlocked in a suburban Philadelphia

neighborhood, with very little room to expand. While it is the goal of Penn State's president to expand hybrid course offerings across all of the University's campuses, such an objective makes a great deal of sense for the local administration as well. Its practicality is especially evident in conditions where students see education as an avenue to better their prospects for long-term career growth while also finding an academic program flexible to their needs. Hybrid course offerings allow the institution to expand access in a manner that is academically sound to meet the needs of an "environment of rapid expansion and deteriorating economic conditions" (Dziuban & Moskal, 2011, p. 238).

Community-based Hybrid Courses

The research has supported the success of hybrid course offerings in terms of student achievement (Means et al., 2009). Additionally, researchers have made the case for how the hybrid model meets the needs of students and administrators (Moskal et al., 2013; Young, 2002). However, simply creating and offering these kinds of courses does not ensure academic success nor does the modality alone meet the needs of the students. The student experience in online learning is impacted by the effectiveness of the teaching strategies and the creation of social interactions in a mediated context (Roberts, Irani, Telg, & Lundy, 2005). While professors in a traditional modality may have found comfort and success with lecture-based classes, the online learning environment requires community-building and fostering meaningful interaction among the learners (Palloff & Pratt, 1999). The changes to the learning environment represent a fundamental shift in the paradigm. Students in the online learning environment must be more active and engaged in the online community, and instructors must take on the role of the facilitator (Palloff & Pratt, 2000). Such a transition can be difficult for instructors used to the traditional didactic model of teaching. Therefore, a comprehensive faculty development program

for teaching online is essential to the success of any new online initiative. For this reason, prior to launching the first series of hybrid course offerings, the senior instructional designer at the Abington College created a comprehensive faculty development program for online teaching and hybrid course design. It is essential when converting a course from the traditional modality to the hybrid format that instructors do not seek to simply replicate the same methods of instruction (Paloﬀ & Pratt, 2000). The faculty development course at the Abington College was designed to help instructors make this transition to a new kind of teaching predicated on building and facilitating online learning communities within a course. All instructors who wish to teach in the hybrid format are required to undergo this training. The requirement for professional development in online teaching is standard practice at larger online universities such as Walden or Phoenix (Lao & Gonzales, 2005). Although not all institutions make such professional development a requirement, it is important because of how difficult the transition to a new style of teaching can be for some instructors, and many instructors are ill-prepared to make this transition because of a lack of general understanding as to what effective online teaching entails (Lao & Gonzales, 2005).

Abington's online teaching course runs for three weeks in the hybrid format. The format was chosen so that instructors will get a feel for the student experience in a hybrid course. Participants will meet in person once a week for three weeks, with online interactions via the LMS in between. The course uses the community-based Paloﬀ & Pratt model (1999) as its theoretical framework to encourage faculty to create conditions in their hybrid courses where rich interactions among the students can occur as well as opportunities for students to learn from each other as opposed to relying on the instructor or text for knowledge sharing. The professional development also teaches the importance of timely and effective communication and time

management, which are essential tools for the successful online instructor (Lao & Gonzales, 2005). Ultimately, the successful online teacher must make the learning environment feel and function like a traditional classroom, giving the students the same sense of interacting with their peers from their computer as they would as if they were in the same room (Harasim, 1995).

Community as a Conceptual Framework

To contextualize the research question, it needs to be stressed that every instructor teaching a hybrid course has undergone professional development emphasizing how essential building online learning communities within a hybrid course is to successful course design. The concept of community is one that instructors teaching traditional courses at the college may not have been introduced to or necessarily subscribed to. The concept is essential to the researcher's conceptual framework for this study. Since all of the instructors teaching hybrid courses in this study underwent the same professional development emphasizing the importance of online learning communities, it supports the concept that students in those courses would feel a greater sense of community than their counterparts in traditional courses and therefore exhibit a greater sense of belonging to the overall community of the college.

The conceptual framework of online learning communities is rooted in extensive research (Bruckman, 2006; Eib & Miller, 2006; Ellis et al., 1998; Fisher & Baird, 2005; Lave & Wenger, 1991; Palloff & Pratt, 1999; Riel & Polin, 2001; Rovai, 2002b; Wenger, McDermott, & Snyder, 2002). However, the notion of learners working in conjunction with one another to achieve higher levels of understanding than they would reach on their own can be traced back to the concept of the zone of proximal development (Vygotsky, 1978). The online learning environment of a hybrid course can take advantage of the nature of the Internet to make this modality particularly effective. Unlike the confines of a traditional classroom, the web-based

classroom is open and available to students 24 hours a day 7 days a week making learning anywhere at anytime a real possibility for students. The members of this kind of class contribute to and benefit from a rich network of ideas that connects them to vast amounts of information and resources (Bruckman, 2006). The concept of a constant connection to ideas and information represents one of the most immediate benefits of an online learning community of this nature: Members can get immediate access to the information they need and spend less time hunting for information or solutions (Wenger et al., 2002). By setting forth guidelines and proper expectations, the effective online instructor can operationalize this harvesting and sharing of information to form a knowledge building community (Riel & Polin, 2001). The process of harvesting and sharing information revolves around a common goal or series of learning objectives, where members of the community work toward achieving levels of understanding about the nature of the course subject matter (Riel & Polin, 2001). The members of the online learning community in a hybrid course can through a process of continuous asynchronous interaction become a living body of knowledge for the benefit of all of the members of the community (Wenger et al., 2002).

The process of learning in the manner described above is most effective online as the technological affordances can create new levels of collaboration not previously possible (Riel & Fulton, 2001). It is stressed to the faculty in Abington College's professional development program for online teaching that technology is a tool used to foster communication and build community, and technology is not a substitute for sound pedagogy. While a variety of e-authoring tools are shown to participants, the building of the online learning community is the primary learning objective for the course. The concept of community building is demonstrated by the instructor of the course, who facilitates discussions in class and online in an effort to

demonstrate the community model. The modeling by the instructor is done in the hopes that participants will use these same techniques when they go on to teach their hybrid courses at the Abington College.

In addition to the initial faculty development course taught by the director for the Center for Teaching and Learning, experienced faculty members teaching hybrid courses also engage with the community of learners to share best practices. The concept is built upon Wenger et. al (2002) communities of practice model. Communities of practice are defined as groups of people who share a common goal or problem and who work toward the goal or solution by interacting on an ongoing basis to expand their knowledge (Wenger et al., 2002). The model can not only be applied to the faculty of the Abington College who are working as a group to hone their skills in online teaching, but also to their students who work in a similar manner in a hybrid course to meet the course goals and objectives. If that group over time develops a common identity, they can become a community of practice (Wenger et al., 2002). It has been the hope of the administration of the Abington College that faculty who teach hybrid courses become a community of practice. To be clear, communities of practice are organic in their formation, but the conditions can be nurtured to allow for such growth among a group of learners (Wenger et al., 2002). It has been the goal of the Center for Teaching and Learning and the administration at Abington to create such conditions through the design and delivery of the faculty development course for online teaching.

As previously mentioned, technology is integral to online instruction and is a part of faculty development, but it must be built upon sound pedagogy. Ultimately the use of technology should be predicated on fostering thoughtful discussion and act as a conduit to contribute to the rich web of ideas produced by the online learning community (Bruckman, 2006). What this

means is that participants in the online learning community should be learning with technology, not from technology (Jonassen, 1995). In other words, technology should not be used to replicate the didactic lecture-based instruction seen often in the traditional classroom. Participants in the online teaching course are steered away from creating too much content that is not highly interactive. Specifically, the online learning environment should not contain too much absorb-related content, with students passively listening to lectures or watching a talking head (Horton, 2011). Avoiding passivity is an especially important concept as it relates to Astin's (1984) theory of student involvement, a widely cited theory of student persistence, that will be explored later in this chapter. Additionally it is important to note that such passivity and absorb-related content can often come in the form of canned recorded lectures or similar materials that require no interaction between peers and no interaction between instructor or learner. The lack of interaction can make the student perceive the learning environment as cold or sterile and is also a characteristic students reference as evidence of poor teaching (Watkins & Mazur, 2013).

Research shows that students feel they are receiving quality online instruction when the presence of their fellow classmates and instructors is at a high level (Stewart, Hong, & Strudler, 2004). Therefore the role of technology within the online learning environment should be one of creating more opportunities for participants and instructors to maintain a high quality presence in the course. The creation of more opportunities for interaction also fits into the model of persistence for traditional students, who exhibit higher levels in the predictors of persistence when they are more socially connected and the instructors are more approachable (Roberts et al., 2005). Roberts et al. (2005) recommend the use of technology to leverage group dynamics for this purpose.

The final element for the framework of the professional development course for online teaching at the Abington College centers on informing participants of Penn State's quality assurance standards for online learning. These are aspects of quality course design adopted by the University to assure that all students taking an online or hybrid course receive the same quality in their academic experience as they would if they were enrolled in a traditional course. These standards have been adopted from the quality matters rubric to evaluate the academic quality of an online or partially online course. The quality matters standards are being increasingly used across institutions of higher education to provide a template for standards of online instruction (Ralston-Berg & Nath, 2011). In particular the Quality Matters set of standards and accompanying rubric has garnered a great deal of attention nationally. These standards include:

- Ease of navigation in the course.
- Clear learning objectives.
- Prompt and personalized feedback.
- Clear list of the technical requirements.
- Clear process in place for students to receive technical assistance.
- Proper accessibility.

Ralston-Berg & Nath (2011) through qualitative research with online students found the quality matters benchmarks were consistent with what online students felt constituted quality online instruction and course design. The role of quality is important in the lens of this study as all instructors at the Abington College are required to take a professional development course in online teaching and hybrid course design in order to teach such a course at the college. In that professional development course (OL2000H), the Quality Matters rubric is stressed as the

standard by which hybrid courses should be designed and how they will be evaluated. It is the hope of the College that this practice will result in high levels of student satisfaction in hybrid courses.

Equipped with the knowledge of how online learning communities function as well as their benefits, it is the hope of the administration of the Abington College that cohesive and productive online learning communities are thriving within all of the hybrid course offerings. A survey conducted by the Center for Teaching and Learning at Abington of the participants in OL2000H found prior to taking the professional development course 49% of the participants subscribed to a community-based learning approach as opposed to 91% subscribing to a community-based approach after completing the program (Roche, Costello, Anderson, & McQuiggen, 2012). All of the instructors teaching hybrid courses in this study have undergone this professional development program, which helps form the basis of the hypothesis. The instructors teaching the hybrid course for this study overwhelmingly subscribe to a community approach and have been trained to implement and cultivate communities within their hybrid courses. Therefore, it follows that the students taking these courses should feel connected to a community more so than students in the traditional courses taught by instructors who have not had the benefit of this training and may or may not subscribe to a community-based approach. This helps form the basis of the primary hypothesis that students who take hybrid courses will exhibit a greater level of sense of belonging than the students enrolled in the traditional modality of the course.

Student Persistence

Researchers have studied the concept of student persistence and the associated dropout phenomenon for more than 30 years (Barefoot, 2004). However, what has not been studied is

how the impact of student experiences in hybrid courses might impact traditional models of student persistence. Tinto (year?) created a model that has served as a basis or archetype against which other models of student persistence are compared and contrasted (Barefoot, 2004). It's the model that is most widely explored and discussed in higher education literature (Milem & Berger, 1997). Tinto (1987) conceptualized a student's likelihood to persist on the student's own perception of how well they had integrated into the academic and social aspects of the institution. It is important to note the social aspects of the persistence model because as Roberts et al. (2005) mention students are not simply academic beings, but social ones. Also important to note that Tinto (1997) himself points out that the experiences in the classroom itself are severely lacking in studies of the student persistence model.

Tinto's Model of Student Persistence

Tinto's model (1987) contains three components: separation, transition, and incorporation. The community theme is dominant in these components as the separation stage involves the student leaving past communities to prepare for new ones. The preparation process is the transition stage in Tinto's model. The final component, incorporation, involves the student becoming a part of new communities in the institution. Previously, studies have been conducted using Tinto's framework to determine if first-year learning communities improved a student's sense of belonging to the institution (Hoffman et al., 2002). Using the Sense of Belonging scale, which will be explored later in this chapter, Hoffman et al. (2002) found that students in first-year learning communities do indeed exhibit a greater sense of belonging than students who choose not to be a part of these programs. From this conceptual framework, the researcher will attempt to determine if similar results can come from online learning communities in hybrid course offerings. Milem and Berger (1997) pose a similar question in their analysis of the Tinto

and Astin models of persistence, stating that it is critical to the research on student persistence to identify processes that ease the transition.

In Tinto's model, interactivity is key. The more a student interacts with other students and faculty, the more likely they are to persist (Tinto, 1997). Tinto makes the same case for integration, concluding that integrating socially and academically influence persistence in separate ways, and students are even more likely to persist when integration is achieved in both the social and academic systems of the institution. Tinto goes on to compare this influence across different kinds of institutions. On nonresidential campuses, there is much less opportunity for student interactions with faculty and peers. For this reason the classroom itself and its associated interactions have the most influence on the student's sense of how well they have integrated into the college community. Personalized interactions and their role in Tinto's model form the primary conceptual framework for this study as the researcher believes that extending the classroom into the online learning environment, which is available to the student 24 hours a day, will increase student feelings of belonging because they have more opportunities for interaction. Tinto stresses the importance of instructors promoting peer interaction, which aligns with the objectives of the faculty development model previously explained. Tinto also makes the case that interactions in virtual environments such as web-based instruction should be studied and explored. Tinto states the possibility of engagement and integration through online learning environments is worthy of exploration and study to determine how such environments might fit into the persistence model (Tinto, 1997).

Astin's Theory of Involvement

It is important to point out that there is another model of student persistence that is referenced nearly as much as Tinto's model, which is the theory of involvement (Astin, 1984).

Astin defines involvement as “the amount of physical and psychological energy that the student devotes to the academic experience” (p. 518). In this model, Astin ascribes five fundamental postulates to his theory. The first postulate is the investment of physical and psychological energy in various objects. By the term objects, Astin is referring to aspects of the student’s experience, be they general or specific. These objects can be as general as the student’s first-year experience at an institution or as specific as the process of studying for an exam in a particular class. Astin’s second postulate revolves around how different students approach these objects in different manners. For example, the degree to which a student engages in the process of studying for an exam in a particular course, or the lack of their engagement in that process. The engagement on the part of the student is in a constant state of flux as different students apply varying degrees of engagement with these objects at various times in their academic career.

In his third postulate, Astin points out that these objects can have both qualitative and quantitative properties. In the previous example of exam preparation, a quantitative property would be the amount of time put into exam preparation while a qualitative property would be the methods used to prepare for the exam and the associated effectiveness. Astin’s fourth postulate states that student learning is proportional to the qualitative and quantitative aspects of student involvement in an academic program. Finally, the fifth postulate states that the effectiveness of any academic policy or practice is directly related to its capacity to increase student involvement.

Astin specifically stresses the importance of curriculum in his theory, stating that any curriculum must elicit student effort and expenditure of energy to achieve desirable learning outcomes. The emphasis on curriculum directly relates to the concept of the community-based structure and quality assurance standards incorporated into the hybrid courses at the Abington College.

Astin (1984) also addresses the contrast between residential and nonresidential campuses, noting that the involvement of faculty and students at the latter seems to be minimal. Astin goes on to state that students living on campus are more involved in campus life, and their chances of persisting are greater than commuter students. However, it should be noted, that like Tinto's original model, Astin's theory was developed prior to the proliferation of online learning and before the advent of newer technologies that allow for the substantive discourse between student and instructor. The unexplored role that virtual spaces may play in Tinto's model or Astin's theory provide another opportunity to examine whether the online learning environment can extend the student experience beyond the brick and mortar campus to challenge long-standing notions of existing models of student persistence. Astin himself states that finding more opportunities for meaningful interaction between students and faculty would be beneficial on most college campuses.

The Synthesis of Tinto's Model and Astin's Theory

While Tinto's model of student persistence and Astin's theory of student belonging are the most commonly cited approaches to student persistence in the literature, the relationship between the two is not often empirically studied (Milem & Berger, 1997). In their study, Milem & Berger (1997) create a conceptual model of student persistence that integrates aspects of Astin's theory of student involvement into Tinto's model in an effort to better understand how both the process of student involvement with various aspects of college life affects the integration of the student into the new environment of the college community. In Tinto's model, he discusses the importance of student interaction with peers and with faculty. The significance of interaction is a primary area of overlap between Tinto's model and Astin's theory. Specifically, the more interaction that occurs between students and faculty, the more students

will be involved in campus life (Astin) and the smoother the acclimation will be into the collegiate system (Tinto).

Milim & Berger (1997) were interested in studying specifically what behavioral mechanisms in the campus environment facilitate or hinder the process of acclimation. As previously mentioned, a significant part of the Tinto model is the students' perceived sense of fit within the institution. Milim and Berger were additionally interested in discovering the relationship between this perception and behaviors during the integration process described in Tinto's model. The perception of sense of fit refers to the student's beliefs about how well they feel a part of both the social and academic aspects of the college or university. It is that perception Milim & Berger study seeks to study along with associated behaviors that arise from it.

Milim and Berger further synthesize Tinto's model and Astin's theory by suggesting that transition into the collegiate environment results from a series of interactions between perceptions and behaviors. In Astin's theory previously discussed, it was the student's interaction with various objects both quantitatively and qualitatively that influenced their involvement with the institution. In the Milim & Berger study, they suggest that student behavior influences the student's perception of sense of fit into the institution thus connecting Astin's theory with Tinto's model. Subsequently, according to the researchers, student perception will influence the amount of energy put into the various objects referenced in Astin's theory. The energy expenditure will influence involvement, which will in turn influence acclimation into the collegiate system discussed in Tinto's model.

The goal of this hybrid model is to explain how interaction with various academic and social aspects of the institution can affect the acclimation process. They describe this model as

the behavior-perception-behavior model, which describes the acclimation process. The researchers used three rounds of data collection applying three different survey instruments to capture the effects specified in the model. As Astin suggested in his theory, the findings from the Milim & Berger study found that student interaction with faculty both in and out of the classroom and student perception of institutional support influences the perceived sense of fit within the academic aspects of the institution per Tinto's model. Additionally, high levels of peer interaction support higher levels of perceived sense of fit into the social aspects of the institution. What can be concluded from this synthesis of the Tinto model and the Astin theory is that a high degree of interactivity influences students' sense of belonging to the college. The conclusion lays more groundwork to support the case for hybrid courses. Specifically, courses that are more interactive should increase student sense of belonging.

The Tinto model and Astin's theory have been useful for administrators to design interventions and evaluate programs designed to improve student persistence and, ultimately, retention rates. Some prime examples of these programs and interventions are first-year seminars, first-year experiences, and first-year learning communities. From Tinto's model, and Astin's theory, it has been concluded that increasing student involvement and easing the transition into the collegiate environment can have a positive effect on student persistence. For this reason, programs like first-year seminars, first-year experiences, and learning communities are designed to ease the transition to college by increasing opportunities for involvement and interaction. Frequently, first-year learning communities are a cohort of students who take multiple classes together as a group along with a first-year seminar (Hoffman et al., 2002). The nature of a learning community has many of the attributes to ease the transition of the student into a college or university as described in Tinto's model. Tinto defined this transition as a student's own sense

of fit within the academic and social systems of the institution, in essence is the student's sense of belonging. Prior to the study conducted by Hoffman et al. (2002), very little research existed about measuring student's sense of belonging or empirically testing it. Consequently, student sense of belonging was left out of many popular attrition models. Gaining insight into the factors that influence student sense of belonging can provide some valuable benefits for colleges and universities, such as the design and evaluation of programs and intervention strategies (Hoffman et al., 2002).

The Role of Technology in Student Persistence

Much of the most recent literature on student persistence in higher education focuses on the role of technology in student acclimation to the social and academic aspects of the institution or how technology can impact levels of interactivity and engagement among students. Both of these concepts of the role of technology in student persistence can be related back to Tinto's framework and Astin's theory. While one could argue that social networking sites like Facebook draw away from more meaningful engagement in academic activities, a recent study specifically debunked such an argument. It found that Facebook can ease a student's transition into the collegiate environment (Gray, Vitak, Easton, & Ellison, 2013). Specifically, Gray et al. (2013) found that social networking via Facebook fosters opportunities for relationships among peers at an institution and builds a support structure. This directly relates to Tinto's (1987) model, which found that student persistence is largely predicated on a student's perceived sense of fit to the academic and social aspects of the institution. Gray et al. found that the number of Facebook friends a student has at an institution predicts the level of social adjustment among first-year students, which in turn increases the likelihood that students will return the following year.

Furthermore, Gray et al.'s findings suggest that student interaction via Facebook includes academic support and collaboration on academic projects and endeavors.

Gray et al.'s (2013) findings are consistent with a study conducted by Barczyk and Duncan (2013), which found that student and faculty interaction via Facebook enhanced participation and discussion. In the Barczyk and Duncan (2013) study, the use of Facebook in classes enhanced student perceptions of social learning and connectedness particularly in students over the age of 25. Also important to note in the findings of the Barczyk and Duncan study, is that while students had a favorable view of the use of Facebook in classes, they did not perceive Facebook to be more effective than the LMS (Blackboard), nor did they prefer using Facebook over the LMS. The finding is particularly interesting in that it would appear the medium in which students are interacting online is not as important as the kinds of interactions..

In addition to Facebook, Twitter presents a different medium in which students and faculty can engage. While Facebook tends to be more popular, educators have been more inclined to use Twitter possibly because it is "more amenable to ongoing public dialogue" (Junco, Elavsky, & Heiberger, 2013, p. 273). Junco et al. conducted a study in which student engagement via the National Survey of Student Engagement (NSSE) was measured and found that students who engaged with instructors and peers via Twitter exhibited higher scores. Additionally, students in the Twitter group also had higher GPAs leading Junco et al. to conclude that interaction via Twitter with instructors and peers led to higher levels of academic engagement and performance. The finding is particularly interesting when related to Astin's (1984) theory of involvement as Twitter provides for additional opportunities for interactivity with faculty and peers.

Sense of Belonging

Hagerty & Patusky (1995) define sense of belonging as “the experience of personal involvement in a system or environment so that persons feel themselves to be an integral part of that system or environment” (p. 173). The definition fits nicely into Tinto’s model as Tinto (1987) conceptualized a student’s likelihood to persist on the student’s perception of how well they had integrated into the academic and social aspects of the institution. Defining sense of belonging and relating it to Tinto’s model provides the conceptual framework that links student sense of belonging to student persistence. This connection forms the basis of the study conducted by Hoffman et al. (2002) to determine if first-year learning communities increase student sense of belonging. Specifically, the greater a student’s sense of belonging at an institution, the more likely the student will remain at the college (Hoffman et al., 2002). For this reason, Hoffman et al. created and refined the sense of belonging scale (SBS), which will be used in this study. The process for creating this scale will be described later in this chapter when survey instruments to assess student attitudes and behaviors are explored.

The SBS was used by Hoffman et al. (2002) to analyze the differences between groups in perceived peer support, perceived faculty academic support/comfort, classroom comfort, perceived isolation, and perceived empathetic faculty understanding. The two groups being studied were students in learning communities, and students who were not. The SBS was distributed to students across 17 sections of a general psychology course, and only responses from students in their first year of college were used in the analysis. The results of the study showed higher levels on the SBS from students in learning communities in all five factors. The researchers concluded based on the SBS that learning communities facilitated the development of relationships that integrated the participants into both the social and academic aspects of the

institutions by allowing for greater levels of interaction among peers and with faculty. Based on these findings, the number of learning communities at the University of Rhode Island has doubled since this study was conducted, and the SBS continues to be administered in first-year seminar courses.

Evaluating Courses to Study Students Attitudes

Positive and negative student attitudes about a course do not necessarily reflect the amount of learning that has occurred (Biner, 1993). However, as Biner (1993) suggests, there should be a systematic review process in place to gauge student attitudes about courses. For the purposes of this study, the researcher is most interested in student attitudes about their sense of fit within the college system after taking a course, be it hybrid or traditional. Looking at attitudes that influence persistence is important to do at a course level, Barefoot (2004) points out. The perception in higher education is that matters related to retention are administrative in nature, and faculty are too often relieved of any responsibility to relate their practices in the classroom to matters of students persistence. The challenge when attempting to examine a population of students in hybrid and traditional courses and perceptions of their sense of integration into the social and academic aspects of the institution is finding an instrument that captures the attitudes and experiences of both sets of students.

Evaluating Distance Education Courses: History and Context

While distance education traces back to correspondence via mail, literature on the evaluation of online courses as we know them today often cites the evaluation of televised courses. Biner (1993) recognized the necessity to evaluate courses delivered via closed circuit television as it was a growing medium in the early 1990s and the high cost of implementing and maintaining televised courses required some data to show they could be effective. There are

comparisons to be made to the online medium, as it is experiencing widespread growth, and there is also a critical need for evaluation (Allen & Seaman, 2007). Through a four-step process, Biner (1993) surveyed graduate and undergraduate students enrolled in televised courses to determine factors that could potentially affect the quality of televised courses. The four step process Biner employed has been the basis for the creation of other survey instruments to evaluate online courses (Roberts et al., 2005).

Biner concluded that there were three factors that determined student's attitudes about the quality of televised course: instructor/instruction, technological, and management/coordination aspects. While the latter factor is a product of the technology at the time, as the medium of televised courses didn't always allow for smooth distribution of course materials, the two former factors still have relevance to the evaluation of distance learning courses today. Technical aspects of online courses are evaluated using the quality matters rubric mentioned earlier in this chapter. The instructional/instructor aspects centered on instructor availability and sense of belonging to the classroom community, which are factors in the survey instrument used for this study.

The Distance Learning Environments Survey

Previously, hybrid courses at the Abington College were evaluated using DELES, the Distance Education Learning Environment Survey that was developed to evaluate the effectiveness of various online learning environments by assessing student attitudes (Walker & Fraser, 2005). As Walker & Fraser (2005) point out, many online courses attempt to replicate the same kind of instruction that typically occurs in the traditional classroom, which is the same didactic model used by the ancient Greeks. As mentioned previously in this chapter, successful online teaching is a result of a new paradigm that requires higher levels of interactivity, and

instructors take on new roles (Palloff & Pratt, 1999). The challenge for administrators and instructors then becomes determining if this new paradigm has been achieved in an online course. The DELES seeks to assess the qualities of an online learning environment in a course and the design and execution of that course. There is a definitely a need for such a tool to ensure the needs of the students are being met and to create the highest quality learning experience (Howland & Moore, 2002). Furthermore, in addition to various learner characteristics, the environment in which a student learns in can explain variances in student outcomes (Walker & Fraser, 2005). The environment and interactions within that environment have a tremendous impact on the experience for the students including aspects of community structure and instructional approach as well as Tinto's model and Astin's theory. The DELES seeks to evaluate environment for the online learning environment in a course.

Additionally, the DELES was used in a study of the effectiveness of online graduate courses at another university (Wickersham & McGee, 2008). Wickersham & McGee (2008) were interested in the DELES to evaluate both online instruction and the design of the course itself. In this study both the instructor and students completed the DELES three times during the semester. The goal of this process was to provide the instructor with insight into the student experience of the online course and to provide information about the instructor's perceptions of the course compared with that of the students.

The scale for the DELES was created and refined by Walker & Frasier (2005) in a three-stage process involving polling undergraduate, graduate, and doctoral students in online courses. After tests for reliability, validity, and a factor analysis were conducted, a refined 34-item version of the DELES was developed that included six factors. The factors were student

interaction and collaboration, instructor support, personal relevance, authentic learning, student autonomy, and active learning.

Walker & Frasier in their study concluded that student interaction and collaboration are important, but personal relevance with regard to the subject matter and how authentically it is addressed by the instructor all play key roles in influencing student attitudes about the quality of the online instruction they receive. The DELES was designed to assess a growing learning environment in higher education, the online learning environment, for which an instrument had not previously existed. The DELES has since become a widely cited survey instrument and has been used at the Abington College to evaluate the effectiveness of hybrid course offerings.

The researcher for this study had originally considered using this instrument to compare student attitudes about the online learning environment in hybrid courses and the traditional classroom environment. However, it was decided that since this instrument was written specifically to evaluate online courses, an instrument that was neutral in terms of course modality would be a better option for this study. The rationale for this decision was also the case with several other instruments used to study online and blended courses. Instruments such as the collaborative learning, social presence, and satisfaction scale contain a component for evaluating the technical aspects of a course, which would obviously not apply to a traditional course (So & Brush, 2008).

Evaluating the Online Learning Environment

Evaluating an online course in comparison to a traditional course represents a significant challenge. It can be very difficult to find a survey instrument that would consistently rate the quality of both modalities because online courses are significantly impacted by the delivery methods employed (Roberts et al., 2005). In other words, at the Abington College, the delivery

method for hybrid courses is the ANGEL LMS for the online portions of the course. Evaluating the course would in some measurable way would be an evaluation of ANGEL as well. In the case of ANGEL, it is an older LMS reaching its end of life. It was for this reason that the researcher chose to evaluate student attitudes as they relate to the conceptual framework of student persistence as a result of the experience of being a student in a hybrid course, rather than attempting to evaluate the course itself against a course taught in a traditional modality.

When one examines survey instruments to evaluate online courses, however, some of the same themes from Tinto's model and Astin's theory emerge. Roberts et al. developed an instrument to evaluate online courses using the same four-step process used in Biner's development of a survey instrument for televised courses. The instrument included nine dimensions, and the first two are learner-instructor interaction and learner-learning interaction, which represent the academic and social aspects of Tinto's model. The kinds of feelings and attitudes based on student interaction with instructors and peers is a frequent measure found in the literature to evaluate factors related to course satisfaction and student persistence.

Other Considerations

Another consideration for a survey instrument for this study was Rovai's (2002a) classroom community scale. The researcher for this study is interested in the effectiveness of the classroom community in the College's hybrid courses, which the classroom community scale measures. Like the SBS, the classroom community scale does measure connectedness which fits into Tinto's model. However, it lacks clearly defined items that relate to the sense of fit with the academic aspects of the institution. Additionally, the scale was developed for graduate courses, and Rovai concludes it is an efficient instrument to assess the graduate students' sense of community. There are no graduate course offerings at the Abington College.

Additionally the researcher for this study is interested in factors relating to persistence in undergraduate students. An effective scale for graduate students' sense of community within their courses may not be transferable to the undergraduate experience. For the purposes of this study, it is essential for the researcher to use a scale that captures student attitudes about their acclimation to both the academic and social aspects of the college in accordance with Tinto's model.

The Sense of Belonging Scale

The sense of belonging scale was created by Hoffman et al. (2002) in order to assess sense of belonging as it relates to Astin's theory and Tinto's model. Specifically the scale investigates the relationship between students and faculty as well as students and peers. Examining both the social and academic relationships can determine the student's perceived sense of fit into both institutional aspects as both are critical in Tinto's model of student persistence. Hoffman et al. (2002) began developing the scale through qualitative investigation with select focus groups from the freshman class at the University of Rhode Island. Questions were asked to examine the perceptual and behavioral qualities of the student's collegiate experience. The students were asked about their relationships with their peers, experiences with faculty, participation in campus activities, challenges encountered in their first year of college, satisfaction with the university, and intention to persist.

From qualitative data analysis and coding several factors emerged that were important to student-peer relationships and student-faculty relationships. Factors that emerged in student-peer relationships included perceptions of social and academic support from peers as well as comfort with peers in the classroom environment. Factors that emerged from student-faculty relationships

included perception of faculty as compassionate/humane, perceived as being valued by faculty, comfort with faculty, and perceived faculty support.

From these responses the sense of belonging scale (SBS) was written as a three-part survey. The first part asks the participants for basic demographic information, and the following two parts contained 50 items related to student-peer and student-faculty relationships. These items required a response of either completely true, mostly true, equally true/untrue, mostly untrue, or completely untrue. Respondents were asked to think carefully about each item and respond based on their experiences in the current academic year. Each item was analyzed using an independent samples t test between students who were in learning communities and students who were not, with the alpha set at .05. Of the 50 items, 47 resulted in significant differences between the two groups. The scale was then refined through an exploratory analysis.

Hoffman et al. (2002) were able to refine the scale to 26 items, which mostly reflected student sense of belonging based on student-peer and student-faculty measures. From this scale, five dimensions were identified: perceived peer support, perceived faculty academic support/comfort, classroom comfort, perceived isolation, and perceived empathetic faculty understanding.

The SBS will be the survey instrument for this study to examine the perception of the students in hybrid and traditional classes to study their sense of belonging, and the differences, if any, between the two groups. The five factors described above will be used in this study as well along with the item on student satisfaction that appeared in the original SBS.

Student Satisfaction

Frequent interaction between students and faculty is a stronger indicator of satisfaction than any other student or institutional characteristic (Astin, 1984). One of the advantages of the

online learning environment discussed earlier is that it allows for such frequent interaction. A component of the quality assurances standards stressed in the faculty development program at the Abington College is the concept of prompt and personalized feedback to the students. Therefore, it stands to reason that hybrid courses predicated on these concepts should foster more frequent interaction between students and faculty.

The University of Central Florida, which is one of the leading institutions in online and blended courses, reported that 83% of students who took online courses were satisfied with their academic program, and their students indicated “replacing at least a portion of classroom time with online instruction provides them with the opportunity to accommodate their family, work, and academic lives” (Moskal, Dziuban, Upchurch, Hartman, & Truman, 2006, p. 28). At a nonresidential campus, where students need to make similar accommodations for factors such as work or family, the researcher is interested if student attitudes about replacing portions of classroom instruction with online instruction would provide similar results at the Abington College.

These qualities provide the rationale for examining satisfaction as a secondary dependent variable in this study. The original version of the SBS had satisfaction as a dependent variable, and the factor will be added back in to the 26-item SBS for the purposes of this study to analyze the secondary dependent variable of student satisfaction.

Student Evaluations

While some have argued that student evaluations of courses are not accurate, high correlations exist between the ratings students give to courses and those from administrators and peers (Felder, 1992). Student satisfaction, and other perceptions as a result of taking a course represent a perceived value on the part of the student in terms of their overall educational

experience (Astin, 1993). Gauging the attitudes of students is particularly important in courses with an online component, as attrition rates have been higher in online courses versus traditional courses (Bolliger & Wasilik, 2012). Student feedback can provide valuable data about the effectiveness of a course and give administrators insight on whether to expand certain kinds of offerings such as online or partially online courses. For example, a study conducted by Bolliger and Wasilik (2012) revealed that 92.5% of students taking online courses would enroll in another online course. Student ratings provide a valid and reliable assessment of course and instructor effectiveness. It was on this basis along with the conceptual framework explored in this chapter that it was decided that measuring student attitudes on hybrid and traditional courses would provide the best source of data for this study.

The Role of Demographics

Four demographic factors from the SBS will be used to conduct an exploratory analysis: class standing, gender, race, and age. In reviewing the literature, demographic factors have had some bearing on studies of student behaviors and attitudes toward their academic experience. Specifically, demographic factors can influence perceived levels of satisfaction in online courses (Bolliger & Wasilik, 2012).

In a study of student sense of community in asynchronous learning networks, Rovai (2002a) conducted independent samples t tests to explore differences in gender in their responses to the classroom community scale. Female respondents showed statistically significant higher levels of connectedness and cognitive learning. Rovai in his concluding remarks of the study stated the data suggested that female students felt more connected to the virtual classroom community than their male counterparts. However, the relationship was admittedly weak in the study. Be that as it may, these findings suggest support for theories of differences in gender in

adult learning theory, which differentiates communication patterns among men and women (Belenky, 1997). In the theory developed by Belenky (1997), men typically utilize an independent voice, and women typically utilize a connected voice, which is centered on relational communication (Belenky, 1997). It should be pointed out that the original study using the SBS collected data on gender but did not indicate an analysis was conducted to determine what difference, if any, existed between the groups. Similarly, Morrow & Ackerman (2012) only reported out the percentage of female and male participants and did not report any analysis conducted to measure differences between groups. This study will conduct such an analysis to determine if there are statistically significant differences between gender groups.

Analysis also will be conducted based on class standing to determine if there are differences among freshmen, sophomores, juniors, and seniors in terms of their response to the SBS. Tinto's (1987) model as previously discussed in this chapter is predicated on how students acclimate socially and academically to the collegiate environment. Tinto (1997) notes that student attrition is most common in the first year, and the degree a student is involved in the social and academic aspects of the institution matters the most in the first year. Tinto (1996) reported that over half of all students who do not persist at a college or university, leave prior to their second year. Similarly, retention efforts at the Abington College have centered on first and second year students. Determining what differences, if any, exist among students in their sense of belonging to the institution based on class standing could yield valuable data.

Another demographic factor that will be examined is race. In a study of student sense of community in asynchronous learning networks, Rovai (2002a) found that race was not a significant factor. Rovai predicted there would be no statistically significant differences among members of different ethnic groups in their perceived sense of community and cognitive learning

in an online environment. However, this study will explore the blended learning environment, and the difference in modality could yield a different result in the data analysis.

Age can be a factor in the attitudes and experiences of younger learners in hybrid courses because hybrid courses tend to be constructive in nature (Wickersham & McGee, 2008). Constructive learning can be challenging for younger, less mature learners because it tends to be active in nature as opposed to the traditional didactic models of instruction that only require the student to listen passively to the instructor's lecture (Wickersham & McGee, 2008). This adjustment often comes with experiences, as the more a student encounters an active learning environment, the more likely they are to grow accustomed to the instructor as a *guide on the side* as opposed to a *sage on the stage* (Richardson & Newby, 2006, p. 32).

Additionally, in a study conducted to investigate the role of student cognitive engagement in online learning, it was discovered that age was a significant factor (Richardson & Newby, 2006). In that study, Richardson & Newby (2006) found that younger students were more likely to only meet minimum requirements in online courses. Younger college students as previously explored in this chapter also have the additional challenge of acclimating to the social and academic aspects of the institution (Tinto, 1987). For these reasons, the researcher will explore the relationship, if any, that exists between student's age and sense of belonging and satisfaction.

Summary

This study is predicated on Tinto's model as a theoretical framework to explore the impact of community-based hybrid courses on student sense of belonging and satisfaction. Research on the impact of online and partially online course offerings can contribute greatly to the body of knowledge as the demand for online course offerings is increasing year by year as is the number of these course offerings (Allen & Seaman, 2010). As online learning has become a

greater presence in higher education, research about best practices for online teaching and course design has likewise grown. The growth in online learning in higher education has created a paradigm shift for instructors as they make the transition to teaching in the online learning environment. The model of the instructor as the *sage on the stage* is dated and in online courses the instructor must instead embrace the role of the *guide on the side* (Richardson & Newby, 2006, p. 32). In other words, the old model of lecture-based instruction, which is the same didactic model of instruction used by the ancient Greeks, does not make sense in the online learning environment (Walker & Frasier, 2005). The creation of a successful online learning environment requires the building of community and fostering meaningful interaction among the learners (Palloff & Pratt, 1999).

Online learning has grown in popularity starting with a surge during the dotcom bubble of the 1990s and continuing in the aftermath of the Great Recession of 2008 (Allen & Seaman, 2010; Hafner, 2002). Credibility for the modality of online learning was solidified in the minds of many with the finding that there was no significant difference in learning outcomes between online and traditional students (Russell, 1999). Out of these conditions hybrid courses gained a great deal of popularity when a meta-analysis commissioned by the U.S. Department of Education concluded that supplementing face-to-face instruction with online learning produced stronger learning outcomes than traditional instruction with no online component (Means et al., 2009). The finding by Means et al. was also confirmed by a study conducted by the University of Central Florida, one of the largest adopters of the hybrid course format. It reported that students taking courses in the hybrid format achieved at a higher level than their traditional counterparts (Dziuban & Moskal, 2011). While learning outcomes in online and hybrid courses

have been studied, effects of these types of courses on other aspects of campus life, such as student persistence have yet to be thoroughly explored.

One of the most cited models of student persistence is Tinto's (1987) model, in which student persistence is predicated on the student's perception of their acclimation to the social and academic aspects of the institution. The sense of fit from Tinto's model is also referred to as sense of belonging (Hoffman et al., 2002). To measure student sense of belonging Hoffman et al. (2002) developed the sense of belonging scale (SBS) in order to investigate the differences from students who participated in first-year learning communities and those who did not. The findings of this study concluded that students who participated in first-year learning communities did exhibit greater levels of sense of belonging than students who did not. This study will use the SBS to compare sense of belonging in students who take community-based hybrid courses and those who do not.

Hybrid courses differ from traditional courses in that they should be highly interactive and community-based. The high degree of interactivity is consistent with Astin's (1984) theory of involvement, which stresses the need to elicit high levels of student effort and expenditure of effort to achieve desirable learning outcomes. Additionally, Astin makes the case for finding more opportunities for meaningful interaction between instructors and students. Hybrid courses, with their community approach and high degree of interactivity, can provide such opportunities.

While professors in a traditional modality may have found comfort and success with lecture-based classes, the online learning environment requires the building of community and fostering meaningful interaction among the learners (Palloff & Pratt, 1999). To assist instructors at the Abington College with making the transition to what is often a new form of instruction for them, a three-week professional development course offering was developed. The course uses

the community-based model of Palloff & Pratt (1999) as its theoretical framework to encourage faculty to create conditions in their hybrid courses where rich interactions among the students can occur as well as opportunities for students to learn as much or more from each other than from the instructor or texts.

To determine if efforts in designing meaningful online learning communities that supplement traditional classroom instruction are successful, obtaining data from students is fundamental. Biner (1993) suggests a systematic review process to gauge students' attitudes about their course experiences. Several instruments have been developed to determine the effectiveness of the design of an online learning environment and student satisfaction with online and blended courses. However, there is a lack of research in comparing the modalities to determine if course delivery impacts student sense of belonging at an institution.

The researcher has used this conceptual framework to create a methodology explained in chapter three in order to attempt to investigate the relationship between course modality and sense of belonging.

Chapter 3: Research Methodology

Overview

This study will focus on the impact of community aspects of hybrid courses at the Abington College of the Pennsylvania State University and the potential impact on student persistence and satisfaction. More specifically, this study will look at what impact, if any, community-based hybrid course offerings have on sense of belonging to the greater college community. The examination of the impact on sense of belonging is based on Tinto's (1997) model of student persistence, which is predicated on student transition into the academic and social aspects of the college community. Ultimately, this study will measure a student's sense of fit into these aspects based on Tinto's model using the SBS survey instrument. In addition to the 26-item SBS, two question sets will be added. The first new question set will gather demographic information. A second item specific to satisfaction with the Abington College will be added to gather information on overall student satisfaction with the college. The item on satisfaction appeared on the original version of the SBS.

This study will attempt to answer the following research question: Do students who take hybrid course offerings at a nonresidential campus exhibit increased levels of satisfaction and sense of belonging? The population for this study will consist of students at the Abington College enrolled in a hybrid course and students taking the same courses in a traditional modality. The study will explore several demographic factors and how those factors relate to sense of belonging and satisfaction at a nonresidential campus.

This chapter will outline the methodology for this study. The rationale for conducting this study, its contribution to the body of knowledge, and a thorough explanation of the steps that will be taken to assure validity and reliability will be explained. The setting for the study will be described as well as the population that will be sampled. This study will use a survey instrument

to collect the data. The sampling and data collection procedures will be detailed along with a thorough description of the data management and analysis.

This study is designed to address the issue of student persistence in higher education along with the potential impact of hybrid courses on student sense of connectedness with an institution along with their overall satisfaction. Based upon Tinto's (1997) model of student persistence, a student's perception about their sense of fit with an institution can have a significant impact on their intention to remain at an institution or not. Sense of fit will be quantified using the sense of belonging scale developed by Hoffman et al. (2002). The sense of belonging scale was used in a study to determine if learning communities had an impact on a student's perceived sense of fit in accordance with Tinto's (1997) model. The study concluded that learning communities do have a positive impact on sense of belonging with the institution.

This study will use the same survey instrument to determine if community-based hybrid courses also can have a positive impact on student sense of belonging at the Abington College, and if students enrolled in these course offerings exhibit greater levels of sense of belonging and satisfaction than students in traditional courses.

Research Design

The researcher chose a quantitative design for this study to establish a relationship between the independent variables and the dependent variables of student satisfaction and student sense of belonging. The independent variables that will be used in this study are gender, age, race, class standing, GPA (self-reported), marital status, number of children, employment status, number of hours worked per week, and number of hybrid courses taken.

The researcher through the data analysis will attempt to establish a relationship between these independent variables and student sense of belonging and satisfaction in an effort to

determine if students taking hybrid courses exhibit greater levels of sense of belonging and satisfaction. This study will attempt to identify factors that influence an outcome, which is best accomplished through a quantitative design (Creswell, 2013).

Specifically this study seeks to address the problem of student persistence. Previous studies have indicated that a significant factor in student persistence is the student's perception of their own sense of fit into the academic and social aspects of the institution (Tinto, 1987). Building upon this theoretical framework, a study was conducted using the Sense of Belonging Scale (SBS) to determine if learning communities have a positive impact on student sense of belonging (Morrow & Ackermann, 2012). This is a comparative study and will use the SBS along with several questions to establish demographic characteristics to identify the factors that influence sense of belonging and satisfaction.

The researcher through the data analysis will attempt to establish a relationship between the independent variables employed in the study and student sense of belonging and satisfaction in an effort to determine if students taking hybrid courses exhibit greater levels of sense of belonging and satisfaction. The analysis will not only explore the course modality students are enrolled in, but also several demographic factors. The analysis will attempt to establish whether any, or all of these factors impact levels of satisfaction and sense of belonging.

Setting

The Abington College of the Pennsylvania State University is a small nonresidential campus located in the suburbs of Philadelphia. Unlike many other commonwealth campuses in the Penn State system, the Abington College is a four-year degree issuing institution. Unlike many of its counterparts within the Penn State system, it has no residence halls. For this reason, the campus attracts students from the greater Philadelphia area, many of whom work at least 20

hours a week and contribute to their family's household incomes. According to the Office of Admissions, 40% of the student body is Pell Grant-eligible (personal communication from C. Walters, September 15th, 2013). The total student enrollment as of fall of 2013 was just over 4,200 students, with 121 full-time faculty, and just over 100 adjunct faculty (source: Penn State Abington Office of Academic Affairs).

In response to the administration's desire for faculty support in the areas of LMS support and hybrid course development, an instructional design specialist was hired in the summer of 2008. Within a year, hybrid courses were being developed and the offerings were added to the course catalogue in the summer of 2010. By the summer of 2014, the Center for Teaching and Learning was established to not only develop these hybrid course offerings, but also to evaluate their effectiveness and offer professional development for faculty who wished to teach them. By fall 2014, there were 21 hybrid courses offered at the Abington College.

This study will focus on the 11 hybrid courses being offered in the fall 2014 at the Abington College that also had a traditional version of the course being offered simultaneously. The researcher wanted to include a counterpart for every course being taught in a traditional modality to establish a baseline for comparison. In choosing a counterpart, in some cases the researcher had multiple courses sections to choose from for inclusion. For example, Comm 150, an introduction to cinema class, is being offered as a hybrid and is included in this study. Two sections of the same course are being offered in the traditional modality. To try to keep the sample population comparable, when faced with the decision of which traditional section to include, the researcher chose the section that was closer in size. For example in the case of Comm 150, the hybrid section of the course has 29 students enrolled in it. Of the two traditional

sections of Comm 150, the one with 31 students was chosen for inclusion over the other because it more closely matched the hybrid version of the course in terms of class size.

The same selection process was used for the other 10 traditional course sections that were chosen for inclusion in this study. It should also be noted that the researcher for this study excluded 10 hybrid course sections because there was no traditional version of the course being offered at the college in the same semester. In other words, the students enrolled in those course sections had no choice in modality, and therefore had to take the hybrid version of the course. The researcher believed this to be a significant distinction, and therefore excluded those courses from this study.

It should also be noted that 16 individual faculty members teach the 22 courses involved in this study. Two courses in this study, a business and a physics course, have two hybrid sections. The same instructor teaches both of these multiple-course sections respectively (one instructor for both hybrid physics courses, one for both hybrid business courses). The same is true for the counterpart traditional courses, as the same instructor teaches both sections of the traditional course offering. However, it is a different instructor than the faculty member teaching the hybrid sections of the course.

To clarify, two sections of a hybrid business course are included in the study, both taught by Professor X. Two sections of the traditional version of the same business course are also included in the study, both taught by Professor Y. There are also 2 instructors teaching both the hybrid and traditional versions of the course. An introduction to nutrition class has the same instructor teaching the hybrid and the traditional versions. Likewise, an organizational communication course has the same instructor teaching both the hybrid and traditional sections.

All instructors teaching hybrid courses included in this study have undergone the required faculty development for online teaching and hybrid course development that emphasizes the community approach discussed earlier in this paper. However, since two of these instructors are also teaching traditional courses included in this study, there are two instructors from the traditional courses that also have undergone this faculty development. One other instructor teaching a traditional section involved in this also has taken the faculty development course but has yet to teach a hybrid course. All of the instructors teaching hybrid courses have taught the course as a hybrid previously. All of the instructors teaching the traditional courses included in this study have taught their courses before with the exception of one, who is new to the College. With this one exception, all faculty included in this study have been teaching these courses for over two years.

Population, Sample, and Sampling Procedures

The population for this study will be students enrolled in hybrid courses and corresponding traditional courses at the Abington College of Penn during the fall semester of 2014. Of the 21 hybrid course offerings at the Abington College in the fall of 2014, 11 of them have a corresponding traditional section, and the students enrolled in these 22 courses will be the subjects that will be asked to take part in this study. It was decided by the researcher to only use these courses to draw from so that each hybrid course would have a traditional course to use as a baseline for comparison. The number of students enrolled in the 11 hybrid course sections is 220, while the number of students enrolled in the 11 traditional sections is 261, for a total target population of 481 students. The researcher will obtain the class lists for these courses from the college registrar, which include the email addresses of the students enrolled. An email requesting participation in the study, along with the consent form, and a link to the survey instrument will

be sent to the entire target population. A copy of the consent form will accompany the email, and there will be an additional copy of the consent form the participants will be asked to sign electronically on the survey link. Specifically, the participant will receive an email asking for their participation with the consent form attached. Should the participant decide to take part in this study, they will be directed to a link. There they will be asked to sign the consent form electronically, and then they will be directed to the first series of items on the survey. The sample for this study will be students from the target population that sign the consent form and answer the survey.

Instrumentation

The survey instrument used in this study will be the sense of belonging scale (Hoffman et al., 2002). The instrument is adopted from Hoffman et al.'s study (2002) to measure student perception of their own sense of fit with the culture of the college or university they are attending. It contains four demographic questions regarding age, gender, race, and class standing followed by 26 scaled items for respondents to answer. The researcher for this study will add demographic questions to the instrument to determine GPA (which will be self-reported), marital status, number of children, employment status, number of hours worked per week, and number of hybrid courses taken. The researcher is making the survey instrument available online for the participants of this study. The researcher contacted the dean of University College and Special Programs at the University of Rhode Island for permission to use the instrument for this study via email. The dean, Dr. Jayne Richmond, responded to the researcher via email and granted her permission for the use of this instrument in this study.

The SBS developed by Hoffman et al. (2002), is a published scientific scale that has been validated. The original researchers ran a factor analysis to ensure validity, reliability, and to

determine the most effective items for the final version of the scale. The items in the scale were obtained through a thorough review of the literature, qualitative research conducted on the campus of the University of Rhode Island with first-year students, and finally a review stage where the research team evaluated the items on the scale for relevancy, clarity, and consciousness.

In this process the scale was refined from 85 items down to 26. The original 85-item scale contained a 50-item measure investigating student/peer relationships, and a 35-item measure examining student/faculty relationships. There were four underlying dimensions to the student/peer relationship portion: perceived classroom comfort, isolation, academic support, and social support. Those four factors explained 68.5 percent of the variance among the set of 50 items. There were three underlying dimensions among the 35 items examining student/faculty relationships: empathetic understanding, perceived faculty academic support/comfort, and perceived faculty social support/comfort. These three factors explained 73.3% of the variance among the 35 items.

After the researchers conducted a final analysis, the SBS was scaled down to 26 items, with 16 items measuring student/peer interaction and 10 for student/faculty interaction. The finalized version of the SBS contained five factors: perceptions of peer support, faculty support/comfort, classroom comfort, and isolation as well as empathetic faculty understanding.

The original study that utilized the SBS conducted by Hoffman et al. (2002) attempted to determine if first-year seminar students who were in learning communities exhibited a greater sense of belonging than students who were enrolled in stand-alone freshmen seminar courses. The researchers conducted a survey among the target population of students enrolled in first-year seminar courses. Students in a learning community had an *n* of 69, while students in stand alone

seminar courses without being part of a learning community had an n of 136. The researchers used independent sample t tests to compare the two groups with the alpha set for .05. The researchers calculated the mean, standard deviation, t values, and significance levels for the responses between the two groups. It was determined that students in learning communities exhibited higher levels of belonging in all five factors of the SBS. This study has been cited 139 times since it was published in 2002.

Data Collection Procedures

This study will similarly use the SBS to compare the sense of belonging between students enrolled in community-based hybrid courses and students taking the same courses in a traditional modality. The SBS also contains a measure for student satisfaction, which will be compared between the two groups as well. The SBS will be typed up onto the survey tool that resides on the Abington College web servers. The survey tool has been used for several years by researchers at Penn State Abington for web-based surveys. It is a useful tool since participants are directed to the Penn State Abington website, and all data collected resides on the college's local servers. The survey tool on the Abington website eliminates the need for a third party vendor and greatly limits the number of individuals who have access to the survey and its data. The survey instrument also has the ability to send the email invitation to the participants and can send weekly reminders to those who have not yet responded to the invitation email.

The researcher will obtain a list of courses for the Fall 2014 semester in both the community-based hybrid format and a traditional modality. The researcher will then ask the college registrar to provide class lists for these courses. The class lists include the email addresses of every student. The researcher will then send an email with an introduction to the

study with a copy of the consent form, a request to participate, and a link to the consent form for the participant to sign electronically, followed by the online SBS.

At the end of the first week a reminder will be sent. Additional reminders will be sent at the end of the second week, and at the end of the third week (48 hours before the survey will close). The survey tool being used for this study will be set to close three weeks after the first email requesting participation is sent out. Once the survey period has ended, the link sent in the emails asking for participation will stop functioning, preventing any further data from being collected.

Each item on the survey has an individual code. For example, the first question in the first section is coded S1Q1. The coding feature is built into the survey tool and is helpful when the data is harvested and downloaded for analysis. All survey data will be downloaded to the researcher's computer after the end date for the survey and subsequently imported into SPSS.

Data Management

Once all of the data is downloaded to the researcher's computer, the IP addresses collected will be deleted from the downloaded data set. The IP addresses are the only personally identifiable information collected in the online SBS survey. The IP addresses are collected in order to send reminders to invitees who have not yet responded to the email invitation. The IP addresses will not be used in any way during the data analysis. Five years after the data is downloaded, the researcher will delete the data from the computer and the Abington web server.

Data Analysis

Once the data is downloaded, it will be imported into SPSS software for analysis. Each response code will be categorized into one of the previously mentioned five factors that comprise

the SBS (perceived peer support, perceived faculty support/comfort, perceived classroom comfort, perceived isolation, and empathetic faculty understanding) plus a factor for satisfaction.

While the original SBS was already vetted for validity and reliability, the researcher will run a new Chronbach's alpha reliability measure in SPSS to ensure internal reliability for this study. The Chronbach's alpha will determine if the individual items on the online SBS measure the same characteristic (in this case, student belonging). The Chronbach's alpha value will be calculated by SPSS, and the closer that value is to 1, will indicate how closely all of the items of the SBS are measuring for sense of belonging. Since the SBS is not being altered for this study, the alpha value should be high.

The researcher will also look at inter-item correlations. The researcher will be looking for values above .3 or .4 to ensure these items are properly correlated. If an item score is below .3 or negative, the researcher will isolate that item from the data set as it is not correlating with the other items and probably not measuring properly for sense of belonging. However, it must be stressed that this should not be the case, as the SBS is a vetted survey instrument that has been checked for reliability in previous studies.

The population for this study is extremely diverse. For this reason, and in an attempt to fully understand how various demographic factors may influence sense of belonging and satisfaction, a multiple regression analysis will be used to explore the relationship between the variables. The researcher will run a regression model for each of the factors in the data set. The five factors of the SBS are perceived peer support, perceived faculty support/comfort, perceived classroom comfort, perceived isolation, and empathetic faculty understanding, plus a factor for satisfaction. Therefore, the first regression will be run using a forced entry model with all of the independent variables (gender, age, race, class standing, GPA, marital status, number of children,

employment status, number of hours worked per week, and number of hybrid courses taken) and the dependent variable, perceived peer support. The alpha will be set to 0.05.

Once this analysis is run in the SPSS software, the output will reveal the n for the independent variables, as well as the mean, and standard deviations. The researcher will look first at a summary of the model. The summary will indicate the R^2 value, which will inform the researcher what percentage of the variance in the outcome variable is explained by the predictor variables, in this case the course modality, and the demographic factors that comprised the independent variables for this study.

The analysis will also include an analysis of variance. The researcher will examine the F statistic from the ANOVA to determine the extent of difference among the variables. The researcher will then examine B coefficients to determine which independent variables are the strongest predictors for the model. The researcher will then examine the P values for the independent variables to determine if the P value are significant at the .05 level. The P values will determine if there is a statistically significant difference between the students who take a hybrid course and students who take the course in a traditional modality. Additionally, the P values will determine what correlations, if any, exist among the other independent variables included in the study. The same process will be repeated for each of the other four factors of the SBS, with five more subsequent regression models. After this process is concluded, the P values of the six models will be used to determine if there is a statistically significant difference between the students in the hybrid course and students in the traditional modality,,differences among the demographic groups established for this study for any or all of the factors of the SBS and for student satisfaction.

Once this analysis is complete, the researcher will be able to determine if these demographic factors have a statistically significant impact on the overall sense of belonging and satisfaction. The demographic factors can provide valuable insight as to whether students of a certain gender, race, age, or class standing are more inclined to a certain course modality and if any of those groups exhibit statistically significant variances from other groups in terms of their sense of belonging and satisfaction. The analysis can also provide valuable insight into whether the flexibility of the hybrid modality can elicit a response for increased levels of sense of belonging and satisfaction in students who are married, have children, and work either on or off campus.

Using a correlation matrix in SPSS, the researcher will examine Pearson Correlation values and will attempt to determine the strength of the relationship between quantitative independent variables and sense of belonging and satisfaction. In particular, the researcher is interested in the number of hybrid courses taken, in relation to levels of sense of belonging and satisfaction. The Pearson correlation values can illustrate if there is a positive or negative relationship between the number of hybrid courses taken and sense of belonging and satisfaction. Similarly, Pearson correlation values can illustrate if there are positive or negative relationships between the other quantitative independent variables and the dependent variables in this study. Specifically, the researcher will examine the Pearson correlation values for age, GPA, number of hours worked, and number of children to determine if there is a positive or negative relationship between these values and sense of belonging and satisfaction.

Human Subject Considerations

This study will ask for participants from the target population of 481 students detailed in the section above. Class lists for these courses will be obtained from the college's registrar.

Every student in the target population will be contacted via email. The email will contain information about the purpose of the study and a link to the consent form and survey instrument. The subjects will be asked to sign the consent form and then complete an online survey. The online survey will be the sense of belonging scale. The researcher obtained permission from the publisher to use this survey instrument, and it will be unaltered and hosted on the college's web server for the participants to complete. While there are four demographic items that exist in the survey, no personally identifiable information will be collected other than IP addresses which will be discarded by the researcher when the data is downloaded from the server. Because the survey instrument and all collected data will be housed on the college's web server (as opposed to a third party vendor such as Survey Monkey), the data will be protected, and the risk of persons other than the researcher accessing the data will therefore be greatly minimized. Once the data has been collected, the researcher will download the results minus the IP addresses to a personal laptop for data analysis. The researcher will keep the laptop secured in a locked office, but it is important to note the data contains no information that will identify any of the participants.

Summary

This study will focus upon the impact of community-based hybrid courses on student sense of belonging at a nonresidential campus. This study uses Tinto's (1987) model of student persistence in which student persistence is significantly impacted by the transition a student makes into the social and academic aspects of an institution. The transition is predicated on the perceived sense of fit social and academically. The perceived sense of fit is also known as sense of belonging. It is the researcher's question that since hybrid courses at the Abington College require greater levels of interactivity than traditional courses, and since the design of the

college's hybrid courses is predicated on building communities of learners, will participants in these courses exhibit greater levels of sense of belonging on the campus?

To collect data in an attempt to answer this question, the researcher will use the Sense of Belonging Scale (SBS) as the survey instrument. It was developed and implemented previously by Hoffman et al. (2002) to determine if first-year learning communities increased student sense of belonging. The survey instrument will contain alterations mentioned previously in this chapter accounting for demographic variables with the addition of the item for satisfaction from the original version of the SBS and will be made available online through the Abington College's survey system.

The population for this study will be students enrolled in hybrid courses and corresponding traditional courses at the Abington College of Penn State University during the fall semester of 2014. Of the 21 hybrid course offerings at Abington in the fall of 2014, 11 of them have a corresponding traditional section. The students enrolled in these 22 courses will be the subjects who will be asked to take part in this study.

An email requesting participation in the study, along with the consent form, and a link to the survey instrument will be sent to the entire target population. A copy of the consent form will accompany the email, and there will be an additional copy of the consent form the participants will be asked to sign electronically on the survey link. Should the participant decide to take part in this study, they will be directed to the link. There, they will be asked to sign the consent form electronically, and then they will be directed to the first series of items on the survey. The sample for this study will be students from the target population that sign the consent form and answer the survey.

Data will be collected and managed through the Abington College web server. Once the survey close date arrives, the link sent to participants will stop functioning, and the data collection process will end. At this time the researcher will download all of the data collected for analysis.

The data will be analyzed using SPSS software. Each response code will be categorized into one of the previously mentioned five factors that comprise the SBS (perceived peer support, perceived faculty support/comfort, perceived classroom comfort, perceived isolation, and empathetic faculty understanding), and an additional factor for student satisfaction. While the original SBS was already vetted for validity and reliability, the researcher will run a new Chronbach's alpha reliability measure in SPSS to ensure internal reliability for this study. Each of the factors in the data set will be run through a multiple regression analysis. The alpha will be set to .05. In addition to exploring whether students enrolled in a hybrid course exhibit a greater levels of sense of belonging and satisfaction, an analysis will be conducted to determine what effect, if any, the demographic factors collected in the survey instrument have on sense of belonging and overall satisfaction.

Chapter 4: Presentation of Findings

Introduction

This study was designed to determine if students at a nonresidential campus exhibited greater levels of sense of belonging to the campus as well as greater degrees of satisfaction based on their enrollment in community-based hybrid courses. Student sense of belonging is an important student attitude to assess as it reflects an important element of the student persistence model developed by Vincent Tinto (1987). Tinto's model is predicated on academic and social integration into the university community. In this model, the student's own sense of fit into the academic and social aspects of the institution determines the level of success of the aforementioned integration. The perception of integration into the institution represents a sense of affiliation and identification within the campus community, known as a *sense of belonging* (Hoffman et al., 2002). The primary purpose of this study is to determine if course modality, specifically the enrollment in community-based hybrid courses, can influence student sense of belonging. The primary research question the study attempted to answer is: Do students who take hybrid course offerings at a nonresidential campus exhibit increased levels of sense of belonging and satisfaction?

The researcher utilized a quantitative design for this study to attempt to answer the previously stated research question. Previous studies such as the study conducted by Hoffman et al. (2002) have used quantitative methods to study students sense of belonging. Using Tinto's (1987) model of student persistence and Astin's (1984) theory of involvement as its conceptual framework, the Hoffman et al. study refined a survey instrument to quantitatively measure students sense of belonging called the Sense of Belonging Scale (SBS). The SBS was used in the study by Hoffman et al. to determine if first-year college students in learning communities exhibited greater levels of sense of belonging than students who did not participate in the

learning communities. The SBS consists of 26 items that ask participants to answer their agreement to each item on a five-point scale that ranges from completely true to completely untrue. The SBS consists of five subscales or factors: perceived peer support, perceived faculty support/comfort, perceived classroom comfort, perceived isolation, and empathetic faculty understanding. One of the earlier versions of the SBS contained an item on student satisfaction, which was reinserted into the SBS for this study in order to attempt to answer the second part of the research question about student satisfaction. The researcher obtained permission to use this scale from the dean of University College and Special Programs at the University of Rhode Island.

The finalized version of the SBS used for this study includes a series of demographic questions. While the original SBS asked students to indicate their age, gender, race, and class standing, the survey instrument for this study will also ask for GPA (self-reported), marital status, number of children, employment status, number of hours worked per week, and number of hybrid courses taken. The survey instrument for this study was distributed online to participants in the study.

Since the purpose of this study was to determine if students in community-based hybrid courses exhibited higher levels of sense of belonging and satisfaction on the SBS, all students enrolled in a hybrid course at Abington in the fall semester of 2014 were asked to participate. Additionally, students in the traditional versions of these courses were also asked to participate. In total, 11 hybrid courses were offered at Abington in fall 2014 that also had a comparable traditional section. Students from all 22 courses were emailed to ask for their participation in this study. The total population for this study was 481 students.

This chapter will review the results of the data analysis that was conducted from the participants responses to the online survey instrument as well as detail the findings yielded from the data analysis.

Response Rate

As previously stated, the total population for this study was 481 students. An email with the link to the survey instrument was emailed to all 481 students. A reminder was sent to students who did not respond to the original email after one week. After two weeks, another email was sent to participants who had not responded. After three weeks, a final email was sent to students who had not responded to previous emails informing them that they had 24 hours to participate in the survey before it closed. A total of 107 students elected to participate in the study for a total response rate of 22%.

Test for Reliability

The researcher first ran Chronbach's alpha reliability measure to ensure internal reliability. The alpha score came back as .918, indicating that 91.8% of the responses indicate internally consistent reliable variance. For factor 1, perceived peer support, the alpha score came back as .867, indicating that 86.7% of the responses indicate internally consistent reliable variance. For factor 2, perceived faculty support/comfort, the alpha score came back as .917, indicating that 91.7% of the responses indicate internally consistent reliable variance. For factor, 3 perceived classroom comfort, the alpha score came back as .957, indicating that 95.7% of the responses indicate internally consistent reliable variance. For factor 4, perceived isolation, the alpha score came back as .822, indicating that 82.2% of the responses indicate internally consistent reliable variance. For factor 5, empathetic faculty understanding, the alpha score came back as .917, indicating that 91.7% of the responses indicate internally consistent reliable

variance. As mentioned in the previous chapter, the researcher expected a high alpha score because this study was using a previously vetted survey instrument.

Demographic Data

As previously mentioned, the researcher added several items to the survey instrument to gather demographic information from the participants. These items ultimately would be analyzed to attempt to determine what, if any, effect these factors had on sense of belonging and satisfaction.

Of the 107 respondents, 55 were female (51.4%), 50 were male (47.6%), and two did not indicate their gender. Age ranged from 17 to 44 years old with the most frequent responses in the traditional 18-22 age bracket. Detailed data on age is as follows:

Table 1

Age Range of Participants

		Age			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	17	1	.9	1.0	1.0
	18	9	8.4	8.7	9.7
	19	29	27.1	28.2	37.9
	20	24	22.4	23.3	61.2
	21	19	17.8	18.4	79.6
	22	7	6.5	6.8	86.4
	23	5	4.7	4.9	91.3
	25	2	1.9	1.9	93.2
	26	1	.9	1.0	94.2
	27	1	.9	1.0	95.1
	29	1	.9	1.0	96.1
	31	1	.9	1.0	97.1
	32	1	.9	1.0	98.1
	39	1	.9	1.0	99.0
	44	1	.9	1.0	100.0
	Total	103	96.3	100.0	
Missing	System	4	3.7		
Total		107	100.0		

In regards to the course modality, 60 (56.1%) respondents were in the traditional version of the course, while 47 (43.9%) were in the hybrid version. When asked to indicate their race, 60% of the respondents indicated white/Caucasian, 8.6% indicated black/African American, 5.7% indicated Asian Indian, 15.2% indicated Asian, and 10.5% indicated other.

On the item asking for class standing, 14.2% of respondents were freshmen, 40.5% were sophomores, 28.3% were juniors, 14.2% were seniors, and 2.8% selected not applicable. The mean grade point average among respondents was 3.08 (this statistic was self-reported). The mean GPA among the students in the hybrid courses was 3.03, and 3.138 for the students in the traditional version of the course. With regards to the question on marital status, 88.8% of respondents indicated they were single, 6.5% indicated married, 1.9% indicated divorced, and 2.8% did not indicate a marital status. When asked how many children they had 98 respondents indicated zero, accounting for 91.6% percent of participants. Three respondents indicated having one child, or 2.8% of respondents, one (0.9%) respondent indicated having 2 children, and one (0.9%) respondent indicated having 3 children

Table 2

Chi Square for Students with Children and Gender

Gender * Children Crosstabulation

		Children				Total	
		0	1	2	3		
Gender	0	Count	47	1	1	1	50
		Expected Count	47.5	1.5	.5	.5	50.0
		% within Gender	94.0%	2.0%	2.0%	2.0%	100.0%
		% within Children	48.5%	33.3%	100.0%	100.0%	49.0%
		% of Total	46.1%	1.0%	1.0%	1.0%	49.0%
		1	Count	50	2	0	0
		Expected Count	49.5	1.5	.5	.5	52.0
		% within Gender	96.2%	3.8%	0.0%	0.0%	100.0%
		% within Children	51.5%	66.7%	0.0%	0.0%	51.0%
		% of Total	49.0%	2.0%	0.0%	0.0%	51.0%
Total		Count	97	3	1	1	102
		Expected Count	97.0	3.0	1.0	1.0	102.0
		% within Gender	95.1%	2.9%	1.0%	1.0%	100.0%
		% within Children	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	95.1%	2.9%	1.0%	1.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.388 ^a	3	.496
Likelihood Ratio	3.166	3	.367
Linear-by-Linear Association	1.113	1	.291
N of Valid Cases	102		

a. 6 cells (75.0%) have expected count less than 5. The minimum expected count is .49.

Note. Gender is represented with a 0 for males, and 1 for females.

With regard to employment status, 67.3% of participants had a job either on or off campus. The mean number of hours worked by the participants was 18.2. When asked how many hybrid courses a student had taken, 70.1% of participants indicated they had taken one or more hybrid courses at the Abington College. The distribution of students and the number of hybrid courses they have taken were as follows:

Table 3

Number of Hybrid Courses Taken by Participants

Hybrid Courses Taken					
	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	0	26	24.3	26.8	26.8
	1	42	39.3	43.3	70.1
	2	15	14.0	15.5	85.6
	3	5	4.7	5.2	90.7
	4	7	6.5	7.2	97.9
	6	1	.9	1.0	99.0
	7	1	.9	1.0	100.0
	Total	97	90.7	100.0	
Missing	System	10	9.3		
Total		107	100.0		

Charts for the demographic information for this study are as follows:

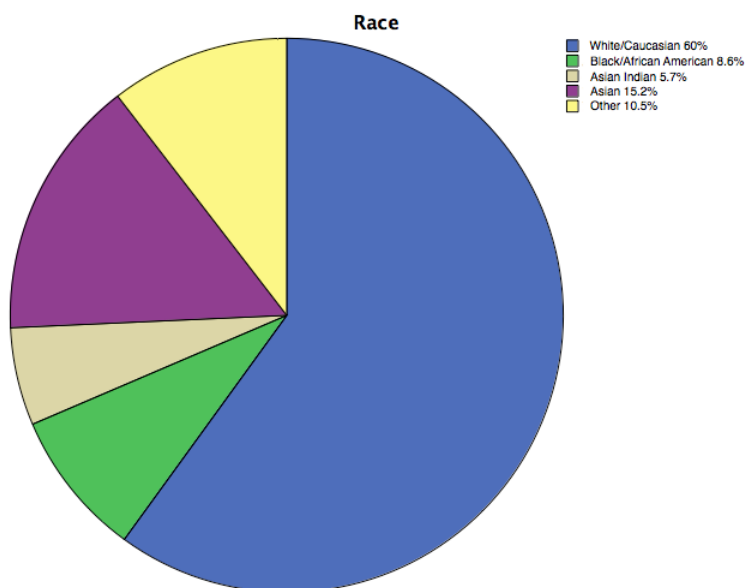


Figure 1. Racial demographics of participants by percentage.

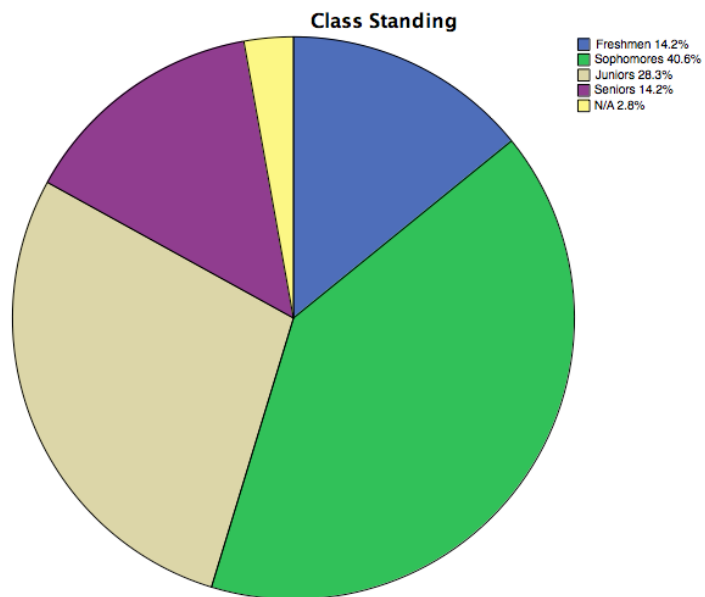


Figure 2. Class standing of participants by percentage.

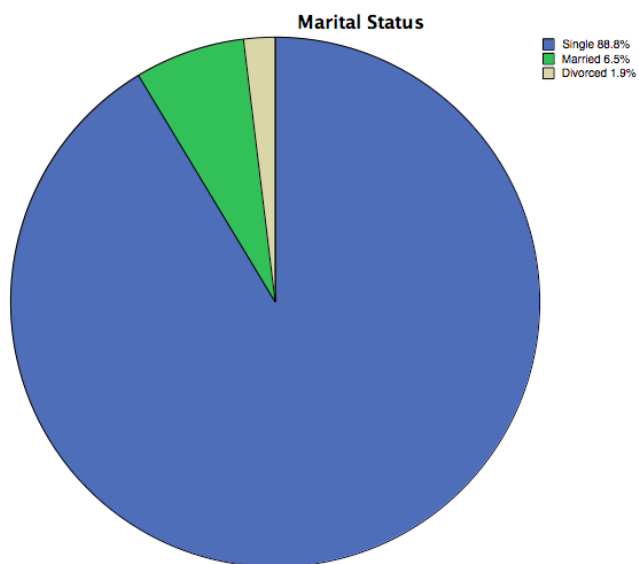


Figure 3. Marital status of participants by percentage.

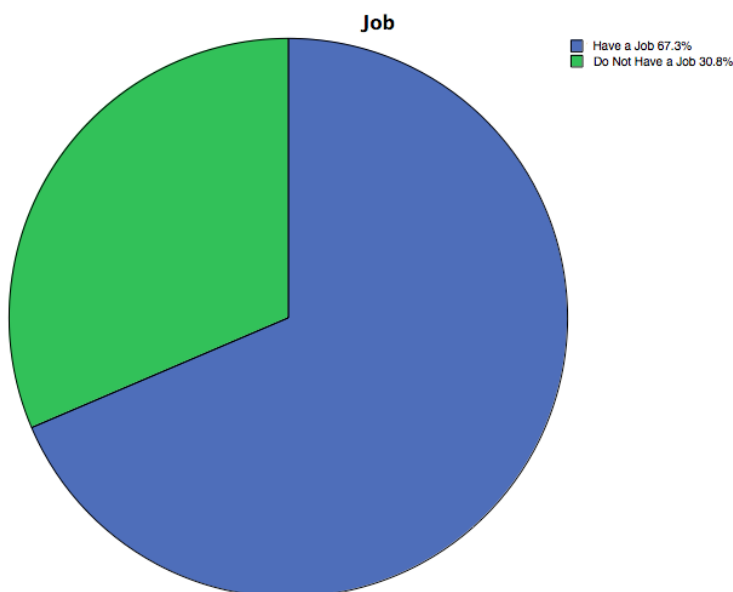


Figure 4. Employment status of participants by percentage.

Regression Analysis for Sense of Belonging and Satisfaction

As previously mentioned, the SBS consisted of five factors, and the researcher added an additional factor for satisfaction. The six factors were perceived peer support, perceived faculty support/comfort, perceived classroom comfort, perceived isolation, empathetic faculty understanding, and satisfaction. The researcher ran a regression analysis for each factor using the demographic information and course modality as the independent variables, and each factor as the dependent variable.

Perceived Peer Support

The first multiple regression considered the independent variables with the perceived peer support by the students. The first multiple regression was run using a forced entry model with all of the independent variables (gender, age, race, class standing, GPA, marital status, number of children, employment status, number of hours worked per week, and number of

hybrid courses taken), and the dependent variable as perceived peer support. The R square value was .223, which indicates that the model accounts for 22% of the total variability in responses.

Table 4

Model Summary of Regression Analysis for Perceived Peer Support

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.472 ^a	.223	.062	1.01235

a. Predictors: (Constant), Hybrid Courses Taken, Children, Job, GPA, Gender, Class Standing, Race, Modality, Marital Status, Hours Works, Age

The ANOVA for the overall model yielded an F statistic of 1.382, and a p value of .209, which was not significant at the .05 level.

Table 5

ANOVA for Perceived Peer Support

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.580	11	1.416	1.382	.209 ^b
	Residual	54.317	53	1.025		
	Total	69.897	64			

a. Dependent Variable: Subscale1

b. Predictors: (Constant), Hybrid Courses Taken, Children, Job, GPA, Gender, Class Standing, Race, Modality, Marital Status, Hours Works, Age

When examining the individual factors in the model, only course modality reached a significance level reaching conventional significance levels ($p=.019$). Looking more closely at the statistical difference between the hybrid students and non-hybrid students, the students in the traditional version of the course reported higher levels of perceived peer support.

Table 6

Mean Values for Perceived Peer Support among Hybrid Students -1 and Non-hybrid Students - 0

	Modality	N	Mean	Std. Deviation	Std. Error Mean
Subscale1	.00	56	3.3036	1.06356	.14212
	1.00	47	2.6763	.84712	.12356

The coefficients for the entire model are as follows:

Table 7

Coefficients for the Regression Analysis for Perceived Peer Support

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.648	2.462		.263	.793
	Modality	-.702	.290	-.336	-2.421	.019
	Age	.109	.129	.246	.846	.401
	Gender	-.165	.276	-.079	-.599	.552
	Race	.010	.060	.022	.168	.867
	Class Standing	-.006	.211	-.006	-.026	.979
	GPA	.258	.216	.157	1.196	.237
	Marital Status	.132	.251	.077	.525	.602
	Children	.058	.873	.015	.067	.947
	Job	-.498	.623	-.166	-.801	.427
	Hours Works	-.018	.018	-.199	-.972	.335
	Hybrid Courses Taken	-.011	.096	-.015	-.111	.912

a. Dependent Variable: Subscale1

Perceived Faculty Support/Comfort

The second multiple regression considered the independent variables with the perceived faculty support/comfort by the students. The regression was run using a forced entry model with all of the independent variables (gender, age, race, class standing, GPA, marital status, number of children, employment status, number of hours worked per week, and number of hybrid courses taken), and the dependent variable perceived faculty support/comfort. The R square value was .173, indicating that the model accounts for 22% of the total variability in responses.

Table 8

Model Summary for the Regression Analysis for Perceived Faculty Support/Comfort

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.416 ^a	.173	.002	1.10150

a. Predictors: (Constant), Hybrid Courses Taken, Children, Job, GPA, Gender, Class Standing, Race, Modality, Marital Status, HoursWorked, Age

The ANOVA for the overall model yielded an F statistic of 1.011 and a p value of .450, which was not significant at the .05 level.

Table 9

ANOVA for Perceived Faculty Support/comfort

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.490	11	1.226	1.011	.450 ^b
	Residual	64.305	53	1.213		
	Total	77.795	64			

a. Dependent Variable: Subscale2

b. Predictors: (Constant), Hybrid Courses Taken, Children, Job, GPA, Gender, Class Standing, Race, Modality, Marital Status, HoursWorked, Age

When examining the individual factors in the model only the independent variable of number of children yielded a significance level reaching conventional significance levels ($p=.031$). When examining the β value of -2.107, there is a negative relationship between number of children and perceived faculty support/comfort. The coefficients for the entire model are as follows:

Table 10

Coefficients for the Regression Analysis for Perceived Faculty Support/comfort

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.554	2.679		-.580	.564
	Modality	.224	.315	.102	.710	.481
	Age	.192	.141	.410	1.366	.178
	Gender	.062	.300	.028	.205	.838
	Race	.037	.065	.077	.566	.574
	Class Standing	-.117	.229	-.111	-.512	.611
	GPA	.291	.235	.168	1.242	.220
	Marital Status	.147	.273	.081	.539	.592
	Children	-2.107	.949	-.527	-2.219	.031
	Job	.572	.677	.181	.845	.402
	HoursWorked	.015	.020	.155	.737	.465
	Hybrid Courses Taken	-.099	.104	-.130	-.951	.346

a. Dependent Variable: Subscale2

Perceived Classroom Comfort

The third multiple regression considered the independent variables with the perceived classroom comfort of the students. The regression was run using a forced entry model with all of the independent variables (gender, age, race, class standing, GPA, marital status, number of children, employment status, number of hours worked per week, and number of hybrid courses taken), and the dependent variable perceived classroom comfort. The R square value was .135, which indicates that the model accounts for 13.5% of the total variability in responses.

Table 11

Model Summary for the Regression Analysis for Perceived Classroom Comfort

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.367 ^a	.135	-.045	1.18898

a. Predictors: (Constant), Hybrid Courses Taken, Children, Job, GPA, Gender, Class Standing, Race, Modality, Marital Status, HoursWorked, Age

The ANOVA for the overall model yielded an F statistic of .749 and a p value of .687, which was not significant at the .05 level.

Table 12

ANOVA for Perceived Classroom Comfort

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.647	11	1.059	.749	.687 ^b
	Residual	74.925	53	1.414		
	Total	86.571	64			

a. Dependent Variable: Subscale3

b. Predictors: (Constant), Hybrid Courses Taken, Children, Job, GPA, Gender, Class Standing, Race, Modality, Marital Status, HoursWorked, Age

When examining the Individual factors in the model only the independent variable of number of children yielded a significance level reaching conventional significance levels ($p=.019$). When examining the β value of -2.258 , there was a negative relationship between number of children and perceived classroom comfort. The coefficients for the entire model are as follows:

Table 13

Coefficients for the Regression Analysis for Perceived Classroom Comfort

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.327	2.892		-.459	.648
	Modality	.041	.341	.018	.120	.905
	Age	.230	.152	.466	1.516	.136
	Gender	-.082	.324	-.036	-.254	.800
	Race	-.045	.070	-.089	-.637	.527
	Class Standing	-.203	.248	-.182	-.819	.416
	GPA	.276	.253	.151	1.092	.280
	Marital Status	.173	.294	.091	.589	.558
	Children	-2.258	1.025	-.535	-2.203	.032
	Job	-.229	.731	-.069	-.313	.755
	HoursWorked	.003	.022	.030	.141	.888
	Hybrid Courses Taken	-.088	.112	-.110	-.781	.438

a. Dependent Variable: Subscale3

Perceived Isolation

The fourth multiple regression considered the independent variables with the perceived isolation of the students. The regression was run using a forced entry model with all of the independent variables (gender, age, race, class standing, GPA, marital status, number of children, employment status, number of hours worked per week, and number of hybrid courses taken), and the dependent variable perceived isolation. The R square value is .194, which indicates that the model accounts for 19% of the total variability in responses.

Table 14

Model Summary for the Regression Analysis for Perceived Isolation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.441 ^a	.194	.027	1.00001

a. Predictors: (Constant), Hybrid Courses Taken, Children, Job, GPA, Gender, Class Standing, Race, Modality, Marital Status, HoursWorked, Age

The ANOVA for the overall model yielded an F statistic of 1.163, and a p value of .334, which was not significant at the .05 level.

Table 15

ANOVA for Perceived Isolation

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.797	11	1.163	1.163	.334 ^b
	Residual	53.001	53	1.000		
	Total	65.799	64			

a. Dependent Variable: Subscale4

b. Predictors: (Constant), Hybrid Courses Taken, Children, Job, GPA, Gender, Class Standing, Race, Modality, Marital Status, HoursWorked, Age

When examining the individual factors in the model only the independent variable of gender yielded a significance level, reaching conventional significance levels ($p=.031$). Looking more closely at the statistical difference between male and female students, female students reported lower levels of perceived isolation.

Table 16

Mean Values for Perceived Isolation Between Men-0 and Women-1

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Subscale4	0	49	3.1327	1.01435	.14491
	1	53	2.9072	.99955	.13730

The coefficients for the entire model are as follows:

Table 17

Coefficients for the Regression Analysis for Perceived Isolation

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.971	2.432		2.455	.017
	Modality	.371	.286	.183	1.295	.201
	Age	-.167	.128	-.387	-1.307	.197
	Gender	-.605	.272	-.300	-2.222	.031
	Race	.104	.059	.238	1.765	.083
	Class Standing	.190	.208	.195	.911	.366
	GPA	-.023	.213	-.015	-.110	.913
	Marital Status	-.224	.248	-.135	-.903	.371
	Children	.735	.862	.200	.853	.398
	Job	-.265	.615	-.091	-.430	.669
	HoursWorked	-.001	.018	-.013	-.060	.952
	Hybrid Courses Taken	.134	.094	.191	1.414	.163

a. Dependent Variable: Subscale4

Empathetic Faculty Understanding

The fifth multiple regression considered the independent variables with the perceived empathetic faculty understanding from the students. The regression was run using a forced entry model with all of the independent variables (gender, age, race, class standing, GPA, marital status, number of children, employment status, number of hours worked per week, and number of hybrid courses taken), and the dependent empathetic faculty understanding. The R square value was .192, which indicates that the model accounts for 19% of the total variability in responses.

Table 18

Model Summary for the Regression Analysis for Perceived Empathetic Faculty Understanding

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.438 ^a	.192	.024	1.09734

a. Predictors: (Constant), Hybrid Courses Taken, Children, Job, GPA, Gender, Class Standing, Race, Modality, Marital Status, HoursWorked, Age

The ANOVA for the overall model yielded an F statistic of 1.146 and a p value of .346, which was not significant at the .05 level.

Table 19

ANOVA for perceived Empathetic Faculty Understanding

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.179	11	1.380	1.146	.346 ^b
	Residual	63.820	53	1.204		
	Total	78.999	64			

a. Dependent Variable: Subscale5

b. Predictors: (Constant), Hybrid Courses Taken, Children, Job, GPA, Gender, Class Standing, Race, Modality, Marital Status, HoursWorked, Age

When examining the individual factors in the model none of the independent variables yielded a significance level below the alpha of .05. However, students with children is a variable approaching significance with a value of .054.

Table 20

Coefficients for the Regression Analysis for Perceived Empathetic Faculty Understanding

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.144	2.669		-.429	.670
	Modality	.261	.314	.117	.829	.411
	Age	.154	.140	.325	1.096	.278
	Gender	.260	.299	.118	.871	.388
	Race	.084	.065	.175	1.293	.202
	Class Standing	-.285	.229	-.267	-1.248	.218
	GPA	.305	.234	.175	1.307	.197
	Marital Status	.356	.272	.196	1.310	.196
	Children	-1.868	.946	-.463	-1.975	.054
	Job	.259	.675	.081	.384	.703
	HoursWorked	.023	.020	.234	1.122	.267
	Hybrid Courses Taken	-.061	.104	-.080	-.587	.559

a. Dependent Variable: Subscale5

Student Satisfaction

The sixth multiple regression considered the independent variables with student satisfaction with their academic experience. This multiple regression was run using a forced

entry model with all of the independent variables (gender, age, race, class standing, GPA, marital status, number of children, employment status, number of hours worked per week, and number of hybrid courses taken), and the dependent variable student satisfaction. The R square value was .142, which indicates that the model accounts for 14% of the total variability in responses.

Table 21

Model Summary for the Regression Analysis for Student Satisfaction

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.376 ^a	.142	-.040	1.40654

a. Predictors: (Constant), Hybrid Courses Taken, Children, Job, Gender, GPA, Race, Class Standing, Modality, Marital Status, HoursWorked, Age

The ANOVA for the overall model yielded an F statistic of .780 and a p value of .658, which was not significant at the .05 level.

Table 22

ANOVA for Student Satisfaction

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.984	11	1.544	.780	.658 ^b
	Residual	102.875	52	1.978		
	Total	119.859	63			

a. Dependent Variable: Subscale6

b. Predictors: (Constant), Hybrid Courses Taken, Children, Job, Gender, GPA, Race, Class Standing, Modality, Marital Status, HoursWorked, Age

When examining the individual factors in the model none of the independent variables yielded a significance level below the alpha of .05.

Table 23

Coefficients for the Regression Analysis for Student Satisfaction

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.078	3.421		-.023	.982
	Modality	.309	.407	.112	.759	.452
	Age	.097	.180	.166	.538	.593
	Gender	-.125	.384	-.045	-.325	.747
	Race	.071	.083	.120	.855	.397
	Class Standing	-.272	.294	-.206	-.926	.358
	GPA	.353	.299	.164	1.180	.243
	Marital Status	.434	.349	.192	1.245	.219
	Children	-1.630	1.213	-.328	-1.344	.185
	Job	.423	.884	.102	.478	.634
	HoursWorked	.025	.026	.205	.966	.339
	Hybrid Courses Taken	-.067	.133	-.071	-.506	.615

a. Dependent Variable: Subscale6

A final regression was run with number of hours worked as the independent variable and number of hybrid courses taken as the dependent variable. The researcher found a moderately significant correlation between numbers of hours students worked and number of hybrid courses taken. The R square value was .039, which indicates that the model accounts for 39% of the total variability in responses. The ANOVA for the overall model yielded an F statistic of 3.118 and a p value of .081, which was not significant at .05 but represents a marginally significant value.

Table 24

Model Summary, ANOVA, and Coefficients for the Regression Analysis for Number of Hours Worked and Number of Hybrid Courses Taken

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.199 ^a	.039	.027	1.372

a. Predictors: (Constant), Hours Works

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.871	1	5.871	3.118	.081 ^b
	Residual	143.116	76	1.883		
	Total	148.987	77			

a. Dependent Variable: Hybrid Courses Taken

b. Predictors: (Constant), Hours Works

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.868	.300		2.895	.005
	Hours Works	.024	.014	.199	1.766	.081

a. Dependent Variable: Hybrid Courses Taken

Summary

This chapter reports the results of a quantitative study to attempt to determine if hybrid course offerings at a nonresidential campus increase student sense of belonging and satisfaction. The data was collected from students enrolled in a hybrid course and the traditional version of the same course in the fall 2014 at the Abington College of the Pennsylvania State University who chose to respond to a request to participate sent out via email. The researcher used an online survey instrument based on the Sense of Belonging scale developed by Hoffman et al. (2002). The survey contained 27 items that asked respondents to react on a five-point scale (completely true, mostly true, neither true or untrue, mostly untrue, completely untrue). Additionally, there included a series of demographic items to determine the following information from participants: age, gender, race, and class standing, GPA, marital status, number of children, employment status, number of hours worked per week, and number of hybrid courses taken.

The total population for this study was 481 students. A total of 107 students elected to participate in the study for a total response rate of 22%. The researcher first ran a Chronbach's alpha reliability measure to ensure internal reliability. The alpha score came back as .918, indicating that 91.8% of the responses indicate internally consistent reliable variance.

The survey instrument consisted of six factors. Each one was analyzed using a multiple regression analysis in which each factor was a dependent variable and the course modality along with the demographic information collected as the independent variables. The six factors of the survey instrument were perceived peer support, perceived faculty support/comfort, perceived classroom comfort, perceived isolation, empathetic faculty understanding, and satisfaction. The researcher ran six regression analyses for each factor. None of the six factors were significant at the .05 level. However, a few individual factors were significant. In the analysis of the first factor

in which perceived peer support was the dependent variable, the independent variable of course modality yielded a p value of .019.

Looking more closely at the statistical difference between the hybrid and non-hybrid students, the students in the traditional version of the course reported higher levels of perceived peer support. In the analysis of the second factor (perceived faculty support/comfort) as the dependent variable, the independent variable of number of children yielded a p value of .031. β values indicated a negative relationship between number of children and perceived faculty support/comfort. The analysis of the third factor (classroom comfort) yielded similar results indicating a negative relationship between number of children and perceived classroom comfort.

In the analysis of the fourth factor (perceived isolation), the independent variable of gender yielded a significance level reaching conventional significance levels ($p=.031$). Looking more closely at the statistical difference between male and female students, female students reported lower levels of perceived isolation. In the analysis of the fifth and sixth factors, none of the independent variables in the model were significant at the .05 level.

The researcher ran a final regression with number of hours worked as the independent variable and number of hybrid courses taken as the dependent variable. The p value for this model was .081 indicating a marginally significant relationship between the number of hours worked and the number of hybrid courses taken.

Chapter 5: Discussion

Introduction

This study attempted to determine if students enrolled in community-based hybrid courses exhibit greater levels of sense of belonging and satisfaction than students enrolled in the same courses in a traditional modality at a nonresidential campus. The researcher's primary purpose for this study was to examine predictors of retention and to attempt to determine what, if any, effect participation in online learning communities via enrollment in community-based hybrid courses would have on indicators of retention.

The issue of retention is a significant problem nationally and an issue university administrators are often forced to confront (Barefoot, 2004). This problem is particularly complex for public institutions where attrition rates are not only higher than their private counterparts, but also because there is a growing discussion among state legislators centered on tying institutional funding to graduation rates (Barefoot, 2004). For these reasons, higher education institutions are looking for specific interventions and strategies to boost student persistence. Studies have established that improving student connectedness and sense of belonging to the institution is one such intervention (Morrow & Ackermann, 2012).

The Abington College of Penn State University, a small residential campus in the Pennsylvania State University system, like many other public higher educational institutions is also concerned with the issue of student persistence. In a memorandum sent by then Penn State University President Rodney Erikson to the campus chancellor, the Abington College was charged with both increasing its retention rates as well as increasing its number of hybrid (partially online) course offerings (R. Erickson, personal communication, October 13, 2011). A natural inquiry to come from this charge is if there is a relationship between the two variables.

Specifically, can hybrid course offerings contribute to an overall increase in student persistence? More specifically, since the hybrid course offerings at the Abington College are all predicated on building virtual communities when students are not in the classroom, can these hybrid course offerings contribute to a student's sense of belonging on the campus? This study explored the following research question: Do hybrid course offerings at a nonresidential campus increase student sense of belonging and satisfaction?

This study is important as the examination of effects of hybrid courses at a nonresidential campus and its effects on students attitudes on their connection to the college is a subject that has not been thoroughly explored in the existing literature. The structure and design of community-based hybrid courses are highly interactive in nature. The students are engaged in a continuing dialogue in the online learning environment with both their instructor and their peers. This format is in stark contrast to the traditional lecture based format in which many traditional college courses operate. From this stark contrast comes a natural line of inquiry. Could a student who is spending less time on campus because of their enrollment in hybrid courses actually feel a greater sense of belonging to the campus community because of their heightened levels of interactions with faculty and peers? Additionally, if such a notion were possible, how does this new dynamic impact established theories of student persistence?

Conceptual Framework

One of the most commonly referred to models of student persistence is one developed by Vincent Tinto (1987), which is predicated on academic and social integration into the university community. According to Tinto, integrating into both the academic and social system of a college or university is predicated on a student's sense of fit in this new setting. The perception of integration into the institution represents a sense of affiliation and identification within the

campus community, known as a *sense of belonging* (Hoffman et al., 2002). To attempt to measure sense of belonging Hoffman et al. developed the sense of belonging scale (SBS). In their 2002 study Hoffman et al. were attempting to determine if students who participated in learning communities during their first year indicated higher levels on the sense of belonging scale than first-year students who did not participate in learning communities. The results of the study did find that students who participated in learning communities in their first year did indicate higher levels on the sense of belonging scale than those who did not. These findings are not unexpected as the purpose of first-year learning communities are to ease the transition Tinto refers to in his model from secondary school to the social and academic aspects of the institution.

Along with Tinto's model, Astin's theory of involvement is referenced nearly as much when reviewing the existing literature on student persistence in higher education (Astin, 1984). Like Tinto's model, it is predicated on interactivity. The more engaged a student is in activities related to the academic process, the more likely they are to persist.

The importance of interaction is a primary area of overlap between Tinto's model and Astin's theory. More specifically, the more interaction that occurs between students and faculty, the more that student will be involved in campus life (Astin) and the smoother the acclimation will be into the collegiate system (Tinto).

The concept of interactivity is particularly relevant in studying hybrid courses. Community-based hybrid courses, such as the ones at the Abington College included in this study, are predicated on high levels of interactivity among peers and with the instructor. Unlike the confines of a traditional classroom, the web-based classroom is open and available to students 24 hours a day and 7 days a week making learning anywhere at anytime a real possibility for students. The members of this kind of class contribute to and benefit from a rich

web of ideas where learners are connected to vast amounts of information and resources (Bruckman, 2006). The concept of a constant connection to ideas and information represents one of the most immediate benefits of an online learning community of this nature. That being said, members can get immediate access to the information they need and spend less time hunting for information or solutions (Wenger et al., 2002). By setting forth guidelines and proper expectations, the effective online instructor can operationalize this harvesting and sharing of information to form a knowledge-building community (Riel & Polin, 2001). The operationalized process of harvesting and sharing information revolves around a common goal or series of learning objectives, where members of the community work toward achieving levels of understanding about the nature of the course subject matter (Riel & Polin, 2001). The members of this community, in this case the online learning community of a hybrid course, can through a process of continuous asynchronous interaction, become a living body of knowledge for the benefit of all of the members of the community (Wenger et al., 2002).

The notion of learners working in conjunction with one another to achieve higher levels of understanding than they would reach on their own can be traced back to the concept of the zone of proximal development (Vygotsky, 1978). The nature of the Internet can take advantage of this concept to maximize its effectiveness. The web-based classroom is open and available to students 24 hours a day and 7 days a week making learning anywhere at anytime a real possibility for students. The members of this kind of class contribute to and benefit from a rich web of ideas where learners are connected to vast amounts of information and resources (Bruckman, 2006). Furthermore, class participants can get immediate access to the information they need and spend less time hunting for information or solutions (Wenger et al., 2002). When the learning process occurs in such a manner, students can achieve higher levels of

understanding than they would otherwise achieve on their own as illustrated by Vygotsky when referring to the zone of proximal development.

Setting for the Study

This study was conducted at the Abington College of the Pennsylvania State University. The Abington College is a small nonresidential campus located in the suburbs of Philadelphia. Unlike many other campuses in the Penn State system, the Abington College is a four-year degree issuing institution, but unlike many of its counterparts within the Penn State system, it has no residence halls. For this reason, the campus attracts students from the greater Philadelphia area, many of whom work at least 20 hours a week and contribute to their family's household incomes. It has been a belief held by the administration of the college that the flexibility of hybrid courses would be of great benefit to this population of students. In the fall 2014, there were 21 hybrid courses offered at Abington.

This study focused on the 11 hybrid courses being offered in the fall 2014 at Abington that also have a traditional version of the course being offered simultaneously. The researcher wanted to include a counterpart for every course being taught in a traditional modality to establish a baseline for comparison.

All instructors teaching hybrid courses included in this study have undergone the required faculty development for online teaching and hybrid course development that emphasizes the community approach that fits with the conceptual framework previously discussed.

Instrumentation & Methods

As mentioned previously, the sense of belonging scale was used in the study by Hoffman et al. (2002) to determine if first-year college students in learning communities exhibited greater sense of belonging than students who did not participate in the learning communities. The

researcher for this study used the same scale to attempt to determine if participation in community-based hybrid courses would indicate higher levels on the sense of belonging scale from its participants than students who participated in the traditional modality of the same course.

The SBS consists of 26 items that ask participants to answer their agreement to each item on a five-point scale that ranges from completely true to completely untrue. The SBS consists of five subscales or factors: perceived peer support, perceived faculty support/comfort, perceived classroom comfort, perceived isolation, and empathetic faculty understanding. One of the earlier versions of the SBS contained an item on student satisfaction, which was reinserted into the SBS for this study in order to attempt to answer the second part of the research question about student satisfaction. While the original SBS asked students to indicate their age, gender, race, and class standing, the survey instrument for this study also asked for GPA, marital status, number of children, employment status, number of hours worked per week, and number of hybrid courses taken, all of which were self-reported. The survey instrument for this study was distributed online to participants in the study.

As mentioned previously, this study focused on the 11 hybrid courses being offered in the fall 2014 at Abington that also have a traditional version of the course being offered simultaneously. An email was sent to students enrolled in the 22 courses asking for their participation and prompting them to the online survey instrument and consent form if they opted to participate.

Discussion of Key Findings

The survey was sent to all students enrolled in the 11 hybrid courses identified for this study along with the traditional versions of the same course, which also were identified for this study. The total population for this study was 481 students. A total of 107 students elected to

participate in the study for a total response rate of 22%. This response rate is consistent with other studies conducted at Abington. Of the 107 respondents, 55 were female (51.4%), 50 were male (47.6%), and two respondents did not indicate their gender. In regard to the course modality, 60 (56.1%) respondents were in the traditional version while 47 (43.9%) were in the hybrid version. When asked to indicate their race, 60% of the respondents indicated white/Caucasian, 8.6% indicated black/African American, 5.7% indicated Asian Indian, 15.2% indicated Asian, and 10.5% indicated other. On the item asking for class standing, 14.2% of respondents were freshmen, 40.6% were sophomores, 28.3% were juniors, 14.2% were seniors, and 2.8% selected not applicable. The mean grade point average among respondents was 3.08 (this statistic was self-reported). The mean GPA among the students in the hybrid courses was 3.03 and 3.138 for the students in the traditional version of the course. It should be noted that the high GPA among respondents most likely represents a bias. Participants in this study were asked to participate via an email with a link to an online survey. It is likely that more conscientious students and those with higher grade point averages were more likely to participate.

With regard to the question on marital status, 88.8% of respondents indicated they were single, 6.5% indicated married, and 1.9% indicated divorced. When asked about number of children, 98 respondents indicated zero, accounting for 91.6% percent of participants. Three respondents indicated having one child or 2.8% of respondents, 1 (0.9%) respondent indicated they had 2 children, and 1 (0.9%) respondent indicated having 3 children. With regard to employment status, 67.3% of participants had a job either on or off campus. The mean number of hours worked by the participants was 18.2. When asked how many hybrid courses a student had taken, 70.1% of participants indicated they had taken one or more hybrid courses at the Abington College.

As previously mentioned, the research question for this study had two parts: Do hybrid course offerings at a commuter campus increase student sense of belonging and satisfaction? To attempt to answer the first part of the research question about sense of belonging, each of the five factors of the SBS was run through a multiple regression analysis using the demographic information collected as the independent variables and each factor of the SBS as the dependent variable for each regression analysis. The researcher set the alpha to 0.05.

None of the five factors reached significance at the .05 alpha level. However, some individual variables did. In the first model, where the dependent variable was subscale 1 for perceived peer support, the course modality yielded a p value of .019, indicating that course modality had a significant impact on perceived peer support. Looking more closely at the statistical difference between the hybrid students and non-hybrid students, those in the traditional version of the course reported higher levels of perceived peer support. Using a five-point scale the students in traditional courses reported mean peer support scores of 3.30 compared to the mean of 2.67 for students in the hybrid version of the course. Lower levels of peer support can be a common pitfall within the online learning environment unless specific mechanisms are created for peer-to-peer interaction. This will be discussed later in this chapter.

When examining the regression model in which the second factor, perceived faculty support/comfort, was the dependent variable, data showed course modality had no impact on how students perceived faculty support or their comfort level with faculty. In fact, the only group that indicated a significant difference in terms of their perceived support from faculty were students with children. The independent variable of number of children reached conventional significance levels ($p=.031$). When examining the β value of -2.107, there is a negative relationship between number of children and perceived faculty support/comfort. It is worth

noting that an equal number of students with children were in the hybrid group and the traditional group. The vast majority of the population for this study fall into the 18 to 22 year old demographic counting for 82% of the population for this study. Additionally, 88.8% of the population for this study indicated they were single, and 91.6% of the population indicated they had no children. In this sample undergraduate students with children represent a minority.

The finding that students with children felt lower levels of support held true as well for perceived classroom comfort. The regression analysis that was run for the third factor, perceived classroom comfort, yielded no a p value of .019 for students with children. It should be noted that in the online survey instrument, participants in the study were given the following prompt: If you have taken this class as a hybrid, please think of your time spent in ANGEL as well as in the classroom. ANGEL is the learning management system used by all of the hybrid courses in this study when delivering instruction online. When examining the β value of -2.258, there is a negative relationship between number of children and perceived classroom comfort.

When examining the fourth factor of the scale, perceived isolation, in the regression model, only the independent variable of gender yielded a level reaching conventional significance levels ($p=.031$). Looking more closely at the statistical difference between male and female students, female students reported lower levels of perceived isolation. The mean for perceived isolation among male students was 3.13, while it was 2.90 for female students.

When examining the fifth factor of the scale, faculty understanding, in the regression model, none of the independent variables yielded a significance level below the alpha of .05. However, once again the independent variable number of children was marginally significant with a p value of .054. This could indicate in the areas of perceived classroom comfort and perceived faculty support/comfort, that course policies and their enforcement by faculty are

designed with the majority demographic (age 18-22, single, no children) in mind. Undergraduate students who are parents obviously have a great deal of responsibilities that many students who are not parents do not. The data indicates that these students feel faculty should be more considerate of their individual needs regardless of the modality of the course (since there were an equal number of parents between the hybrid and traditional groups).

The final multiple regression model was run using the sixth and final factor, student satisfaction with their academic experience. The model was run using a forced entry model with all of the independent variables (gender, age, race, class standing, GPA, marital status, number of children, employment status, number of hours worked per week, and number of hybrid courses taken), and the dependent variable of student satisfaction. When the individual factors in the model were examined, none of the independent variables yielded a significance level below the alpha of .05.

In order to better understand the data with regard to hybrid courses and working students, the researcher ran an additional regression with number of hours worked as the independent variable and number of hybrid courses taken as the dependent variable. The researcher found a moderately significant correlation between numbers of hours students worked and number of hybrid courses taken with a p value of .081, which were not significant at the .05 level set by the researcher but represents a marginally significant value. When examining the β value of .868, there is a positive relationship between number of hours worked and number of hybrid courses taken.

Primary Conclusions

When examining each of the five factors to answer the first part of the research question (Do hybrid course offerings at a nonresidential campus increase student sense of

belonging?), the data would indicate the answer in this study is no. However, the data does not indicate that students who take hybrid courses at a nonresidential campus have a decreased sense of belonging. This finding coincides with Russell's (1999) *no significant difference phenomena*.

The no significant difference phenomena established that modality, whether it is online or face-to-face, did not impact student outcomes in terms of academic performance (Russell, 1999). The findings from the data in this study would indicate there is no significant difference between hybrid courses and traditional courses in terms of sense of belonging to the campus. More specifically, the hybrid courses in this study were formatted in such a way that 40% or more of classroom time was replaced with online instruction. Subsequently, the students enrolled in the hybrid courses were on campus less and had less face-to-face contact with their instructors and peers than the students in the traditional versions of the courses. Therefore, these students had more interactions with each other and their instructors in the online learning environment. However, these students did not indicate lower levels of perceived faculty support/comfort, perceived classroom comfort, empathetic faculty understanding, and satisfaction than their counterparts in the traditional modality. Nor did the students in the hybrid versions indicate higher levels of perceived isolation as a result of less face-to-face contact with instructors and peers than their counterparts in the traditional modality of the course.

To attempt to determine if hybrid course offerings at a commuter campus increase student sense of satisfaction, the researcher ran a regression analysis on the item on student satisfaction with their overall academic experience. As previously mentioned, when the individual factors in the model were examined, none of the independent variables yielded a significance level below the alpha of .05. In terms of the research question, the data indicated no difference in student satisfaction for students enrolled in a face-to-face or hybrid courses.

The data analysis for this study yielded other key findings in terms of the impact of course modality on perceived peer support and student perception of faculty support and comfort. Using a five-point scale, the students in traditional courses reported mean peer support scores of 3.30 compared to the mean of 2.67 for students in the hybrid. This would indicate that students are not coming together to support one another in the online community in these courses as the researcher had predicted. This is a common challenge facing web-based courses. In a traditional course, students have opportunities for interaction outside of class. For example, students can chat walking to class, in a student hub, or simply before and after class. Such interactions can allow for students to express particular challenges they are experiencing with the course, and other students can offer help and advice. The online learning environment does not incorporate the same kind of dynamics for peer-to-peer support interactions unless they are intentionally manufactured (Palloff & Pratt, 2002). In order to fully understand this finding as it relates to opportunities for interaction within these courses, each of the 11 hybrid courses included in this study would need to be further examined.

Data showed course modality had no impact on how students perceived faculty support or their comfort level with faculty. This outcome does not fit with the researchers original prediction that because there is more student-instructor interaction online, comfort levels among students in the hybrid modality would be higher than that of their face-to-face counterparts. However, this data might suggest that online interactions between students and faculty do not negatively impact student perception on the level of support they are receiving from the faculty, nor does it negatively impact their comfort level with faculty. This further supports the argument that there is no significant difference between face-to-face and hybrid course modalities in terms of student perceptions of comfort and support.

Students with Children

Two significant negative findings were uncovered among the students with children subgroup. First, there is a negative relationship between number of children and perceived faculty support/comfort. This might be an issue for undergraduate students with children as their peers may largely fall into the 18 to 22 year old demographic. When examining the demographic data from the participants, the 18 to 22 year old demographic accounted for 82% of the population for this study. Additionally, 88.8% of the population for this study indicated they were single, and 91.6% of the population indicated that they had no children. The negative feelings students with children have related to perceived faculty support/comfort could suggest policies and practices geared toward the majority of the student population without regard to the minority who have children and thus have serious commitments that extend beyond academics.

The second negative relationship was between number of children and perceived classroom comfort in both hybrid and face-to-face modalities. As was the case with perceived faculty support/comfort, this data could indicate that students with children, who represent a minority among the population of students, feel less comfortable in the classroom because of their minority status. The data could also further indicate that classroom policies and practices do not take into account the responsibility parents in the classroom have as opposed others. One possible example could be a cell phone or electronic device policy. While it may not be necessary for a typical college undergraduate to check text messages during class, this may be absolutely necessary for a student who is a parent of a child in daycare for example.

While only approaching significance at .054, the data also indicates a negative relationship between students with children and their perception of faculty understanding. This negative relationship could indicate in the areas of perceived classroom comfort and perceived

faculty support/comfort that course policies and their enforcement by faculty are designed with the majority demographic (age 18 to 22, single, no children) in mind. Undergraduate students who are parents obviously have a great deal of responsibility that many students who are not parents do not. The data indicates the possibility that these students feel faculty should be more considerate of their individual needs.

Gender Differences

This study found a significant relationship between perceived isolation and gender. More specifically, women's sense of perceived isolation was significantly lower than their male counterparts. This data could corroborate the findings by Rovai (2002a) in which female students showed statistically significant higher levels of connectedness on the classroom community scale. As previously mentioned, in the theory developed by Belenky (1997), men typically utilize an independent voice whereas women typically utilize a connected voice, which is centered on relational communication. Belenky's (1997) theory could explain the differences among men and women in perceived isolation in this study.

Implications for Policy and Practice

One of the primary motivations for this study as described earlier in this paper was to examine the overall impact of hybrid courses on student behaviors and attitudes with a specific focus on the issue of student persistence. As explored throughout this paper, Vincent Tinto's (1987) model of student persistence, which is predicated on the acclimation of the student to the institution both socially and academically, is one of the most referenced models regarding student persistence in higher education and served as a large piece of the conceptual framework for this study. Along with Tinto's model, Astin's (1984) theory of involvement is referenced nearly as much when reviewing the existing literature on student persistence in higher education.

Astin's theory suggests that the more engaged students are in activities related to the academic process, the more likely they are to persist. Both of these scholarly works center upon older models of traditional instruction in classrooms on a college campus. There is a lack of research in the current literature on how online learning could influence this process of acclimation to the institution both socially and academically as referenced in Tinto's model or how engagement online could affect Astin's theory of involvement. Tinto states that the possibility of engagement and integration through online learning environments is worthy of exploration and study to determine how such environments might fit into the persistence model (Tinto, 1997).

From the findings in this study, the data indicates that based on the metric of sense of belonging, hybrid courses do not negatively impact a student's sense of belonging on the campus overall. When examining the five factors of sense of belonging, only the first, perceived peer support showed a significant difference among the students in a hybrid course and students in the traditional modality of the course. Russell's (1999) *no significant difference phenomenon* established that modality, whether it online or face-to-face, did not impact student outcomes in terms of academic performance. The findings from the data in this study would indicate that there is no significant difference between hybrid courses and traditional courses in terms of student sense of belonging to the campus. Though we don't see significant differences, the finding is important in terms of the justification for the continued development of hybrid courses at a nonresidential campus when coupled with the study's finding on student satisfaction.

Research has indicated that web-based courses by their flexible nature are more attractive to busy students (Doherty, 2006). On this nonresidential campus, data indicated that 67.3% of the study's participants had a job either on or off campus, and the mean number of hours worked by the participants was 18.2. From the findings of this study, satisfaction levels from students in the

hybrid courses are not negatively affected overall by spending less time on campus by substituting classroom hours with interactions in the online learning environment. These findings could be used as part of a justification to continue the development of hybrid courses at the campus.

It should be noted that the one aspect of student sense of belonging that was negatively impacted by the hybrid course format was perceived peer support. This finding should influence the design and any re-design of hybrid courses at the college. As previously mentioned, a challenge to the hybrid course format is that it does not allow for organic discussion and opportunities for support as a traditional class. Therefore these opportunities for peer-to-peer interactions have to be intentionally put into place by the instructor (Palloff & Pratt, 2002). The hybrid course should be reviewed to explore opportunities for adding such interactions. Such interactions may include a student chat and help forum where students can ask each other questions about the course content and get suggestions on their own work. These interactions could even lead to online study groups. Additionally, opportunities for peer-to-peer review for assignments may also boost perceived levels of peer support within the hybrid courses. Most learning management systems do have mechanism to allow for these types of interactions.

When examining the other findings it becomes clear that there is a perceived lack of support from students with children, based on the negative relationship between students with children and three factors of the SBS (perceived faculty support/comfort, perceived classroom support, and empathetic faculty understanding). This finding is significant at a nonresidential campus such as the Abington College. Nonresidential campuses, particularly those located near large urban centers, can be an attractive choice for non-traditional students to pursue their studies. In this study, students with children indicated lower levels of perceived faculty support/comfort,

perceived classroom comfort, and perceived faculty understanding. This data should justify an examination of resources and support, or lack there of, for students with children. Students with children lead a very different lifestyle and carry a great deal of extra responsibilities than a traditional college student. An exploration into methods, resources, and policies that would provide better support for this population of students could be supported from this data.

Recommendations for Further Research

The data yielded from this study represents a snapshot in time from 22 classes held on one nonresidential campus in the fall 2014. Further studies on the effect of course modality, more specifically hybrid courses contrasted with traditional courses, and their effect on aspects of student persistence could benefit from longitudinal or qualitative studies.

A longitudinal study could be designed with a similar approach as this study but instead use the SBS or similar instrument as a pre- and post-test. More specifically, a population of students in their first semester could be administered the sense of belonging scale. Then the same population of students could be administered the scale at the conclusion of their final semester. From this method, factors that may influence sense of belonging both positively and negatively could be studied over time. It would contribute to the body of literature to attempt to determine if the number of hybrid courses taken by a student as an undergraduate significantly influences their sense of belonging.

Additionally, the other demographic variables could yield valuable data to both the institution and the body of research. For example, how does minority status influence sense of belonging over time? In the case of this study, minority groups are not limited to ethnic minorities but some have minority status in terms of age, marital status, and number of children. The last demographic variable is particularly worth of study based on the findings of herein, and

students with children indicated particularly negative attitudes toward a sense of belonging in terms of perceived faculty support, classroom support, and faculty understanding. If strategies and interventions were devised in an effort to change these attitudes from student parents, a study such as this could provide data to help determine the effectiveness of such strategies and interventions.

Because this study yielded no significant results about the nature of course modality as it relates to measurements of student persistence/sense of belonging and satisfaction, future research may benefit from a qualitative approach. Qualitative research in this area may yield intricacies of student attitudes and behaviors that survey data cannot. By interviewing different kinds of students of different demographics and lifestyles, a researcher may gain specific insights into their attitudes and behavior as they relate to persistence and how their academic experience may be specifically affected by taking hybrid courses. Furthermore such qualitative data collection could provide details about the online learning community and what specific strategies by instructors are effective or need improvement.

Additionally, qualitative studies could provide insight into student opinions and attitudes regarding both course modality and support, or lack thereof, of students with children. By asking a series of questions, data collected might yield insights into the most successful aspects of the hybrid course modality along with barriers and areas where improvement is needed in order to better serve the needs of the students. Furthermore, a qualitative study could provide insight into the challenges of being a parent enrolled in undergraduate studies. By asking in-depth questions, data collected could provide insight into what types of support structures are lacking for these students. Probing deeper into the challenges and obstacles for student parents could provide ideas for interventions to increase both sense of belonging and satisfaction for them.

Due to the overwhelming issue of student retention in higher education, it would benefit the body of knowledge to conduct a longitudinal study on retention as it relates to course modality. The data in this study suggests there is a marginally significant relationship between the number of hours a student works and the number of hybrid courses a student takes. On this nonresidential campus, 67.3% of the study's participants had a job either on or off campus and the mean number of hours worked by the participants was 18.2. The literature suggests that web-based courses are popular among this population of students because of their flexible nature (Doherty, 2006). A study in which students are tracked over five years to examine retention rates could yield valuable data. An analysis of those who were retained by the institution and those who were not and whether the number of hybrid courses taken by students in each group had a significant relationship with their retention could provide valuable insight on how course modality could influence retention.

Finally, a study of hybrid course design and its effects on perceived peer support could add to the body knowledge on successful hybrid course design. The one finding this study yielded that suggested a negative influence of hybrid courses on student sense of belonging was the negative relationship between perceived peer support and the hybrid modality. This study did not investigate the various aspects of the design of the hybrid courses included. Perhaps a study of the various mechanisms to provide opportunities for peer-to-peer interactions with a hybrid course could yield data that establishes a relationship between specific methods for peer-to-peer interactions and their effect on perceived peer support.

As previously mentioned, there is most likely a bias in this study with regard to student grade point averages. This study solicited participants via an email containing a survey link. Students with higher grade point averages may have been more inclined to read the email and

participate. Therefore, future research may benefit from reviewing student records to determine mean grade point averages from the population of students in hybrid and traditional courses.

Summary

The proliferation of online learning modalities and the evolving landscape of technology is challenging conventional models of student persistence and student behaviors and attitudes toward higher education and its institutions. While variables that influence how a student acclimates and engages with various aspects of college life have been established, how interactions that take place among students and instructors online influence student academic experience remain largely unknown. This study attempted to better understand how these kind of online interactions within the context of community-based hybrid courses influenced student sense of belonging to the institution and their overall satisfaction. Tinto's (1997) model of student persistence is predicated on the acclimation to the social and academic aspects of the institution, which can be measured by their sense of belonging. The data collected in this study suggests some interesting findings about the nature of hybrid courses as they relate to student attitudes on sense of belonging and satisfaction. The fact that the data yielded no significant difference in four of the five factors on the sense of belonging scale could suggest that students are seeing less of a distinction between interactions that take place in the classroom and those that take place within the online learning environment.

The data also suggests that students enrolled in hybrid courses are no less satisfied with their overall academic experience than their traditional counterparts. If the student population in this study is becoming more representative of populations at other similar institutions, hybrid courses provide a valuable alternative to students who work a significant number of hours per week. At the Abington College of Penn State University, quality assurance standards have been

implemented to assure students in hybrid courses are receiving the same quality of instruction as in traditional versions. The data suggests that such standards are working and that these courses are an important aspect of the college's offerings.

Moving forward, scholars in the field of online learning and instructional technology can continue to study web-based courses and how traditional models of pedagogy and student persistence may or may not apply to these types of courses or if new models are needed to deal with the evolving landscape of course modality in higher education. One thing is clear from the various studies that have examined web-based courses: There is a definite place for these types of course within higher education, and students will likely expect more of these types of courses in the future.

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APPENDIX A

Survey Instrument

Sense of Belonging Scale

This survey supports a study examining the effects of hybrid courses (as opposed to traditional courses) at Penn State Abington. You are being asked to participate in this study because you are either enrolled in a hybrid course, or you are in a traditional face-to-face version of a course that has a hybrid option. This survey should take no more than 10 minutes to complete. No personally identifying information will be affiliated with survey responses. This survey contains two sections. The first section will ask you for basic demographic information, and the second will ask you about your feelings as a result of taking (course) at Penn State Abington.

Part 1: Demographic Information

1. Please enter your age:
2. Please enter your gender
 - Male
 - Female
3. Please select which racial / ethnic group with which you most identify
 - White, Caucasian
 - Black, African American
 - American Indian, or Native Alaskan
 - Asian Indian
 - Asian
 - Pacific Islander
 - Other

4. Please select your current class standing

- Freshman
- Sophomore
- Junior
- Senior

What is your current GPA?

What is your current marital status?

- Married
- Single
- Divorced

How many children do you have?

Do you have a job (either on campus or off campus)?

- Yes
- No

If you answered yes to the previous question, how many hours a week do you work?

Including this one (if you are taking the hybrid version of this course), how many hybrid courses have you taken?

Part 2: Student Experiences

Think about your experiences in this course and your feelings as a result of taking this course, and answer the following. If you have taken this class as a hybrid, please think of your time spent in ANGEL, as well as in the classroom.

I could call another student from class if I had a question about an assignment.	Completely True	Mostly True	Equally True / Untrue	Mostly Untrue	Completely Untrue
Other students are helpful in reminding me when an assignment is due or when tests are approaching.					

If I miss class, I know students who I could get the notes from.					
I have met with classmates outside of class to study for an exam.					
I discuss events which happen outside of class with my classmates.					
I invite people I know from class to do things socially.					
I have developed personal relationships with other students in class.					
I have discussed personal matters with students who I met in class.					
I feel comfortable seeking help from the teacher before or after class.					
I feel comfortable asking a teacher for help if I do not understand course related material.					
If I had a reason, I would feel comfortable seeking help from a faculty member outside of class time (during office hours, etc.)					
I feel comfortable talking about a problem with faculty.					
I feel comfortable socializing with a faculty member outside of class.					
I feel comfortable asking a teacher for help with a personal problem					
Speaking in class is easy because I feel comfortable.					
I feel comfortable volunteering ideas or opinions in class.					
I feel comfortable contributing to class discussions.					
I feel comfortable asking a question in class.					
It is difficult to meet other students in class.					
No one in my classes knows anything personal about me.					
I rarely talk to other students in my class.					
I know very few people in my class.					

I feel that a faculty member would take the time to talk to me if I needed help.					
I feel that a faculty member would be sympathetic if I was upset.					
I feel that a faculty member would be sensitive to my difficulties if I shared them.					
I feel that a faculty member really tried to understand my problem when I talked about it.					
I am satisfied with my academic experience.					

APPENDIX B

Informed Consent Form

INFORMED CONSENT FOR PARTICIPATION IN RESEARCH ACTIVITIES

Informed Consent for Social Science Research

The Pennsylvania State University

Title of Project: The effects of hybrid course offerings on sense of belonging and satisfaction at a commuter campus.

Principal Investigator: Ronald J Costello

- 1. Purpose of the Study:** The purpose of this study is to examine student attitudes as a result of taking either a hybrid or traditional version of a course at the Pennsylvania State University, Abington College. We are collecting data to gauge student's perceptions and their satisfaction with the experience of taking a course at Penn State Abington.
- 2. Procedures to be followed:** If you decide to participate, you will be asked to fill out an anonymous survey posted on the Abington web server.
- 3. Duration:** This study will last the duration of Fall semester, 2014.
- 4. Statement of Confidentiality:** Your participation in this research is confidential. The data will not have any personal identifiable information associated with it in any way. In the event of a publication or presentation resulting from the research, no personally identifiable information will be shared.
- 5. Right to Ask Questions:** If you have questions about the study, please feel free to contact Ronald J Costello (contact information is above). If you have questions regarding your rights as a research subject, please contact Penn State's Institutional Review Board (814-865-1775; ORProtections@psu.edu).
- 6. Voluntary Participation:** Your decision to be in this research is voluntary. You can stop at any time. You do not have to answer any questions you do not want to answer.

You must be 18 years of age or older to consent to take part in this research study. If you agree to take part in this research study and the information outlined above, please sign your name and indicate the date below.

You will be given a copy of this form for your records.

Participant Signature

Date

Person Obtaining Consent


Date

APPENDIX C

Authorization to use the Sense of Belonging Scale

RE: Request to use SBS scale

September 29, 2014 4:43 PM

▼ From:  Jayne E Richmond
To: RONALD J COSTELLO

That would be fine. good luck.

From: RONALD J COSTELLO
Sent: Monday, September 29, 2014 4:04 PM
To: [REDACTED]
Subject: Request to use SBS scale


Dear Doctor **Richmond**,

I am a doctoral student currently working on my dissertation. For my study, I am exploring a possible correlation between students in community based hybrid courses and their sense of belonging to the college. I would very much like to use the sense of belonging scale in the attached study as my survey instrument. You are listed as the contact to reprint the article, so I am reaching out to you to inquire about using this instrument for my study. If you are not the person to grant this request, if you could put me in touch with the authors or other appropriate person, I would greatly appreciate it. Thank you in advance for your help and consideration of this request.

All the best,

Ronald J Costello

Senior Instructional Designer & Lecturer of Communication
Manager for the Center for Teaching and Learning
Penn State University - Abington



APPENDIX D

IRB Approval

PEPPERDINE UNIVERSITY

Graduate & Professional Schools Institutional Review Board

November 26, 2014

Ronald Costello

Protocol #: E1114D05

Project Title: The effects of Hybrid Course Offerings on sense of belonging and satisfaction at a commuter campus

Dear Mr. Costello:

Thank you for submitting your application, *The effects of Hybrid Course Offerings on sense of belonging and satisfaction at a commuter campus*, for exempt review to Pepperdine University's Graduate and Professional Schools Institutional Review Board (GPS IRB). The IRB appreciates the work you and your faculty advisor, Dr. Sparks, have done on the proposal. The IRB has reviewed your submitted IRB application and all ancillary materials. Upon review, the IRB has determined that the above entitled project meets the requirements for exemption under the federal regulations (45 CFR 46 - <http://www.nihtraining.com/ohsrsite/guidelines/45cfr46.html>) that govern the protections of human subjects. Specifically, section 45 CFR 46.101(b) (2) states:

(b) Unless otherwise required by Department or Agency heads, research activities in which the only involvement of human subjects will be in one or more of the following categories are exempt from this policy:

Category (2) of 45 CFR 46.101, research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: a) Information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and b) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

In addition, your application to waive documentation of informed consent has been **approved**.

Your research must be conducted according to the proposal that was submitted to the IRB. If changes to the approved protocol occur, a revised protocol must be reviewed and approved by the IRB before implementation. For any proposed changes in your research protocol, please submit a **Request for Modification Form** to the GPS IRB. Because your study falls under exemption, there is no requirement for continuing IRB review of your project. Please be aware that changes to your protocol may prevent the research from qualifying for exemption from 45 CFR 46.101 and require submission of a new IRB application or other materials to the GPS IRB.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite our best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the GPS IRB as soon as possible. We will ask for a complete explanation of the event and your response. Other actions also may be required depending on the nature of the event. Details regarding the timeframe in which adverse events must be reported to the GPS IRB and the appropriate form to be used to report this information can be found in the *Pepperdine University Protection of Human Participants in Research: Policies and Procedures Manual* (see link to "policy material" at <http://www.pepperdine.edu/irb/graduate/>).

Please refer to the protocol number denoted above in all further communication or correspondence related to this approval. Should you have additional questions, please contact Kevin Collins, Manager of the Institutional Review Board (IRB) at gpsirb@pepperdine.edu. On behalf of the GPS IRB, I wish you success in this scholarly pursuit.

Sincerely,



Thema Bryant-Davis, Ph.D.
Chair, Graduate and Professional Schools IRB

cc: Dr. Lee Kats, Vice Provost for Research and Strategic Initiatives
Mr. Brett Leach, Compliance Attorney
Dr. Paul Sparks, Faculty Advisor