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The Relationship between Social Integration in Learning Community and Retention of Freshmen Minority Students

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Concordia University–Portland
College of Education
Doctorate of Education Program

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The Relationship Between Social Integration in Learning Community and Retention
of Freshmen Minority Students

Christopher Anthony Phekni
Concordia University–Portland
College of Education

Dissertation submitted to the Faculty of the College of Education
in partial fulfillment of the requirements for the degree of
Doctor of Education in Educational Leadership
With a Specialization in Higher Education

Floralba Arbelo Marrero, Ed.D., Faculty Chair
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Abstract

This dissertation examined whether student social integration through participation in a learning community is associated with the retention of freshman minority students from the first semester to the second semester of their first year in college. A web-based Qualtrics survey questionnaire was administered through social media to the target population of freshmen aged at least 18 years old in learning communities across the United States. A correlational quantitative research design was utilized to address the research questions. The study examined whether retention between freshmen first and second semester relates to their social experiences in a learning community. In addition, this study looked to see if these factors which were (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, had any effect on the retention of minority freshman students between the first and second semester of college. Data was entered and analyzed using IBM Statistical Package for the Social Science (SPSS) version 25 (2017) software and the Minitab Express (2017) software. Analysis of the data demonstrated that there was no correlation between social integration in a learning community and retention for the Hispanic, Other Minority, and Caucasian group of participants. However, the African American or Black category showed retention as constant between the first and second semester of college. The variables of (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, had no effect on the retention.

Keywords: retention, learning community, social integration, minority freshmen students

Dedication

I am dedicating this dissertation to the memory of my mom, Dora Phekni, who believed in me and offered me her nurturing, loving care and guidance. She molded me to be who I am today.

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Chapter 1: Introduction

Introduction to the Problem

Since 1880, the retention of college students has remained a challenge in the higher education sector (Berger, Ramirez, & Lyons, 2012). Despite programs, support systems, and diverse interventions at colleges, undergraduate student retention continues to be a problem today. Past research has assessed support program interventions and student characteristics to understand what might allay attrition. Braxton et al. (2014) elaborated on Tinto's (1975) ideas that some characteristics which college students possess, like "family background, individual attributes and pre-college schooling experiences" affect their retention (p. 74). Voelkel and Chrispeels (2017) stressed that some countries endeavor to improve student learning but many of their methods are ineffective in elevating the accomplishment of their students.

Swail (2014) asserted that more minority students are admitted to colleges, but they are ill-prepared for college coursework due to educational systems that fail to prepare them and the increasingly high cost of tuition; these factors present a barrier to many of them to staying in college long enough to graduate. The National Student Clearinghouse (2017), described the overall rate of retention as the percentage of first-year students that returned to the same college for the next year. In the fall of 2016, there was a 61.1% retention rate of first-year students who entered college in fall 2015. This overall rate of retention of first-year students has a subgroup of Asian students with 72.9% as the highest retention rate, while the subgroup with the lowest retention rate was the African American or Black students at 54.5 %. At 4-year public colleges, the retention rate for freshmen students was 69.7% compared to 74.7% of freshmen students at private colleges and for 2-year public colleges, it was 49.1% during the same period.

Tinto (2012a) asserted that the retention of students is shaped by their sense of belonging in campus social groupings, especially freshmen students that experience many adjustments in “forming new relationships” with peers, staff, and faculty (p. 27). In addition, Arana and Blanchard (2018) mentioned Hispanic students possess ethnic loyalties which could be useful instruments for college administrators to improve the integration of these students. Arbelo-Marrero and Milacci (2016) pointed out that undergraduate Hispanic nontraditional students could persist academically if they related more to their faculty and administrators and developed their capacity to move over hurdles inside their social structures which “affect their academic persistence” (p. 32).

Peña (2017) asserted that learning community such as community college First-Year Experience (FYE) programs helped struggling Latino males to complete their education in community colleges and move on to 4-year university programs to complete their bachelor’s degrees. Tinto (2012b) mentioned that some of the First-Year Experience programs develop effective learning communities by linking student social engagement outside the classroom, through events such as cultural shows and trips off campus. These programs help bridge the gap freshmen students experience with faculty and staff through experiences that provide a space for supportive relationships to develop. There are diverse types of learning communities designed to help undergraduate students continue their academic degree programs. Some offer students a cluster of courses which they are enrolled in with other members of their community; these help them build relationships that support them in completing their classes in a timely manner. These learning communities allow students to build support-clusters outside of their classrooms so that they engage in learning activities that help them expand their knowledge, which in turn, results in college retention.

Seidman (2012) asserted that learning communities (LC) allowed colleges to look at different techniques to deliver courses to students. There were common-interest student clusters in classes and in residence halls that produced connections within clusters. This type of cluster assisted students to integrate academically and socially into the college settings. Clustering the students formed support systems and a sense of belonging that helped them to navigate the college experience and in turn positively affected their retention.

The literature revealed that a gap exists in understanding minority student college completion. Hill and Woodward (2013) argued there should be more research in order to obtain a clearer understanding of the connection between the retention of college students and learning communities. One approach that colleges have cultivated to allay college freshmen attrition was the development of learning communities, but this method has not been carefully examined in several years (Huerta & Bray, 2013). The literature review on the role of the learning community in academic and social integration and ultimately on the retention showed that there is a need for further examination, particularly among minority students (Hill & Woodward, 2013). This study focused on the link between social integration in learning communities with the retention of freshmen minority students.

Background, Context, History, and Conceptual Framework of the Problem

Background. In the past, social integration has been linked to college retention rates; Tinto's (1975) retention model was a seminal work which suggested that students remained if they integrated socially and academically in the college setting (Erickson & Stone, 2012; Hagedorn, 2012; Nadasen & List, 2016; Seidman, 2012; Sperry, 2015). Researchers created theoretical models to elucidate the retention of students (Tinto, 2012b). For colleges to improve student retention rates, especially among underserved and students from low-income

populations, there should be close scrutiny of student academic progress during the first year of college.

According to Huerta and Bray (2013) there were numerous research studies which illustrated the benefits of learning communities and the positive impact it had on learning outcomes. Loes, An, Saichaie, and Pascarella (2017) asserted that learning in clusters increased positive student social integration, resulting in a higher probability of student retention into the second year of study. Social integration is important as Lopez and Jones (2017) explained that students were more successful in their programs when they interacted with faculty in college. Tinto (2012b) described the learning community as a mechanism for students to establish social and academic connections that in turn, helped improve learning for students.

Fink and Inkela (2015), stated that Dewey and Meiklejohn were some of the early pioneers of learning communities as they were critical of the Germanic college model. These pioneers asserted that colleges need to evolve to meet the needs of the large diverse student population as students do not acquire the ability to compete globally. Meiklejohn's "Experimental College at the University of Wisconsin in 1927" played a leading role in the history of learning communities in spite of its short survival "from 1927 to 1932" (Fink & Inkela, 2015, p. 7).

At the Experimental College, students gained knowledge through courses that were clustered; they also dined together and shared the housing during these five short years of the college's existence. The growth of learning communities in the last half of the 20th century echoed the work of Meiklejohn's learning community model to improve higher education. Tinto (2012b) stated that these learning communities helped to integrate students socially and academically and they took clusters of courses to finish their classes in a timely manner. Many

research studies showed how learning communities have a positive impact on learning (Grose-Fifer, Helmer, & Zottoli, 2013; Huerta & Bray, 2013).

Context. According to Krogstad and Fry (2014), college student enrollment had increased across ethnic groups, but this was especially true for Hispanics whose enrollment had tripled over the past decades. Despite this increase, Hispanics tended to enroll as part-time students at community colleges, not as full-time students or as students at 4-year colleges. Likewise, young African American rates of degree completion were very low (Krogstad & Fry, 2014). Swail (2014) emphasized that many minority students lack readiness for the rigors of college because of an education system that failed them. The body of literature revealed the theories for learning community and retention of college students seem to work together for freshmen success.

According to Morrison and Silverman (2012), an early retention model developed by Tinto in 1975 showed a pathway toward college completion. Tinto (2012b) stressed that colleges could boost the retention rates of their students, especially minority students from low-income households, by focusing on what happened in the classrooms, particularly during their first year. He asserted that classes should be structured for the freshmen to succeed with structured programs that gave students a chance to finish their studies in a timely manner. Tinto (2012b) also asserted that academic and social support was necessary for students to attain success in college. It was in the first year of college when students needed the most support to remain in college (Tinto, 2012b). However, the issue of increasing minority student retention still needs further exploration.

History. The literature revealed that theories of learning communities and college student retention were linked to the success of students. According to Morrison and Silverman

(2012), the student retention model developed by Tinto (1975) demonstrated a sequence towards college completion, but Bean and Metzner (1985) argued that the concepts of retention developed by Spady (1970), Tinto (1975), and Pascarella (1980) relied too much on the social attributes influenced by Durkheim's suicide theory which emphasized an individual's social and intellectual inadequacies to incorporate in the environment.

Hill and Woodward (2013) explained that the formation of learning communities is an attempt to enhance students' academic and social experiences since student retention was a challenge for many higher education institutions. They explained minority students were at risk to depart college due to poor transition to college and lost the sense to belong to the college environment. They found that student retention improved when students were in learning communities. Love (2012) found that many colleges implemented learning communities to improve student retention, their experiences in college, as well as their learning. Matthews, Smith, and MacGregor (2012) emphasized that college administrators must support learning community programs in order for them to be successful.

Mertes (2013) asserted that for many years, researchers developed many models about college student retention. Disappointingly, despite the great number of minority students registering at community colleges, the colorblind methods in use by many community college retention programs gave little attention to the verve of exploring the desires and perceptives of underrepresented minority college students. The issue of college student retention was still a problem and would continue to persist into the future. Although several community colleges had designed programs intended to raise retention rates, these curricula most often used the theories that focus on Caucasian students.

Conceptual framework. The conceptual framework used in this research study included the key concepts of social integration in the learning community, minority freshmen students, and retention. Most research about learning communities was based upon Tinto's (1975) research on student departure that explained the need for college students to integrate socially and academically into college culture, in order to avoid early college departure. Students tend to leave college early when they cannot make this transition (Tinto, 2012b). Tinto (1975) asserted that it was vital to consider that students come to college with prior characteristics such as their age, gender, ethnicity, high school GPA, and academic and social uniqueness which affected their performance in college (Astin & Oseguera, 2012; Tinto, 1975;).

College learning communities had a positive influence on student academic and intellectual growth (Braxton et al., 2014). Minority students were at risk to depart college due to poor transitions to college and a loss of the sense of belonging in a college environment (Hill & Woodward, 2013). However, student retention improved when these same students were in learning communities (Love, 2012; Tinto 2012b). Despite the great number of minority students registered at community colleges, college programs meant to support retention, might still lack techniques specifically designed to support minority students. Many of the community colleges have created programs intended to raise their retention rates, but these curricula most frequently center on the Caucasian majority (Mertes, 2013).

College student retention is still a problem and is expected to be a serious matter for future years. This led to the following research question: To what extent does social integration in a learning community increase the retention of minority freshmen students? Figure 1 shows the conceptual framework and the flow of operations for this research study. The variables of

the minority freshmen that would be taken into consideration were ethnicity, age, high school GPA, end of first-semester GPA, gender, social integration experience and re-enrollment status.

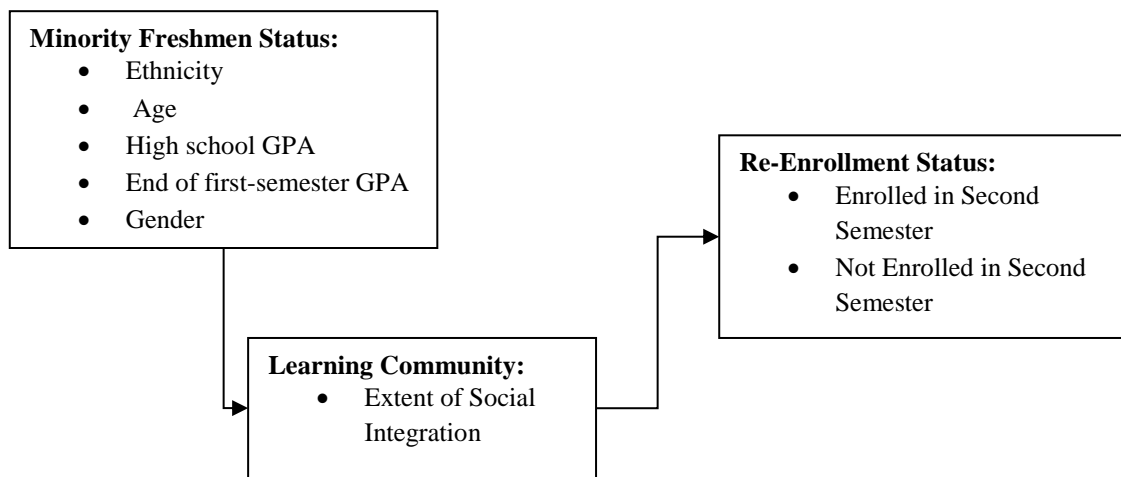


Figure 1. The conceptual framework and flow of operations

Statement of the Problem

This study addressed the problem of minority college student social integration and retention. It was designed to analyze whether social integration in a learning community impacted freshman minority student retention. Learning communities that utilized clusters of students and faculty that offered support, were used in the past to engage freshmen college students. Additionally, learning communities had shown to help minority college students (Huerta & Bray, 2013; Matthews et al., 2012). The review of literature revealed a need for more research on the academic and social integration of minority students in learning communities and its impact on retention (Hill & Woodward, 2013).

Minority college student completion rates were low in contrast to their non-minority counterparts (NCES, 2015) and there were few research studies that focused on minority students and learning communities (Hill & Woodward, 2013). The paucity of research on this subject does warrant an evaluation of social integration and retention outcomes of minority students who

participated in learning communities. Building on past research, a present look at this promising practice was important to add to the literature on minority student retention (Hill & Woodward, 2013). This study sought to understand whether minority freshmen college student social integration in a learning community was associated with their retention.

Purpose of the Study

The purpose of this study was to understand whether social integration in a learning community was associated with the retention of minority freshmen students. This study provided a deeper understanding of the social integration in learning communities for minority freshmen students as it relates to retention. This quantitative research examined whether social integration influenced re-enrollment of minority freshmen in learning communities from enrollment in the first semester to re-enrollment in the second semester during their first year of college.

Specifically, this study used a correlational model to analyze data, which were gathered using survey protocol. The research analyzed whether retention between first- and second-semester freshmen was associated with student experiences in a learning community. Data were gathered from 150 freshmen college students through social media with a link to the online Qualtrics survey on websites like LinkedIn, Twitter, Google+, and Facebook.

The model of this study was from past studies that compared retention based on participation in learning communities (Hill & Woodward, 2013). Yet this study sought to find out whether an association existed between social integration in a learning community and freshman minority students' retention. In addition, the study sought to find out the effect that

(a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, have on the retention of minority freshman students between the first and second semester of college. The study utilized a correlational quantitative research design to address the research questions below.

Research Questions

Question 1: To what extent does social integration in a learning community impact freshman minority student retention?

Question 2: What effect does (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, have on the retention of minority freshman students between the first and second semester of college?

Since both variables (social integration and retention) were categorical, a Chi-Square analysis was used for question 1 to investigate the extent that social integration in a learning community impacted freshman minority student retention (Adams & Lawrence, 2015). The second research question utilized regression analysis to determine the effect that (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, have on the retention of minority freshman students between the first and second semester of college (Hill & Woodward, 2013).

This research explored how social integration affected re-enrollment of minority freshmen in learning communities, which could possibly enlighten faculty and administration about how to improve their services for this population of students. If minority student retention is a concern for college administrators, an understanding of whether learning communities helped this particular group could be of an advantage (Berger et al., 2012).

Rationale, Relevance, and Significance of the Study

The research topic for this study relates to learning communities and their impact on the retention of minority freshmen students. With the low retention rates of the minority populations,

it was important to find out whether involvement in learning communities was associated with retention (Hill & Woodward, 2013). The rationale for this research was that in this climate of rising debates in higher education, institutions were seeking means to improve retention rates to meet accountability standards, especially among their minority student populations. As information about student retention had developed and expanded over the years to embrace institutional and student perspectives, the reasons to leave college remained connected to various factors, such as students' background, readiness, and their ability to integrate academically and socially (Tinto 2012b).

This research was also relevant because minority student retention was an issue of concern for college administrators. This study was designed to focus on understanding if learning communities benefit this group; the results of this study might provide insight for educational administrators interested in implementing a dropout intervention for making an informed decision (Berger et al., 2012). The National Center for Education Statistics (2016) reported that ethnic diversity of enrolled student populations had increased over the years but retention for this group had not increased. According to the National Center for Education Statistics (2018), the percentage of minority students in college was increasing while the percentage of Caucasian students “fell from 84 percent to 58 percent” (para. 9).

Over the past 40 years, the enrollment of Hispanic students increased by 13%, by 5% for Asian/Pacific Islander students, by 4% for Black students, and by 0.1 % for American Indian/Alaska Native students. During this same period, enrollment of Caucasian students dropped by 26% (National Center for Education Statistics, 2016). There was a need to identify strategies to support minority population in college so that they remained in college long enough to graduate. The freshmen year in college was a vital transition period for students; allowing

them to cluster in groups to take courses together which engaged and supported them to achieve academically was linked to increased retention (Loes et al., 2017). Although this research cannot be generalized to other colleges due to different student settings, it was still important to find out if participation in a learning community increased the retention of minority freshmen.

Definition of Terms

Retention. Although the research study was written in plain language, there were some terminologies that required a brief definition. For this research, retention was defined as the re-enrollment of freshmen from the first semester of college to second semester of college during the first year of college. The National Center for Education Statistics (2018) defined retention rates as “the percentage of first-time, full-time undergraduate students who return to the same institution the following fall” (para.1). Retention was described as the ability of a college to keep a student from preliminary enrollment to the completion of their course of study and graduation (Berger et al., 2012). According to Hagedorn (2012), retention meant remaining in college until “completion of a degree” (p. 83). Seidman (2012) defined retention as “student attainment of academic and/or personal goal(s)” (p. 270).

Social integration. Social integration was defined as the association between the undergraduate student and the social structure of the college. Social integration was the relationship that students built with their peers, faculty, and staff inside and outside of the classroom (Berger et al., 2012). According to Morrison and Silverman (2012), social integration that was formal “could be measured by the involvement of students in the college’s newspapers, clubs, student government or other forms of social activities” (p. 72). Furthermore, social integration included the freshmen students’ participation in a learning community.

Learning community. A learning community included the first-year courses that clustered the minority freshmen students and integrated them into college, as well as those students that chose the freshmen's residence hall. Laufgraben and Shapiro (2004) classified learning communities as those with paired or grouped students in courses, freshmen interest groups (FIGs), courses conducted using team teaching methods, and learning communities with residential-based sections.

Minority freshmen. Minority students were students who were non-Caucasian. They were African American, American Indian, Asian or Pacific Islander, and Hispanic students. According to US Legal (2016), the terminology minority student refers to "a student who is an Alaska Native, American Indian, Asian-American, Black (African-American), Hispanic American, Native Hawaiian, or Pacific Islander." (para. 1).

Assumption, Delimitations, and Limitations

The assumptions that ground this research study were the same students completed both the pretest and posttest surveys and their responses were truthful as well as the distribution was approximately normally distributed (Adams & Lawrence, 2015). There were quite a few limitations linked with research studies on learning communities' impact on the retention of minority freshmen. For this study, many of the independent variables prior to college were self-reported by participants and so the assumption was that their reports are accurate and honest. The limitation of self-reporting of the freshmen in the learning communities and the research questions rests on the subjective nature of their views. Further, the sample size is small, so the background and minority student social integration measures are limited (Adams & Lawrence, 2015).

The delimitations of the study included the focus of the study that was solely on a sample of minority freshmen students for the first semester of college. Although there was a wide variety among this sample of students, another sample of minority freshmen students from another college or state could offer different outcomes. Further, the study was delimited to 150 freshmen minority students across the United States.

Chapter 1 Summary

The history of retention research had shown diverse approaches to support retention, including learning communities; yet the use of learning communities as a retention measure had not been thoroughly reviewed over the past decade (Huerta & Bray, 2013). Matthews et al. (2012) emphasized that support from college administrators to develop programs that incorporate learning communities strengthened the quality of programs and improved the quality of college student engagement. Colleges that sought to increase the retention rate of their students, specifically minority students, might consider learning communities as an intervention during the first year of college. Many research studies had shown the benefits of learning communities and the positive influence on learning outcomes (Hill & Woodward, 2013; Huerta & Bray, 2013; Love, 2012; Sperry, 2015).

Chapter 1 provided the background, context, history, and the conceptual framework of this research study. Further, there were the problem statement, research questions, rationale, significance of the study and the definition of terms. In addition, this chapter discussed the assumptions, limitations and delimitations. In this quantitative study, I utilized the data collected from 150 freshmen minority students through social media with a linkage to the online Qualtrics survey on websites like LinkedIn, Twitter, Google+, and Facebook. In this quantitative research study, I investigated the effect of social integration in learning communities on retention.

I also investigated effect that (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, have on the retention of minority freshman students between the first and second semester of college. The results from this research would help faculty and administrators better serve minority students since the low rate of minority student retention was a concern across colleges (Berger et al., 2012).

Chapter 2 included a review of the literature and provided the reason for investigating the effect of social integration in learning communities on retention and Chapter 3 gave the detailed description of the research design with the chosen methodology and the sampling method as well as the instrumentation and the data collection method. Chapter 4 provided the detailed analysis of the collected data and interpretation of the results while Chapter 5 provided a discussion of findings, and the implications of the findings with regards to practice, policy and theory. Further, there were the recommendations for future studies and a conclusion for my research study.

Chapter 2: Literature Review

Introduction for Literature Review

Opening. Between 2000 and 2016, enrollment in college rose for all racial groups where the “total undergraduate enrollment in degree-granting postsecondary institutions increased by 28 percent” that is “from 13.2 million to 16.9 million students” (National Center for Education Statistics, 2018, para. 1). In 2016, the Hispanic population in the United States was 57.5 million or 18%, which was the largest racial minority group in this country. Additionally, the enrollment of Hispanic students in colleges and universities rose from 8% to 19.1% between 1996 to 2016 which meant there was an enrollment growth of 0.7 million Hispanic students.

Further, in the last 10 years, there was a distinct spike in enrollment of Hispanic students: 1.7 million from 2006 to 2016. As a result, there “has been an overall tripling of college enrollment” of Hispanics over the past 20 years (Bauman, 2017). According to National Center for Education Statistics (2018) in 2000 there were 13.2 million students enrolled in undergraduate colleges and in fall 2016 there was a 28% increase in enrollment or 16.9 million undergraduate college students. In addition, considering between 2000 to 2010, the statistics shows that there was a 37 % increase in enrollment of undergraduate students (13.2 million to 18.1 million).

Nevertheless, between 2010 and 2016, there was a 7% decrease in enrollment (18.1 million to 16.9 million). However, there is a projected 3% increase in undergraduate student enrollment (16.9 million to 17.4 million) from 2016 to 2027. The ethnic composition of the 16.9 million undergraduate college students in fall 2016 were 9.1 million Caucasian students, 3.2

million Hispanic students, 2.2 million African American or Black student, 1.1 million Asian/Pacific Islander students, and 129,000 Native American Indian students.

According to The National Student Clearinghouse (2017), the rate of retention was described as the percentage of freshmen students that returned to the same college for the next year. There was 61.1% retention of freshmen students from fall 2015 to fall 2016. Furthermore, Asian American student had the highest retention rate at 72.9%, while African American or Black students had the lowest retention rate at 54.5 %. At 4-year public colleges, the retention rate for freshmen students was 69.7% in comparison to 74.7% freshmen students at private colleges that returned for fall 2016. Additionally, at 2-year public colleges, the retention rate was 49.1% for fall 2016.

Swail (2014) expressed that minority students are often unprepared for college coursework due to the high school system that failed them as they entered college with low GPAs. Furthermore, increasing tuition rates also made it difficult for minority students to remain in college until graduation. Although, the student retention was a top priority for colleges and policymakers and yet the rate of graduation remained poor. Additionally, Voelkel and Chrispeels (2017) mentioned that many countries in the world strived to increase “student learning” by developing higher values in their educational systems (p. 1). However, the increase in students’ achievement was still unsuccessful. In their study, Voelkel and Chrispeels (2017) found that the engagement and support of teachers in professional learning communities (PLC) was effective as this could assist to improve the success of students.

Further, there was research that analyzed minority freshmen student retention and the strategies that helped them succeed academically. One strategy that had been developed but not thoroughly reviewed in the past decade and shown to promote retention was the implementation

of Learning Communities (LC), especially during the first year of college. There were different types of LCs, such as those that provided students with a cluster of courses for building community that supported them in completing their classes in a timely manner. These LCs permitted students to form support groupings, even outside of their classrooms, so that they were involved in more learning activities. This, in turn, helped them gain more knowledge which resulted in persisting in college (Tinto, 2012b).

Seidman (2012) asserted that setting up LCs allowed colleges to focus on different methods of course delivery for the students; clustering students together with the same interests in residence halls and in classrooms created a relationship within the group which, in turn, helped the students to integrate academically and socially into the college setting. Through these relationships, students in LCs developed a support system and a sense of belonging that helped them to navigate academic and campus life.

According to Huerta and Bray (2013), there were many research studies which showed the benefits of learning communities including the positive influence on learning outcomes. Loes et al. (2017) elaborated about how learning in groups enhanced greater positive student social integration, which resulted in higher chances for students to persist to the second year of college. Peña (2017) showed the use of a learning community for community college First-Year Experience (FYE) programs which helped struggling Latino males to persist and moved on to 4-year institutions. Some of the FYE programs built effective learning communities by encompassing social actions beyond the classroom, like cultural shows and field tours, to link spaces shared by freshmen students with faculty and staff.

Arbelo-Marrero and Milacci (2016) argued that undergraduate Hispanic nontraditional students could persist academically if they formed links with faculty and administrators and

developed skills to cross barriers inside their social structures which “affect their academic persistence” (p. 32). Additionally, Arana and Blanchard (2018) explained that minority Hispanic students had strong ethnic loyalty which was their predilection for their Spanish ethnic culture; the utilization of this ethnic loyalty could assist colleges in improving the incorporation of Hispanic students. Their research study stressed that the stronger the ethnic loyalty among Hispanic students, they were more likely to contribute to activities on campus. Administrators could use this strength of the students to enhance their social integration in college.

Study topic. The focus of this study was to determine whether student social integration through participation in a learning community was associated with the retention of freshmen minority students from the first semester to the second semester during the first year of college. Retention was referred to as a college’s ability to keep a student from initial enrollment all the way to completion of the program and graduation (Berger et al., 2012). This study examined whether there was a variation in freshmen minority student expected social integration and reported social integration for students that participated in a learning community. The relationship between the intended experience and actual student experience during the first semester in the first year of college was analyzed to establish whether retention between freshmen first and second semester related to their social experiences in a learning community. This study also examined whether a relationship existed between gender, ethnicity, age, high school GPA, social integration in the learning community, and end of semester first semester GPA of freshman minority students with retention.

Context. Based on the literature, theories related to learning communities and college retention explained how to support the success of freshmen. According to Morrison and Silverman (2012), an early model developed by Tinto (1975) demonstrated a progression

towards college departure. Tinto (2012b) put forth that if college administrators wanted an increase in retention rates of their students particularly the minority students from low-income households then they should focus on what goes on in the classrooms. College administrators should focus on the improvement of success in classes, especially for the freshman year and to structure teaching and learning towards student success.

College programs should be designed to give students the option of courses that led them to complete their studies in a timely manner; college administrators should focus on creating academic and social settings that promoted positive outcomes. Although college administrators had to work with student attributes beyond their control, they should set up long-term support to retain students and also designed environments for the success of their students. There should be academic and social support for the students to achieve success, especially during a student's freshman year of college; this was when students needed the most support to succeed and stay in college. Courses should be structured to promote success; in other words, students would succeed when the expectations were high and they had academic and social support from the college (Tinto, 2012b).

Significance. The National Center for Education Statistics (2018) defined retention rates as “the percentage of first-time, full-time undergraduate students who return to the same institution the following fall” (para. 1). The overall retention rates of students enrolled in 4-year college programs in fall 2015 were 81%; at 2-year public colleges the retention rates were 62%; at private non-profit colleges it was 67%; and at for-profit 2-year colleges, it was 66%. In the

United States overall, minority graduation rates remained low, despite these healthy first-year retention numbers.

According to a NCES (2015) report, the graduation rate for first time, full-time students who sought a bachelor's degree at a 4-year postsecondary institution between 1996 and 2008 (and graduated within four years) was 41.6% for Caucasian students, 20.5 % for Black students, and 27.5% for Hispanic students. These figures demonstrated low graduation rates, especially among minority students. This study sought to understand whether minority students' involvement in learning communities was linked to their retention. The first year of college was a crucial transition period for students; grouping students in various courses to support their engagement and academic achievement had been shown to increase retention (Tinto, 2012b).

Since minority student retention was an issue across institutions, focusing on understanding if learning communities benefited this group could be of benefit for schools working with minority populations. Even though the findings produced from this research might not be generalizable to other colleges due to the diverse student settings, it was important to determine whether participation in a learning community was related to retention of freshmen minority students. Sperry (2015) noted there was inadequate research to demonstrate the effectiveness of learning communities, particularly with regards to the achievement and perseverance of freshmen.

Berger et al. (2012) explained that student retention was a problem that college administrators have been experiencing for a long time. In this climate of accountability in higher education, there were numerous requests for improvement and research on how students learned and persisted, as well as questions about college education as an investment (Berger et al., 2012). As knowledge about the retention of students had evolved and expanded over time to include

institutional and student views, the reasons to depart from college still remain interlinked with various factors such as students' background, academic readiness, and their ability to integrate academically and socially.

Problem statement. In the United States, minority student retention had been an ongoing problem over the past few decades, despite different strategies used by institutions of higher education. The National Center for Education Statistics (2015) added that minority students' college completion rates were low in comparison to their non-minority counterparts. Lack of college completion brought its own set of challenges as minority student attrition limit their ability to secure living wages and job promotions. Most of these minority students had low high school GPAs and came from low-income families (National Center for Education Statistics, 2015). Huerta and Bray (2013) found that learning communities have been used in the past as strategies to engage first-year students at the undergraduate level by placing them in discipline-based or affinity groups that provided support.

Although learning communities have been shown to benefit minority students to some extent, this strategy had not been thoroughly or recently examined among minority populations in college learning communities (Huerta & Bray, 2013). I investigated whether participation in learning communities impacted freshman minority student retention. Furthermore, my research study inquired the effect that (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, have on the retention of minority freshman students between the first and second semester of college.

The review of literature on the function of learning communities for academic and social integration and their influence on student retention does need further examination, especially among minority students (Hill & Woodward, 2013). This paucity of research warranted a review

of the practices that held potential to help this group in their college completion goals. Though learning communities had been assessed in the past, a current look at this promising practice was justified, especially among minority students.

Hill and Woodward (2013) found that learning communities that were formed to encourage the success of students in general, seemed to improve their retention rate and suggested that further research should focus on the link between at-risk students' GPA and learning community participation. This study sought to understand whether social integration in a learning community impacted freshmen minority student retention.

Conceptual Framework

Nadasen and List (2016), as well as a Sperry (2015), offered that the retention model developed by Tinto's (1975) was an influential work which suggested that college students who endured and remained at an institution were the ones that adapted well to the college's social and academic setting. In addition, Tinto's (1975) longitudinal model described a student's movement within an institution of higher education across various stages of the degree cycle. The model described the longitudinal movement of the student as they progressed through a degree program and the connections between the learner and the college's academic and social systems in their progress toward graduation.

Learners' understanding of those attributes repeatedly changed their goal and college commitments in habits which tended to support persistence or various forms of departure. Additionally, students came to college with many characteristics that included gender, ethnic background, and aptitude which have an influence on their academic persistence (Tinto, 1975). These attributes might also influence academic persistence. The conceptual framework for this study is presented in Figure 2. There are the independent variables which are the ethnicity,

gender, age, high school GPA, social integration experience, and end-of-first-semester GPA.

Retention is the dependent variable as shown below.

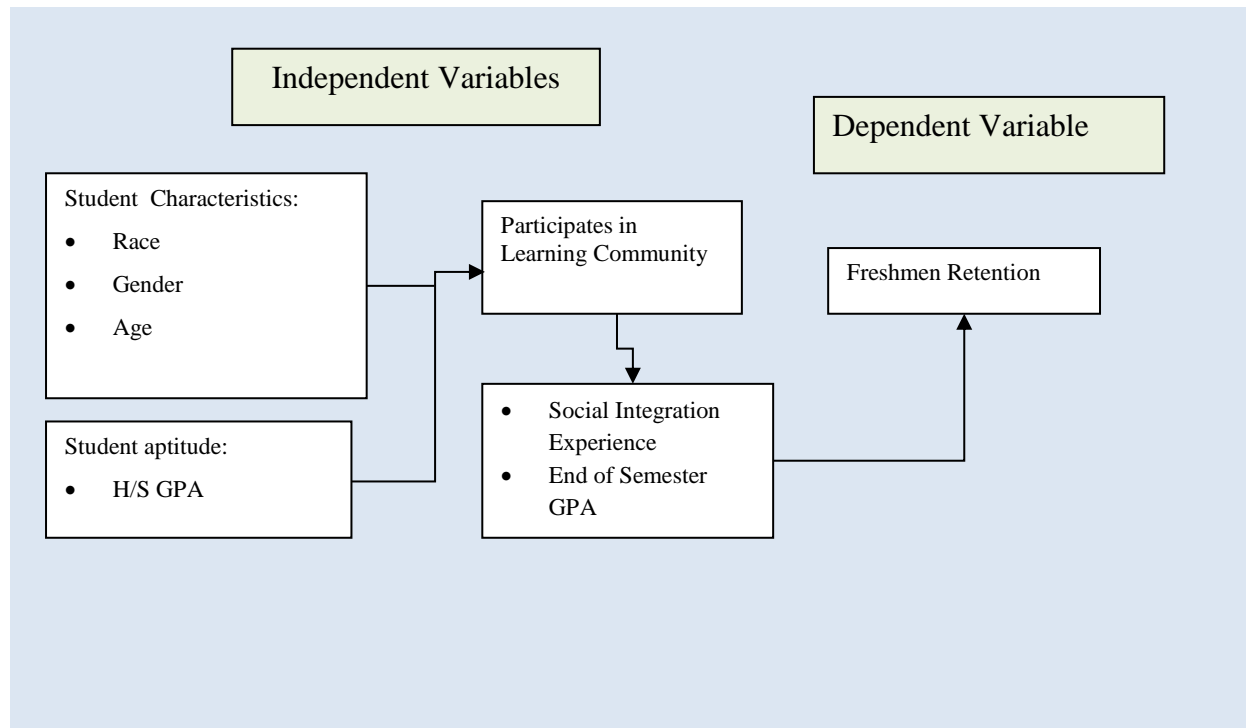


Figure 2. A conceptual schema for dropout from college. The conceptual framework showing race, gender, age, high school GPA, social integration experience and end-of-semester GPA with retention.

Figure 2 demonstrates the progression toward departure from college which demonstrated a movement of connections between the learner and the college's academic and social systems. Furthermore, Tinto (1987) explained that retention is associated with student aptitude and interactions that take place within the college (as cited in Hagedorn, 2012). If students failed to integrate academically, they might be less committed to their college completion goal. Failure to integrate socially lessens their commitment to the educational institution; therefore, there was a strong need for a link between the college setting and the commitment of the students. Further,

those learners that struggle and do not persevere are the ones that do not make an effort to incorporate socially and academically (Hagedorn, 2012).

Astin and Oseguera, (2012) also referred to Tinto's retention model as they explained that when students repeatedly change their goals and college commitments, they departed college early. It was also important to note that students also had prior experiences before they entered college, such as their prior academic coursework as noted by a GPA, academic and social attributes, personal circumstances such as their social standing, ethical characteristics, as well as their gender and age; these affected their performance in college both directly and indirectly.

Ezeala-Harrison (2014) retrieved data from a pilot study conducted at five Historically Black Colleges and Universities (HBCUs) to examine the attributes that contributed to the retention of African American students. There was classification of retention variables which were the student's personality qualities, family background, financial circumstances, societal aspects, and many college characteristics. The retention variables were placed into three groups which were attitudes, behaviors, and situations; these became prerequisites that could be utilized to determine the retention of students. These attributes were investigated to determine how African males and females were affected differently with regards to their decision to stay in college. The author applied descriptive statistics techniques and found that both males and females perceived their program of study as important to them.

Females tended to interact more easily with faculty as compared to their male counterparts, so female students were more apt to obtain academic assistance and counseling provided by faculty; consequently, their academic achievement was enhanced. Although the participants in this qualitative study were not in learning communities, a very high percentage of both African American males and females responded that peer interaction was vital in their

choice to remain in college (Ezeala-Harrison, 2014). Moreover, as the attrition of students remained an issue in higher education, there should be a continued quest to find ways to retain students. This study wanted to find out whether social integration in a learning community affected the retention of freshmen minority students.

Social integration and history of learning communities. Social integration is important to student retention as Lopez and Jones (2017) demonstrated in a study that found that interactions between college students and faculty make students more academically successful. Their study found that frequent interactions, as well as relationships students develop with faculty, aid in student integration into the college. They stated that the “more that students visit and approach instructors after class, discuss career plans, and ask advice about class projects at both the community college and university, the more likely they are to adjust better academically in a university” (Lopez & Jones, 2017, p. 176).

Tinto, (2012b) asserted that learning communities have several features that create social connections that enhance the learning of students across academic disciplines. He further stressed that learning communities that are integrated yield vital benefits for learners as they made important sustainable peer connections and gained support through the linkages within their groups. The relationships students developed in learning communities motivated them towards an academic commitment. Consequently, students in learning communities would be inclined to study more hours as they spent more time in their groups.

The history of learning communities goes back to early pioneers, as Fink and Inkela (2015) explained that Dewey and Meiklejohn, critiqued the “Germanic model of higher education that laid the philosophical foundation for the contemporary learning community movement” (p. 6). Critics of the Germanic model of higher education stressed that this model

does not engage college students completely in their journey of learning. Dewey emphasized that learning must be an active process that incorporated collaboration: students and faculty should be engaged in discussions rather than knowledge transfers from instructor to students in a classroom. The Germanic model lacked any focus on the achievement of students which drew criticism from American educators that led to the movement for learning communities (Fink & Inkelas, 2015).

To meet the needs of a diverse and large population of students that sought higher education, the education reforms evolved to include learning communities because there were ardent demands to reform the undergraduate education in the United States in the 1980s and 1990s. The reason for reforms echoed the same claims made by Dewey and Meiklejohn almost one hundred years ago: colleges were too inert, disjointed and not engaging to the students. Therefore, many colleges were forced to find better ways to help students. One way was through learning communities where students completed themes of courses and were placed in small cohorts to encourage collaboration (Fink & Inkelas, 2015).

Models of learning communities. Tinto (2012b) explained that many colleges have implemented learning communities to provide academic and social support to their students. Inkelas and Soldner (2012) identified five types of learning communities which were: paired or a clustered courses, small cohorts of students when there was increased enrollment, team-taught courses, gatherings of special populations together, and residential learning communities (as cited in Fink & Inkelas, 2015). These were the five dominant types of learning communities at colleges and universities at present. These learning communities had paired or grouped students in courses, freshmen interest groups (FIGs), and courses conducted using team-teaching

methods, as well as learning communities with a residential-based section. The paired courses united twenty or thirty students as a block to attend classes collectively.

For example, a writing course with a history course that incorporated a weekly colloquium would be a paired course. This weekly group discussion allowed learners and professors to become familiar with the integration of courses as well as the environment it produces; it enhanced the curricular linkage of courses. The cluster or grouped courses schedule about five classes in a clustered community where some of the classes were joined across the program.

The large-group model often included freshmen for orientation classes to familiarize them with smaller cohorts of students who could be utilized as team and study groups that were referred to as freshmen interest groups (FIGs). Another type was the residential learning community that allowed cohorts of learners to live in an organized environment and took various courses together. The premise behind this model was that learning is not confined only to classrooms; students could also support one another based upon a social structure. This category enhanced social interests like group dining and retreat for faculty and students (Laufgraben & Shapiro, 2004).

Learning communities and freshmen. Sperry (2015) and Rocconi (2011) wrote that learning communities group freshmen together in various courses. Seidman (2012) explained that learning communities allowed a college to focus on alternative methods of course delivery and programs to their learners; he added that clustering learners together with comparable interests in residence halls and in classrooms produces a bond within the group which assists learners' academic and social integration. This integration helped students develop support systems, a sense of belonging, and understood how to better navigate a college campus. Some

colleges used learning communities to reorganize undergraduate student involvement and to enhance their participation through the modification of curricular models.

Furthermore, Tinto (2012b) stated that learning communities could impact the success of students indirectly when faculty collaborate and made sure that related courses offer a comprehensible, joint-learning experience that was customized to meet student needs. Moreover, many colleges established learning communities as a means of offering academic assistance for their students; by adding extra support and relating themes in courses, students swiftly made connections to one another and their academic programs, thereby enhancing their performance (Tinto, 2012a).

Tinto (2012a) also pointed out that since freshmen are apt to be academically underprepared, many colleges embraced learning communities to enhance the basic skills needs of their students. On the other hand, Rocconi (2011) argued that participation in a learning community and gains in education were not directly related but indirectly linked to educational progress through student engagement. Hill and Woodward (2013) looked at how learning communities influenced the retention rate of learners at an urban public research university. The university integrated “all students who had been accepted into the College of Education at Level 1 for the fall 2007 semester” (Hill & Woodward, 2013, p. 643).

These researchers mentioned that the retention of students was an issue in colleges due to lack of academic readiness and giving access to groups that were traditionally barred from university are risk factors to early college departure. The participants were 631 students from the College of Education (COE) at the first level, of which 261 were in the Learning Community (LC). The researchers set out to determine whether participation in an LC predicted student retention and success.

The researchers also wanted to know the retention variation in relation to ethnic group, and Grade Point Average (GPA) or American College Testing (ACT). These researchers performed standard multiple regression on the data using several credits for five semesters as the dependent variable. The independent variables were GPA, ACT score, ethnic background. These independent variables were coded zero for minority students and one for white students; participation in a learning community was coded as one for participation and zero for non-participation. The outcome of their research indicated that learning communities improved retention rates.

Huerta and Bray (2013) investigated how learning communities influence Latino freshmen. They found learning communities had a positive effect due to Hispanic students' ability to learn collaboratively. Sperry (2015) set out to identify predictor variables prior to college which could operate as forecasters for freshmen retention in communities of learning. The author focused her study at a southern Texas public university that was predominately Hispanic. In this study, traditional freshmen were asked to register in a learning community for first-year students.

The study gathered GPA and reenrollment data from fall 2010 to fall 2012 and computed results using logistic regression to predict re-enrollment and probation standing "independent of learning community." The researcher found that high school GPA had a strong influence on students' ability to succeed in college (Sperry 2015, p. 12). Sperry (2015) also discovered that college students with good high school GPAs continue to perform well in learning communities in their freshmen year. Further, the findings showed many of the predictors like the number of days from orientation and being eligible for Pell Grant were also valuable predictors of the

retention of freshmen. The author concluded that freshmen students that performed well in high school would continue to do so in learning communities.

Another study on learning communities was conducted by Grose-Fifer et al. (2013). There was examination if students in psychology-based learning communities scored higher on psychology examinations than their peers in normal classes; there were two kinds of learning communities' investigation: the "connected and the unconnected" (p. 57). In the curriculum-connected learning communities, there were relationships between English class readings and units in psychology while there were no connections in the interdisciplinary classes of the student. The results indicated that the learners in connected learning communities received higher scores on examinations.

Pike, Kuh, and McCormick (2011) were interested in the association between learning community and students' engagement. Their three research questions were developed to determine whether LC involvement relates to the engagement of students, while they controlled for student demographics and past academic outcomes. The next question was to determine whether there was a difference between participation in learning communities and the engagement of students related to the status of the students in the classroom as well as if there are any relationships to the features of the college.

Pike et al. (2011) used the method of hierarchical linear regression to analyze their data in three phases with three questions. Since the involvement in learning communities was dichotomous, they used the differences in the engagement scores as a feature for learning community participation as well as student characteristics (Pike et al., 2011). In other words, they studied the dependent associations between learning community participation and the involvement of learners. They found an optimistic and meaningful relationship between

participation in learning communities and the involvement of students during their freshmen and senior years at college.

Minority students. Minority students shared some common attributes that contributed to their lack of ability to fit in socially and academically in higher education. Arana and Blanchard (2018) asserted that when there were activities available on campus to engage minority students, their academic performance improved. Further, an individual's fondness for a cultural perspective that corresponded to their cultural identity and pride was referred to as their ethnic loyalty. Ethnic loyalty impacts Hispanic college students' engagement on campus that contributed to success.

Tinto (2012b) stressed that many students arrived at college unprepared for the rigors of college-level work and struggled in their ability to fit into the culture of the college, all of which made them candidates for academic departure. Arbelo-Marrero and Milacci (2016) found that nontraditional undergraduate Hispanic students who developed peer connections with other Hispanic students found academic motivation in the college context and persisted academically. Moreover, Arana and Blanchard (2018) found that undergraduate Hispanic students who were "more ethnically loyal are more likely to partake in campus resources than other students" (p. 332). They argued that ethnic loyalty could be a useful instrument for administrators and faculty to use to gain a richer understanding of minority students as well as to enhance student integration.

National Student Clearinghouse Research Center (2017) reported that for the students that entered college in fall 2016 and returned in fall 2017, the retention rate of Asian and Pacific Islander American students was the highest at 73.4% (119,822 Asian and Pacific Islander American students). For other racial and ethnic groups, the retention rates for the same period

were as followed: 52.5% for African American or Black students (150,908 students), 59.6% for Hispanic students (274,273 students), 62.6% for Caucasian students (829,617), and 50.1% for Native American students (9,915 students). Even though minority students' enrollment was on the rise, they also departed college at a higher rate than Caucasian students.

Desai and Stefanek (2017) reviewed methods that were implemented to increase retention in engineering studies in the United States. They mentioned that Kline, Aller, and Tsang (2011), applied an approach called the "Science Talent Expansion Project (STEP)" to increase freshmen retention in the engineering program at the Western Michigan University. The approach involved combining first-time, first-year STEM students into discipline which were specific learning community cohorts for the whole period of their first year. "The STEP program enlarged freshman retention at Western Michigan University from 57% to 65%, which is greater than the 62% retention rate recorded at peer institutions" (Desai & Stefanek, 2017, p. 3).

The Office of Evaluation and Assessment (2017) reported that first year learning communities (FYLCs) were created at the University of California where "students do the same set of courses together in their freshmen year as well as participate in other activities, both academic and social" (p. 1). The aim was to encourage a sense of community, support academic engagement and enlarge the rates of retention. For the duration of 2008 to 2016, participation in FYLCs had increased and the first year retention rates for students in learning community were constantly higher than students that did not participate in learning community.

For 2008, those freshman that participated in learning community had a retention rate of 88 % , while freshman that did not participate in a learning community had a retention rate of 85%. For 2015, the freshman learning community participants had a retention rate of 92% and

freshman that did not participate in a learning community had a retention rate of 89% (Office of Evaluation and Assessment, 2017).

Retention of African American or Black students. Williams (2018) stated that many HBCUs have low rates of graduation, as well as high rates of first-generation students. The author argued that HBCUs could improve retention by creating an atmosphere which inspired receptiveness and provided opportunities for students to network academically and socially. According to Palmer, Wood, and & Arroyo (2015), African American or Black males had low college retention rates. They also asserted that African American or Black men at HBCUs could get assistance from these institutions, especially in the first semester in the freshman year as they endeavored to complete their program.

When Black freshmen males started college and they got help to engage in the college community as well as to authenticate their academic and interpersonal growth when they came to college would support their adjustment, upsurge their self-confidence to be academically effective and increased their integration academically and socially. Hunn (2014) asserted that several African American students mainly grew up in African American regions, joined African American churches, and were connected with African American societal rings. Those African American students who attended Predominantly White Institutions (PWIs) frequently became reserved and lonely due to the awe-inspiring nature of departing from their comfortable setting of color to attend PWIs. By providing these African American students with mentors that were colored would ease their anxiety and they soon realized that they could achieve their goals (as cited in McClain & Perry, 2017).

Retention of Hispanic students. Elliott and Parks (2018) emphasized that Hispanics or Latinos had experience rapid population growth in the United States and were likely to have an

increasing influence on this country's economy. Nevertheless, Hispanics' college graduation rates were lower than other ethnic groups, due to cultural, social, and economic barriers they encountered in their lives. Hispanic students craved a sense of belonging and wanted to feel accepted by their peers and faculty at the university (Elliott & Parks, 2018).

Hispanic undergraduates came to college with a set of cultural attitudes and they wanted to feel comfortable to express themselves and those students that were incapable to do so might feel incompetent to attach with their campus and ultimately, they departed from college completely. Furthermore, Hispanic students were underprepared in high school for admission to college. However, colleges could resolve this problem by offering developmental courses to counteract discrepancies in academic preparation (Elliott & Parks, 2018). Marrero and Milacci (2018) found that Hispanic Serving Institutions (HSI) provided an affluent sociocultural setting where Hispanic students could develop relations with Hispanic peers and faculty, as well as access to valuable resources that supported their academic perseverance.

Retention of Native American students. Chee, Shorty, and Robinson Kurpius (2018) stated that Native American Indian undergraduate students experienced academic stress. They argued that classrooms and campuses should be more inclusive, more tolerant, and more inspiring for all college students. For example, there was need for diverse faculty and students to be mentors as well as role models for the academic success of these students. Furthermore, activities that featured culture in classroom discussions or events that included the artwork of Native American Indians in college would inspire more appreciation of their culture could promote the ethnic pride of these students.

These changes could decrease academic stress and probably stimulate students to complete their degrees. Seidman (2016) found commonalities in the incapability of African

American, Hispanic students and Native American students to become effectively integrated academically and socially in higher education. These commonalities included poor academic preparation, absence of a large of group students with comparable ethnic features, and financial support.

Seidman (2012) described a retention formula produced by Seidman (2004) from Tinto's theory which is "Retention = Early Identification + (Early Intervention + Intensive Intervention + Continuous Intervention)" (p. 269). Each component of this formula was described for a deeper understanding. Retention was defined as student's achievement of academic and individual aspirations, despite the number of years spent in college. Early identification of risk of failure or a learner's threat of failing at an institution was a key component in supporting student retention.

Seidman (2012) also explained that pre-college attributes, such as GPA and ACT scores, could be a good indicator of retention. Seidman (2012) described the next term in formula which was "Early Intervention" as the onset of an intervention process or activity at the soonest feasible time of the notification of the problem (p. 268). Further, the terminologies of early intervention and intensive intervention were meant to provide an intervention adequately to promote an effective change while Continuous Intervention was an intercession that went on until the change happened (Seidman, 2012).

Review of Research Literature and Methodological Literature

The review of literature revealed that there were several methodological issues related to measuring the impact of learning communities on freshmen retention. The studies analyzed pre-admission variables on freshmen academic performance, addressed issues of learning communities' impact on retention, examined the influence of variables prior to college enrollment, and student persistence. Adams and Lawrence (2015) explained that qualitative

analyses permitted researchers to organize and summarized information such as discussions and responses obtained from asking open-ended questions.

There was the explanation that qualitative analysis does not involve numbers, unlike quantitative analysis. Qualitative studies could be viewed as subjective as data were based on personal views, feelings, and thoughts of participants; However, there was a rich insight to issues that statistical analysis did not provide. Creswell (2013) asserted the benefits of qualitative research were to explore a problem and to learn more about a group of persons experiencing a specific phenomenon.

Creswell (2013) also stated that qualitative research was useful when there was need for a complex, detailed investigation of a problem. He asserted that researchers could accomplish this outcome when they talked directly to individuals who had experience with a particular phenomenon; it was those particular phenomena that told original stories of expectations or that could be found in literature because the individuals were empowered to express themselves and offered their voices in the story as well as lessened the influence of the associations that occurred between researcher and the individuals in the study (Creswell, 2013).

Quantitative and qualitative methods in the literature review. The decision to utilize either quantitative or qualitative research methodologies could be a challenge, but familiarization with prior research and the conceptual framework that guided a study should help with the decision. In this section, there would be a review of the methodological techniques used to understand learning communities' impact on the retention of minority freshmen.

Weiss, Mayer, Cullinan, Sommo, and Diamond (2015) evaluated the learning communities at Kingsborough Community College (KCC) by performing Manpower Demonstration Research Corporation (MDRC) calculations. They found that the effects of

learning community varied across different kinds of students. Visher, Weiss, Weissman, Rudd, and Wathington (2012) stressed that the results were not consistent within that study, nor inveterate across other studies to offer decisive outcomes from those analyses (as cited in Weiss et al., 2015). The KCC LC evaluation represented one of the first large-scale randomized assignment assessments in higher education, and the results presented represented one of the first wide-ranging higher education researches to track students over an extensive period (Weiss et al., 2015).

Ezeala-Harrison (2014) examined the attributes that contributed to the retention of black students by retrieving data from a pilot study conducted at five HBCUs. There were classifications of the variables as attitudes, behaviors, and environment; then there were descriptive statistics techniques to investigate how these retention characteristics affected black male and black female with regards to their decision to depart college. The analysis showed that females students tend to interact more easily with faculty as compared to male students, so female students gained more academic assistance and counseling from faculty; therefore, Black female students performed better academically than their Black male peers.

Although the participants in this qualitative study were not in learning communities, their responses revealed that 94% of both genders gave responses that peer collaboration was either moderately vital or very significant in their choice to remain in college. In other words, peer networks were central to the framework of the learning community (Ezeala-Harrison, 2014). Hill and Woodward (2013) examined learning communities' impact on the retention of students at an urban research college that serves traditionally underserved students. A quantitative approach was utilized to conduct a longitudinal study using data collected from two previous

years about independent variables such as the ACT score, numbers of credit hours received, high school GPA, demographic data, and involvement in learning communities.

In this study, the standard multiple regression between the dependent variable of student retention and the independent variables were done. The researchers' statistical analysis showed correlations among the variables and determined that membership in a learning community was the most important forecaster of academic retention. However, Hill and Woodward (2013) stated that more research was needed in the future to gain a wider understanding of the specific connections between student retention and their involvement in learning communities.

Hollands (2012) studied the involvement of African American and Hispanic students in a predominately white institution (PWI) who partook in the Louis Stokes Alliance Minority Participation (LSAMP) which was a learning community program and utilizing Tinto's retention model as a theoretical framework. The variables investigated were linked to student participation in a learning community, academic persistence, and retention. Hollands (2012) used a qualitative case study methodology to understand minority student perspectives as they reported their experiences in learning communities; data were also gathered in the students' natural environment.

The researcher utilized qualitative procedures to identify and characterize the multi-layered structural details of the LSAMP learning community program that impacted the interactions and outcomes of students. The participants varied in their ages, genders, demographic characteristics, and the amount of time spent in college. The study was established to gain an understanding of the influence of specific programs on minority students that could increase persistence and retention for African American and Hispanic or Latino students. The

results indicated that persistence of minority students in the LSAMP program at a predominantly Caucasian college influenced their integration socially and academically.

These minority students were academically and socially positive with optimistic family values that assisted them to complete their college degree. Hollands (2012) explained that minority students experience barriers in academic persistence which hampered their degree completion plans; however, by writing down their encounters, the research could reveal strategies to retain minority students. Rocconi (2011) stated that learning community involvement had direct educational benefits, which could be related circuitously to educational improvements through participation of students.

The author used a multiple linear regression analysis and a regression equation that incorporated independent variables of gender, ethnicity, ACT scores, enrollment in learning community, interaction with faculty and other students, and efforts to complete coursework. Once the statistical analysis was completed, it was shown that the perception of students towards their college environment increased positively as they interacted more with their classmates in a social context. However, there was no noteworthy outcome on students' perceptions of the intellectual atmosphere on any of the variable (Rocconi, 2011). Pike et al. (2011) tested the link between learning communities and student engagement. The results showed a positive and meaningful association between student involvement in learning communities for their first and senior years in college.

Purdie and Rosser (2011) examined the relationship between GPAs and freshmen retention in living-learning communities. The performed a multiple regression and logistic regression analysis were performed to find out whether involvement in freshmen interest groups (FIGs), academic theme floors (AFTs), and first-year experience (FYE) courses were linked to

improved first-year grades. The results showed that involvement in an ATF or FYE did not contribute to higher grades or retention. However, there were suggestions that student retention could increase if faculty members and student affairs experts cooperated to design programs that linked the course of study with the experience in the residence halls, as well as encouraged collaboration with students, peers, and faculty who all had a similar academic concentration.

Buch and Spaulding (2011) studied the influence of curricular-based learning communities on student success for first-year students majoring in psychology from 2003 to 2008. The pretest and posttest survey were utilized to study students in the Psychology Learning Community (PLC) as well as those who were not in the PLC. The results revealed that the benefits of joining a PLC increased first semester GPAs as well as increased retention. Shapiro and Levine (1999) also reported similar benefits in their studies of learning communities (as cited in Sperry, 2015).

Issues with quantitative and qualitative methods. Quantitative methods utilized data that were numerical; therefore, statistical analysis provided information in the form of descriptive statistics such as the mean, mode, median, and standard deviation. However, Adams and Lawrence (2015) argued that some descriptive statistics were not suitable for all kinds of variables. Therefore, the task was to recognize the most suitable statistics to explain the various features of a sample; researchers should select an analysis tool that could best represent their data.

In addition, Creswell (2013) noted qualitative research data were obtained in various ways, such as face-to-face interviews, participant observation, and document analysis. Multiple information sources helped validate interpretations of the results. Furthermore, quantitative

research was a way for testing theories objectively by looking at the association between variables that are quantifiable. usually with tools that could statistically analyzed numerical data.

Review of Methodological Issues

The more frequently utilized methodological approaches in the review of literature were multiple regression and logistic regression, which are quantitative methods. Most of the studies conducted focus on the general freshman or student population; this study sought to determine whether social integration in learning communities was associated with the retention of minority freshmen students. The method to investigate whether participation in a learning community increases the retention of minority freshmen involved a quantitative approach. This quantitative research study employed regression analysis as well as a pretest and posttest survey.

Limitations. There were several limitations associated with the research studies about how learning communities impacted the retention of minority freshmen. Most of the studies included independent variables based on self-reports by participants prior to entering college, and so these researches had to assume these self-reports were accurate. Among the studies reviewed here, some findings were limited to only one institution and therefore findings might be limited in their generalizability.

However, if the sample of students were drawn from one college or from one state, the findings might be different. Furthermore, small sample sizes would limit the background and minority student integration measures. Additionally, freshmen participation in learning communities, especially in residential communities, was voluntary, this could indicate a self-selection bias (Adams & Lawrence, 2015). Moreover, qualitative analysis permitted the researcher to categorize and to recapitulate information from qualitative actions like interviews and questionnaires that have open-ended questions (Adams & Lawrence, 2015).

Adams and Lawrence also explained that although this method could produce useful data there were shortcomings to the method, such as length of time to completion and invasive personal questions. In addition, survey questionnaires were structured with close-ended questions that restricted the choices of respondent answers (Adams & Lawrence, 2015). The options in such a survey could be dichotomous, such as yes or no answers. For example, a “forced-choice response” question would be a “yes” or “no” response to “Are you in a learning community?” Another option is a Likert-type scale where respondents “strongly disagree, disagree, are neutral, agree and strongly agree,” which gave the respondents the choice to sustain a neutral viewpoint.

For example, a question like “Get involved in student clubs or organizations” offered a choice for one answer that is either “strongly disagree, disagree, neutral, agree or strongly agree.” This option had an advantage over force-choices options such as “strongly disagree, disagree, agree and strongly agree” where the respondent’s answer would be limited to only disagree or agree to some extent. However, every kind of response has strengths and weaknesses (Adams & Lawrence, 2015).

Although open-ended responses for qualitative research gave the respondents a chance to express their opinions, instead of a scale-type response, these responses could take a lot of time to categorize and interpret, which could lead to complications. However, closed-ended responses for quantitative research offered precise and restricted answers about a situation and it was less time consuming to manipulate scores for the respondents (Adams & Lawrence, 2015).

Internal and external validity. Adams and Lawrence (2015) described external validity as the capability to generalize the outcome of a study to other situations, other models, and other approaches. Strain always happened between internal and external validity since the better the internal validity, the more difficult it is to attain external validity (Adams & Lawrence,

2015). The internal and external validity of the following research studies were examined in the following paragraphs.

Black, Terry, and Buhler (2016) researched the influence of specialized courses on student retention as part of the experience of freshmen as there were comparisons between the student retention rates of five groupings of courses at a mid-sized, regional university in Texas. The results showed that limited external validity because all the information was taken from one university. There was a recommendation that future research should obtain data from multiple colleges.

Marrero and Milacci (2018), utilized a phenomenology study to find out how Hispanic or Latino non-traditional students at two HSIs described academic perseverance to complete college. The data collection was validated through the use of interviews, writings from journals, and focus groups which confirmed the accuracy of content and to verified that the interpretations were correct. The analysis of the collected data included several levels and coding stages.

Buch and Spaulding (2011) utilized a matched control group design to scrutinize the association between the participation in a psychology learning community (PLC) on a variety of student achievement measures. The data were gathered from one PLC in one department, which does limit the external validity of the research. The issue of self-selection in a matched control group design also threatened the internal validity of the study as the students might not be representative of the whole population.

Djulovic and Li (2013), used data-mining tools and procedures on the enrollment information of freshmen students in order to predict retention. It was mentioned that the prediction was great. However, the tools and procedures could be improved if more features of the freshmen's background were included, such as their parents' educational level, first-

generation college student status, as well as the number of credits the students took in their freshmen year. There were also threats to the internal validity as many students were those that were retained that caused an imbalance in the distribution of data distribution on the on feature of the class. The researchers mentioned that this imbalance could subsequently disturb the accuracy of the results; therefore, future research should use enhanced classification designs to deal with the imbalance set of data.

Sandoval-Lucero, Maes, and Chopra (2011), examined the educational results for a learning community intended for non-traditional Hispanic students that were registered in a grant-funded package to become bilingual educators. The weakness in this design and methodology was the small sample size; the external validity was threatened because of lack of generalizability. Furthermore, the internal validity was threatened since the qualitative data could be interpreted in multiple ways. In addition, the Hispanic students were recruited from the grant project that could influenced their comments about the funded project.

Motl, Multon, and Zhao (2018) conducted a research to find out which attributes predicted Native American Indian student retention at a tribal university in the Midwestern United States. It was noted there was limited external validity of the study since it focused on one college; there was the limitation against generalizations to other colleges with tribal students. The external validity was also restricted because the researchers surveyed students in October of their freshmen year when many students had already departed college. Furthermore, the researchers conducted the survey on one day only and students that were absent were not offered a choice to complete the survey; therefore, infrequent or chronic absentees were not represented in the sample.

Synthesis of Research Findings

This section synthesized the findings of the literature review. Common themes that would be discussed were the benefits of learning communities, as well as the factors that influence the retention of minority students such as ethnicity, gender, age, high school GPA, ACT scores, and first-generation status.

Benefits of learning communities. Students benefited from learning communities as they were grouped together in various courses which helped them to develop friendships and formed a sense of community. This, in turn, supported their academic persistence (Buch & Spaulding, 2011; Rocconi, 2011; Sperry, 2015; Tinto, 2012a). The establishment of learning communities encouraged and supported student academic accomplishment by offering them the opportunity to interact meaningfully with their peers and faculty. This has been found to enhance their sense of belonging on campus, to help them navigate first-year transitions in college, and to increase retention.

Matthews et al. (2012) explained that learning communities should continue to change and broaden in order to address challenges in higher education. Learning community programs had developed and won the support of administrators of colleges to address areas of academic and social engagement while also addressing student needs (Matthews et al., 2012). Numerous students were enrolled in learning communities, such as First-Year Experience programs (FYE), and residence hall experiences. The pioneers of learning communities made these programs centered on freshman students and overall education, to increase student retention (Matthews et al., 2012).

Pike et al. (2011) studied the dependent associations between learning community participation and the involvement of learners. There was a revelation of an optimistic and

meaningful relationship between participating in learning communities and the involvement of learners at the freshmen and senior years at college. It was noted that partaking in a learning community positively impacted first-year minority students' creativity and higher-order thinking skills.

An added benefit of learning communities, as articulated by Seidman (2012), was that learning communities allowed a college to focus on alternative course and program delivery methods. It was found that clustering learners together with comparable interests in residence halls and in classrooms produced bonds within the group which, in turn, assisted learners in integrating into the institution's academic and social structure (Braxton et al., 2014). Learning communities could also have an indirect impact on student success; according to Tinto (2012b), when faculty collaborated to ensure related courses and a joint-learning experience that was customized to the students' needs in a particular environment could cause student success.

Moreover, Tinto (2012a) declared that many colleges embarked on leaning communities as academic assistance for their students. With additional coaching and clear joint-tasks in courses in the learning communities allowed learners to speedily related what they learned in the support classes to the academic entailments of the further courses which enhanced their performances. Since freshmen were underprepared scholastically, many college administrators embraced learning communities to enhance the basic skills of their students.

An additional benefit of learning communities was revealed in the study conducted by Hill and Woodward (2013) that explored how learning communities positively influence the retention rate of learners. The outcome of their research indicated that learning communities improve the rate of retention of learners. They found that the anticipated effect of ethnicity and

ACT scores on students' retention were trivial when taking into account the involvement in learning communities and high school GPA in the design (Hill and Woodward, 2013).

Furthermore, Grose-Fifer et al. (2013) found psychology-based learning communities to be beneficial as most students in these learning communities agreed that interaction with peers formed a positive learning atmosphere. Additionally, the benefits of learning communities included the friendships students made which students believed would continue after their first semester in college. Another benefit of learning communities was discussed in a study by Visher, Wathington, Richburg-Hayes, and Schneider (2008) at Kingsborough Community College that analyzed the relationship between courses, counseling, and tutoring among freshmen students.

Participants were placed randomly in an experimental group and a control group in a learning community. The experimental group had three linked subjects, counseling, and tutoring services while the control group had unlinked courses. The results after two years revealed that students in the experimental group believed that they were more united and involved in the college, they received more credits during their first semester in college, and they were more willing to take (and subsequently pass) the mandatory English skills evaluation examination (as cited in Love, 2012).

Types of colleges and retention. Over the past four decades, the college-going population in the United States had significantly increased in diversity; it grew from a homogenous group of individuals to millions of students from various backgrounds and ethnicities (Berger et al., 2012; NCES, 2016). Retention demonstrated the ability of the institution to support its students through graduation. Certain types of colleges are inclined to draw special kinds of learners. Several institutions were very selective, especially some private,

“high status” colleges who enrolled students that were more apt to stay until graduation due to the background of their parents, being acquainted with the expectations of the college, and their preparation in high school prior to entering college (Berger et al., 2012).

On the other hand, colleges that were not so selective in their recruitment of students were inclined to draw learners who were more likely to depart college due to their educational and family background. These colleges were focused on access; some were community colleges that admitted students who were not necessarily planning to obtain a degree and so retention rates varied broadly across institutions by type and curriculum (Berger et al., 2012). In addition, there were institutions that retained different kinds of learners, such as women’s colleges and HBCUs, as the focus on these specific populations and had been shown to retain their students at higher rates (Berger et al., 2012). Austin (1990) asserted that variation in retention rates is not due solely to the types of students admitted to the college or university, but to the support services and campus environment that had been developed to help students succeed (as cited in Berger et al., 2012).

Ethnicity. According to the National Center for Education Statistics (2016) the diversity of ethnicity had increased over the years. Over the past four decades, the proportion of Hispanic students increased by 13%, Asian/Pacific Islander students by 5%, African American or Black students by 4%, and Native American Indian students by 0.1%. During this same period, the enrollment of Caucasian students dropped by 26% (National Center for Education Statistics, 2016).

A look at the ethnic background of students at Bronx Community College (BCC) for the fall of 2013 showed there were 61% Hispanic, 33% Black, 3% White, 3% Asian and Pacific Islander, and 0% Native American students. For the year 2012, nearly 40% of freshman students

indicated that English was their second language, and the majority of these freshmen students' language was Spanish (Parmegiani, 2019). A pioneering learning community was established in fall 2013 at BCC for these students whose first language was Spanish that encompassed an English as a second language (ESL) course, a composition course in Spanish and a first-year seminar (FYS) course to improve the achievement of these students (Parmegiani, 2019). The results revealed that the students in the ESL course that also the FYS course within the learning community received much higher GPAs than students who took the seminar outside the cluster of the learning community (Parmegiani, 2019).

Gender. The National Center for Education Statistics (2016) stated that from 2004 to 2014 the number of female students increased by 15% and the amount of male students increased by 19%. Even though the percentage of males enrolled was larger from this same period, females comprised 56% of enrollment figures in 2014. However, from 2010 to 2014, the enrollment of males decreased by three percent and by five percent for females.

Age. The National Center for Education Statistics (2016) reported that from fall 2004 to fall 2014, 4-year colleges had an increase in the number of students that were below 25 years of age. Between 1990 and 2014, the overall enrollment rate for persons ages 18-19 increased from 43% to 49% at the college level. Furthermore, the enrollment in college for students 20 to 24 years old increased from 29% to 38% and those students ages from 25 to 29 years old had an enrollment increase from 10% to 13%, while there was no significant change in enrollment for students ages 30 to 34 years old.

GPA /ACT score. Students with low grade point averages (GPA) had a lower chance of graduating from college (Swail, 2014). Rohr (2012) found that GPA and SAT scores aided in the prediction of the retention of college students as higher scores increased retention. Morrison

and Silverman (2012) found that personal aspects, such as grades, assist in predicting the retention of students since students with better grades in the past were the ones that stayed in college. Further, student characteristics, such as their academic potential and high school GPAs, influence students' decisions to persist in commuter institutions and universities (Braxton et al., 2014).

First-generation students. According to Soria and Stebleton (2012), first-generation students did not have the same social funds compared to those students who were not the first in their family to attend college; they were more liable to encounter extra hurdles in finding their way through college. Therefore, first-generation college students were less apt to stay in college than their peers that were not first generation. Additionally, first-generation students had less rapport with their classroom instructors and do not actively contributed to classroom interactions. They were less likely to share thoughts about course materials as they do not seem to grasp subject-matter concepts and did not ask many useful questions during discussions.

Critique of Previous Research

Previous research on the influence of learning communities on the retention of freshmen had many restrictions as there were many quantitative research studies completed, but very little qualitative research. However, Peña (2017) examined the impact of community college First-Year Experience (FYE) programs on encouraging transfer among Latino male students. Using a qualitative case study method, there were explorations of the use of community college FYE programs as a form of a learning community. The data collection strategy included three methods: semi-structured interviews, site observations, and program document analysis. According to Creswell (2014), it was vital to collect data with different methods for case studies which includes interviews, site observation, and documents review (as cited in Peña (2017)).

Furthermore, Creswell (2013) recommended that a case study should not consist of more than four to five cases in one study. However, Peña (2017) selected 20 participants based on the suggestion from Kvale and Brinkman (2009) that the amount of participants could be between 5 to 20 (as cited in Peña, 2017). The purposeful sampling technique which was applicable to qualitative research was chosen to select current student and alumni members. While this study was useful, however, the terminology “purposeful sampling” was vague and unclear (Gentles, Charles, & Ploeg, 2015).

Purposeful sampling is the selection of members or data sources to utilize in a study to offer importance of the information relative to the research questions of the study. However, this definition offered insufficient clearness to permit for satisfactory classification any accessible sampling strategies to be either purposeful or not to be purposeful (Yin, 2011, as cited in Gentles, Charles, & Ploeg, 2015). “The lack of definitional clarity is further reflected by an inconsistency among case study authors regarding what qualifies as purposeful” (Gentles, Charles, & Ploeg, 2015, p. 1778).

The data were analyzed by an appropriate instrument, which was the six-step approach provided by Creswell (2014) : sorting and formulating the data for analysis, revising the data and noting the recording general ideas, creating a qualitative codebook that defines codes, producing descriptions and themes as well as using description analysis to display the data, and inferring the qualitative findings from the data (as cited in Peña, 2015). In addition, Peña (2015) found that struggling Latino males in these programs stayed in their program of study and went over to 4-year colleges for continuation of their studies. These Latino males experienced a better feeling of belonging in FYE programs which assisted them in managing hurdles that impeded their transfer to 4-year colleges.

Purdie and Rosser (2011) examined GPAs and freshmen retention in living-learning communities. The data were gathered from the institutional records of a public university in the Midwest. However, there was no mention whether permission was granted to retrieve the records of 13,931 students at that university, since the education records of students were confidential and protected by Family Educational Rights and Privacy Act (FERPA) . The authors performed multiple regression and logistic regression analyses to find out whether involvement in Freshmen Interest Groups (FIGs), Academic Theme Floors (ATF), and First-Year Experience (FYE) courses were linked to improved first-year grades. They controlled for independent variables like the high school GPAs, ACT scores, gender, ethnicity, income of the family, original major, living plan, and membership in sororities and fraternities to investigate whether freshmen immersed in learning communities earn higher grades.

The logistic regression analyzed the independent variables of high school GPAs, ACT scores, gender, ethnicity, income of the family, original major, living plan, and membership in the Greek society, as well as the end of first year semester GPA. The dependent variable was retention. The instrument was consistent with the type of data collected as logistic regression permits the researcher to regress both continuous and categorical independent variables with the dichotomous dependent variable (Teo, 2013). The instrument was appropriate to examine retention (Parks, 2013).

The study of Purdie and Rosser (2011) found that high school GPAs were somewhat negatively linked to student retention and that ACT scores was not connected to retention in a statistically significant way. Students in FIGs, however, performed better and but the impact of being in ATF and FYE courses was statistically neutral in terms of first-semester grades (Purdie & Rosser, 2011). Loes et al. (2017) investigated if learning that occurs in groups has more

positive student socialization that permitted higher chances for students to continue to the second year of college. There was the utilization of longitudinal information from first-year students at various colleges and it was found that freshmen were very likely to persist to the next year of college when they were exposed to collaborative learning.

The utilization of the Wabash National Study of Liberal Arts Education (WNSLAE) survey collected data from these first-year students in two waves. Each freshman student was compensated \$50 for their time and effort in the first wave; those that participated in the second wave received another \$50 as compensation. Sarraf and Cole (2013) stated that compensation like cash, gift cards and technology prizes were linked to a rise in the response rates of participants, while Keusch, Batinic, and Mayerhofer (2014) found that respondents seeking rewards are more apt to partake in surveys than those persons that are not motivated by compensation (as cited in Cole, Sarraf, & Wang, 2015).

According to Barge and Gehlbach (2012), “some researchers have expressed concern regarding the potential deleterious effects incentives might have on survey data quality via the process of satisficing”; satisficing was described as saving time and liveliness and yet constructing a response that appeared adequate for the purposes at hand (as cited in Cole et al., 2015, p. 3). However, Toepoel (2012) reported that there was no indication that compensation for survey data has any effect on the quality of data collected. On the contrary, Barge and Gehlbach (2012) reported that respondents obtaining an incentive were more apt to satisfice as they often skip items in the survey as opposed to individuals that did not receive compensation, thus resulting in poor data quality (as cited in Cole et al., 2015).

Buch and Spaulding (2011) studied the influence of a curricular-based learning community on student success for first-year students majoring in psychology. The study was

conducted with students in a Psychology Learning Community (PLC) and students that were not in PLC, using pretest and posttest surveys. The results revealed there was an academic advantage to the PLC with respect to first-year GPAs and retention.

The researchers employed a longitudinal design with a matched control group into the PLC that allowed limited strength to the research design as well as the deduction given from the information. Further, a limitation of the research was that it was conducted for a single PLC in a single department and therefore presents generalizability issues. In addition, student self-selection could limit the strength of conclusions deduced from the data (Adams & Lawrence, 2015).

Rocconi (2011) stated that involvement in a learning community is directly linked to educational benefits, which could be related not directly to educational improvements through participation of students. The results of the study were limited to a single college where the sample was taken; he noted that a sample from another college or from several colleges might produce different outcomes. Further, there was a suggestion that the design of learning communities should center on events in the learning communities that encouraged student and faculty collaboration, boosted interactions between students, and emphasized teamwork in coursework.

All measurements in this study came from the College Student Experiences Questionnaire (CSEQ) that were self-reported by the students. Although self-reported measures were often criticized for their bias, the CSEQ has illustrated validity and reliability in the self-reported measurement. The College Student Experiences Questionnaire (CSEQ) was created by Dr. Pace. Furthermore, Gonyea, Kish, Kuh, Muthiah, and Thomas (2003) have confirmed the validity and reliability of the self-reported measures of the CSEQ.

Chapter 2 Summary

There were many research studies that explored the characteristics which contributed to minority freshmen attrition as well as strategies that helped them succeed academically. According to Tinto (2012), colleges could boost the retention rate of their learners, mainly those from low socioeconomic status, if more attention were paid to what happened in classes, especially in the first year. Colleges could make modifications such as providing clustered courses which support students in finishing their classes in a timely manner.

Minority students departed college due to their inability to adapt socially and academically into higher education. In the shift to college from high school, learners experienced anxiety as they were engrossed in a fresh setting at college that was unfamiliar to them. Many minority students arrived unprepared for the rigors of college-level work and struggle to integrate into college culture; this struggle could prompt them to depart early. Added to this anxiety and vigorous pace at college, there were many tasks minority students must manage as many of them have part-time jobs, family responsibilities, and also acquired financially burdens when they entered college.

Seidman (2012) found that college learning communities focused on different ways to provide courses to students; grouping students together with similar interests in residence halls and in classrooms produced a connection within the group which, in turn, helped them to integrate academically and socially. However, the literature about the benefits of participation in learning communities and the impact on minority freshmen retention warranted further scrutiny (Hill & Woodward, 2013).

To conclude this literature review, which focused on a conceptual framework that included characteristics such as age, gender, ethnic background, and aptitude to understand

retention of minority freshmen, there was enough evidence to believe that an investigation exploring the influence of learning community would offer reciprocally important findings. I could, for that reason, asserted that the literature review offered powerful support to engage in a research project to answer the following research questions. To what extent does participation in learning community impact freshman minority student retention? What effect does (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, have on the retention of minority freshman students between the first and second semester of college?

Chapter 3: Methodology

Introduction to Chapter 3

This quantitative study was designed to determine whether social integration in learning communities (LC) was associated with minority freshmen student retention. Researchers have offered multiple theoretical views and models that shed light upon college retention (Berger et al., 2012). Prior research shown a relationship between learning communities, retention and achievement (Berger et al., 2012; Tinto, 2012a, 2012b). Morrison and Silverman (2012) stated that Tinto's model illustrated student progression through diverse stages of student experience and departure. Tinto (2012b) argued that colleges could have higher retention rates of minority students from lower socioeconomic backgrounds if they investigate what happens in the classroom. According to Swail (2014), many minority students lacked preparation for the rigors of college because of a school system that failed them, in addition to the rising tuition costs. These factors made it difficult for minority students to remain in college.

Tinto (2012b) added that administrators of colleges needed to focus improving the classrooms for success and to give more attention to the freshmen year as they structure the curriculum. The programs of study needed to be structured so that students have clusters of related courses that allowed them to finish in a timely manner. Sometimes, administrators of colleges to dealt with situations that were out of their control; nevertheless, there were need to redesign their environment to retain students. Students needed social and academic support during their first year in order to remain in college. According to Berger et al. (2012), the theory of retention posited by Tinto was one of the best and got many citations as it comprised of two structures which were “psychological and organizational theoretical models” (p. 23).

The literature review demonstrated that an approach that has been developed, but not consistently evaluated in the past decade to promote student retention is the development of Learning Communities (Hill & Woodward, 2013). Although the review of literature revealed that LCs had benefited minority students (Huerta & Bray, 2013) and had the potential to produce a bond among small community groups that assisted student integration into the institution's academic and social structure, "retention rates have not improved in spite of the many and varied programs and services that colleges have instituted" (Seidman, 2012, p. 282). Voelkel and Chrispeels (2017) revealed that many countries struggle to improve student learning and raise the accomplishment levels of their students.

The NCES (2015) reports showed that minority students' college completion rates were low in comparison to their non-minority counterparts. Additionally, there were few studies that focused solely on minority students and learning communities. This lack of research warranted a review of the practices that held potential to help this group in their college completion goals. Though learning communities had been assessed in the past, a current look at this promising practice is justified, especially among minority students. Arbelo-Marrero and Milacci (2016) revealed that the elements for undergraduate Hispanic nontraditional students to persist academically included their associations created with faculty and administrators at the college and their aptitude to cross barriers "within those very social systems that affect their academic persistence" (p. 32).

In general, Hill and Woodward (2013) found that students in learning communities, as well as at-risk learners, attained an average GPA corresponding to students who did not partook in a learning community; It was suggested that further research focused on the links between student retention and learning community participation. There were different types of LCs that

varied as required by the colleges that organize the faculty and students into small cohorts to enhance integration on the program as well as to help the students get support academically and socially. There were curricular learning communities that linked courses and provided opportunities for students to interact and to improve subject comprehension.

Learning communities also included paired, or bunched courses, cohorts in large courses or Freshmen Interest Groups (FIGs), as well as team-taught programs and residence-based programs that allowed students to build community and moved them forward toward completing their coursework. These LCs allowed students to get support in their groups, even outside of their classes, so they engaged in more learning arrangements to assist them to increase their knowledge and encouraged them to persist in college (Tinto, 2012b). According to Loes et al. (2017), when learning occurs in groups, there was more positive student socialization that increased the probability students would continue on to the second year of college.

Peña (2017) found that community college First-Year Experience (FYE) programs for learning communities, helped struggling Latino males to stay in their program of study and moved on to 4-year colleges. This chapter described the methods for this study which had been derived from an evaluation and use of approaches described in the existing literature. There was an explanation of the operationalization of variables, the research design, the target population, sampling method and related procedures. Then there was an examination of the instrumentation and data collection procedures, followed by a scrutiny of the prospective findings, study limitations, and the ethical issues related to this study.

Purpose of the Study

Using quantitative research methods, the purpose of this study was to examine whether student integration through participation in a learning community was associated with the

retention of freshmen minority students from the first semester to the second semester. Specifically, this study utilized a correlational model and data were gathered using survey protocol. The data collection was completed through social media with a link to the online Qualtrics survey on websites like LinkedIn, Twitter, Google+, and Facebook. There were 150 freshmen college students who participated in the data collection process.

While past studies have compared retention based upon participation in learning communities, this study sought to investigate the effect that (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, have on the retention of minority freshman students between the first and second semester of college? Minority student retention was an issue that plagued college administrators; therefore, focusing on understanding if learning communities benefited this group could be of benefit for colleges working with the minority populations (Berger et al., 2012).

Furthermore, in this climate of rising debates, there were numerous requests for improvement and research on how students learned and persisted in college (Tinto, 2012b). As knowledge of student retention had evolved and expanded over the years to include institutional and student views, the reasons to depart from college remain interlinked with various factors, such as students' background, readiness, and their ability to integrate academically and socially. This research was designed to determine how social integration affected re-enrollment of minority freshmen in learning communities, which could potentially inform faculty and administrators about how to better serve this population of students.

Research Questions

Question 1: To what extent does social integration in a learning community impact freshman minority student retention?

Question 2: What effect does (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, have on the retention of minority freshman students between the first and second semester of college?

Hypotheses

The null hypotheses explored are given below:

Question 1 Null Hypothesis: There is no relationship between social integration in a learning community and retention of minority freshmen students.

Question 2 Null Hypothesis: There is no effect of (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, on the retention of minority freshman students between the first and second semester of college.

Research Design

This research used a quantitative correlational design to address the research questions. The data collection process involved the use of pretest and posttest survey questionnaires of freshmen minority college students in learning communities throughout the United States. These students self-reported their experiences in learning communities as they answered the questions that were designed using a Likert Scale (a 5-point scale). Self-reported data offered insight to student views and allowed me to acquire data about their opinions and manner of thinking that cannot be seen openly. Questionnaires were confidential and could consequently decrease social desirability bias (Adams & Lawrence, 2015).

The students worked on the questionnaires via Qualtrics survey and therefore these questionnaires saved time as compared to time-intensive interviews. In addition, the administering of the questionnaires was relatively easy to accomplish by “posting an online questionnaire” but the weakness of questionnaires was that “self-report[s] may not be accurate,

either because people are deceiving themselves or trying to deceive the researcher” (Adams & Lawrence, 2015, p. 108). The questions from the College Assessment of Readiness for Entering Students-Intended (CARES- I) as pretest and College Assessment of Readiness for Entering Students-Actual (CARES- A) as posttest surveys were utilized in the research study.

These questions offered information about the social integration of the students as they expressed their views about their expected and actual experiences of integrating into college during their first semester. As this research explored to what extent participation in a learning community impacted freshman minority student retention, the purpose was to gather students’ perspective to assess social integration through learning communities and retention,

Additionally, the same students provided their opinions twice: a pretest with questions about their expected social integration and second, a posttest after their experiences in a learning community, since both the pretest and the posttest were in the same Qualtrics survey. The respondents were already in the learning community as freshmen students and just completed the first semester and they reflected on their intended expectations when they answered the pretest questions. In this way, the same group of students answered both surveys.

For question 1, to investigate the relationship of social integration in a learning community with retention of minority freshmen students, I selected the Chi Square Analysis since both variables were categorical (Adams & Lawrence, 2015). The retention of minority freshmen students was categorical because the choice on the survey for students to report re-enrollment from the first semester to the second semester was either “yes” for re-enrolled, or “no” for not re-enrolled. The social integration experience in a learning community value was categorical since it could be a positive experience or a negative experience.

The Chi Square Test analyzed the association between the two categorical variables which were retention and social integration experience in a learning community. After the data were collected, if the sample sizes were small, the next step was to utilize the Fisher's Exact Test instead of the Chi Square Test; since the Fisher's Exact Test was the substituted test for small sample sizes (McDonald, 2014). For question 2, to determine effect that (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, have on the retention of minority freshman students between the first and second semester of college, I selected the regression technique. Further, gender, age, high school GPA, and end-of-first-semester GPA were called the independent variables and retention was called the dependent variable. A logistic regression was chosen since the value of a dependent variable needed to be obtained when many other independent variables were present (Adams & Lawrence, 2015).

Target Population, Sampling Method and Related Procedures

Permission to conduct this study was sought from a private college located in New York. The participants for this study were supposed to come from the freshmen students enrolled in the Business Department in the fall semester of 2017. However, I was unsuccessful in obtaining 75 participants, so I used social media to recruit 150 freshmen college students participating in learning communities across the United States, after submitting an IRB modification to the Concordia University in order to gather data. Data were gathered from 150 freshmen college students through social media with a link to the online Qualtrics survey on websites such as LinkedIn, Twitter, Google+, and Facebook. However, only 140 freshmen students were eligible based on the criteria that they participated in a learning community.

Target population. Data were gathered from 150 freshmen college students through social media but 140 freshmen students were eligible as they participated in a learning

community. The same sample of students participated in both the pretest and post- test questionnaire surveys; (see Appendices A and B). These freshmen indicated their expected social integration in the pretest survey and their actual social integration after one semester in the learning community in the posttest survey. The students were in complete control of their involvement in the surveys and they could refuse to participate or withdraw at any time. They were informed that there were no consequences involved if they do not want to continue participating after they started.

Sampling method. I used a convenience sampling of the minority freshmen students enrolled for fall 2017 across the United States. Adams and Lawrence (2015) described convenience sampling as a kind of non-probability sample that consisted of volunteers that were readily accessible and eager to contribute to the research. Non-probability sampling was a type of non-random sampling which does not depend on random collection; there was a concern about sampling bias with non-probability sampling since the size of the sample was not set and might not represent the entire population. However, the external validity for a correlational study was also significant and was determined by sampling procedures such as convenience sampling.

Instrumentation

The freshmen minority students in this study were asked to respond to the pretest and posttest surveys to find out the extent to which participation in a learning community impacts freshman minority student retention. Each participant also completed the form provided in Appendix C to provide information about their gender, age, ethnicity and high school GPA, end-of-semester GPA and re-enrollment status. Furthermore, the freshmen were informed about their optional participation, asked for consent, and were informed about confidentiality.

The minority freshmen were asked to complete a pretest and a posttest surveys to determine whether their social integration experiences in LC were positive or negative; this information was used in combination with the other data collected from them to determine re-enrollment of freshmen from the first semester to the second semester. I used the CARES-I and CARES-A questions to create the pretest and posttest surveys using Qualtrics; (see Appendices A and B). Each question had a Likert scale value: strongly disagree (1) to strongly agree (5). The students selected the appropriate value for each question, depending on their own perceptions. There were 14 questions in the pretest and 14 questions in the posttests. The mean value for the pretest was calculated as well as the mean value for the posttest.

These pretest and posttest values were used with the dependent sampled t-test to determine the association between minority freshmen expected integration and their actual social integration in learning communities. The output results indicated the overall means for the pretest and posttest. According to Adams and Lawrence (2015), survey questionnaires can “range from 1= *very dissatisfied* to 5 = *very satisfied* and you can choose any value between 1 and 5 to represent your satisfaction from very low to very high” (p. 82). They also mentioned that this Likert-type scale gives the values that are used to perform “statistical analysis” and the “interval scale can have as few as 3 values and as many as more than 100” (Adams & Lawrence, 2015, p. 82). However, I used the same scale on the CARES questions.

The relationship of social integration in a learning community with the retention of minority freshmen students for question 1 was analyzed using a Chi Square analysis which was selected since both variables were categorical (Adams & Lawrence, 2015). The next aspect of the study was the computation using regression that looked at the relationship between re-enrollment of first semester to second semester of the freshmen year (the dependent variable) and

(a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, (the independent variables). The regression analysis described how a dependent variable like retention is numerically related to the independent variables (Adams & Lawrence, 2015). These data were gathered for one semester in 2017 from the students. There would be a level of significance of ($\alpha = 0.05$).

Data Collection

Data was collected at the end of the fall 2017 semester for both surveys; this included information on personal characteristics. I asked students to self-report data on their characteristics and aptitude: age, gender, ethnic background, high school GPA, end-of-first semester GPA, re-enrollment status, and their perception about the learning community social integration, as shown in Appendix B. The data about their social integration perception were obtained from the pretest and posttest survey questions. The pretest questions are outlined below where the students indicated their Likert-type responses on a scale of 1 (low) to 5 (high).

1. Get involved in student clubs or organizations (includes academic, religious, cultural and interest-based organizations)
2. Attend campus programs and events (Band bash, fashion shows, musical appearances, etc.)
3. Attend campus “Arts” programs (Homecoming entertainment, homecoming parade, museums, Broadway, city excursions, etc.)
4. Attend the college athletic events
5. Participate in campus recreation activities (sporting and leisure activities, intramurals on campus)
6. Form study groups

7. Attend on-campus workshops (improving skills, leadership, Wilson Reading System Introductory Workshop, Resume Writing and Career Planning Workshops, learning new things, etc.)
8. Develop a mentoring relationship with a faculty or staff member
9. Develop a mentoring relationship with an upper class student
10. Participate in a learning community
11. Get to know my classmates outside of class
12. Get to know people on campus socially (in my class, in clubs I belong, visit Schoenfeld Campus Center and the Commons, daily chapel services, etc.)
13. Find a job on campus
14. Volunteer in the community.

Likewise, the post-survey questions are outlined below.

1. Got involved in student clubs or organizations(includes academic, religious, cultural and interest-based organizations)
2. Attended campus programs and events (Band bash, fashion shows, musical appearances, etc.)
3. Attended campus “Arts” programs (Homecoming entertainment, homecoming parade, museums, Broadway, city excursions, etc.)
4. Attended the college athletic events
5. Participated in campus recreation activities (sporting and leisure activities, intramurals on campus)
6. Formed study groups;

7. Attended on-campus workshops (improving skills, leadership, Wilson Reading System Introductory Workshop, Resume Writing and Career Planning Workshops, learning new things, etc.)
8. Developed a mentoring relationship with a faculty or staff member
9. Developed a mentoring relationship with an upper class student;
10. Participated in a learning community
11. Got to know my classmates outside of class
12. Got to know people on campus socially (in my class, in clubs I belong, visit Schoenfeld Campus Center and the Commons, daily chapel services, etc.)
13. Found a job on campus
14. Volunteered in the community

Similarly, the respondents indicated their Likert-type responses on a scale of 1 (low) to 5 (high) as shown in Appendices A and B. They also completed the data sheet given in Appendix C with their names, ages, ethnicities, genders, high school GPA, end-of-semester GPA, and whether they were re-enrolled for the next semester. Their social integration status was computed according to the discussion in the data analysis section. Students could be integrated formally by being involved in the newspaper articles from their colleges or joining clubs while informal social integration could be interactions with peers in groups (Morrison & Silverman, 2012).

Operationalization of Variables

The focus of this study was to determine whether social integration in learning communities was associated with freshman retention of minority students.

Retention. Retention was described as the ability of a college to keep a student from preliminary enrollment to the completion of the course of study and graduation (Berger et al., 2012). For this research, retention was defined as the re-enrollment of the freshmen from the first semester to the second semester.

Social integration. Social Integration was defined as the association between the undergraduate student and the social structure of the college. Social integration was the relationship that students built with their peers and faculty and staff inside and outside of the classroom. Social integration also included freshmen students' perception in a learning community. The respondents answered the pretest and posttest survey questions which indicated their expected and actual social integration in college. The posttest was administered at the end of the first semester so the freshmen could indicate their actual social integration perception of the learning community.

Learning community. The learning community included the first-year courses that clustered minority freshmen students in order to integrate them into college as well as those students that chose the freshmen residence hall. Laufgraben and Shapiro (2004) classified learning communities as those with paired or grouped students in courses, freshmen interest groups (FIGs), courses using team teaching methods and learning communities with a residential-based section.

Minority freshmen. Minority Freshmen were described as first-year minority students enrolled in college who were not Caucasian. They were the African American, American Indian, Asian or Pacific Islander American and all Hispanic students.

Independent variables. These variables were the age, gender, ethnicity, high school GPA, perception of learning community and end-of-semester GPA.

Dependent variable. This variable was retention or the re-enrollment status after one semester in the first year of college.

Data Analysis Procedures

This section explains the approaches that were used to analyze the surveyed data collected which included re-enrollment or retention, gender, age, ethnicity, high school GPA, social integration and end of college semester GPA. The proposed test for research question 1 which was to determine the relationship between social integration in a learning community and the retention of minority freshman students, was a Chi Square analysis since both variables were categorical (Adams & Lawrence, 2015).

The retention of minority freshmen students was categorical because the choice on the survey for students to report re-enrollment from the first semester to the second semester was either “yes” for re-enrolled or “no” for not re-enrolled. Retention was coded “1” for re-enrolled in the second semester and “0” for not re-enrolled in the second semester. Further, the social integration in a learning community value was categorical since it could be a positive experience or a negative experience. It is coded “0” for a negative experience and “1” for a positive experience.

The Chi Square Test analysis was proposed to find the association between the two categorical variables which were retention and social integration experience in a learning community. However, as I explained in Chapter 4, the interpretation of the results of the Chi Square values cannot be utilized because there were cells with less than 5 counts; therefore, the Fisher's exact test was more applicable for the analysis of small sample sizes as well as it was valid for all sample sizes (Hae-Young, 2017)

For question 2, which was to determine the effect of (a) gender, (b) age, (c) ethnicity, (d) high school GPA, or (e) end-of-first-semester GPA on the retention of minority freshman students between the first and second semester of college, I proposed the logistic regression analysis. I included the factors of gender, age, high school GPA and end-of-first-semester GPA to analyze whether these variables had any influence on my findings when I sought to find out the relationship between social integration and retention. Further, the gender, age, ethnicity, high school GPA, social integration and end-of-semester GPA were considered the independent variables and the re-enrollment or retention of minority freshmen students was considered the dependent variable.

I proposed the logistic regression analysis, after I explored the use of multiple regression analysis which was a linear regression analysis that used a general linear equation. However, the dependent variable must be continuous, to utilize a linear regression analysis, and in my study the dependent variable of retention was dichotomous meaning retention had two states either “0” for not retained or “1” for retained, so it was not appropriate. Instead the logistic regression was used to conduct the analysis.

As explained in Chapter 4, when the binary logistic regression failed to offer any independent variable that showed an effect on retention, then a further analysis was done called the stepwise regression to determine any effect of the independent variable which were the gender, age, high school GPA, social integration and end-of-semester GPA on retention which was the dependent variable. The details of these analysis are explained in Chapter 4. According to Park (2013), “binary logistic regression is typically used when the dependent variable is dichotomous and the independent variables are either continuous or categorical” (p.155). The

equation for this was: Retention = Constant + Gender + Age Group + HS GPA + Freshman GPA + social integration or $P(1) = \exp(Y') / (1 + \exp(Y'))$.

Limitations and Delimitations of the Research Design

Limitations. There were quite a few limitations associated with this study which were self-reporting of the freshmen in the learning communities and the research questions rested on their perceptions, thus making the essence of the study subjective: “Self-reports may be inaccurate due to the social desirability bias” (Adams & Lawrence, 2015, p. 106). The next limitation was the study focused only on a sample of freshmen minority students for the first semester to the second semester in the first year in a learning community in college. As such, “the external validity could be impacted because the results may not generalize to more advanced students or individuals who are not in college” (Adams and Lawrence, 2015, p. 58).

Another limitation was due to the scheduling problems where the original research site in New York did not allow the collection of data other than emailing the students. The responses from the students were poor and the college did not offer an alternative method of data collection. As such, the data collection was done through social media to recruit freshmen in learning community across the United States. These respondents answered both the pretest and the posttest in the same Qualtrics survey at the same time because they were already in the learning community as freshmen students and just completed the first semester. They reflected on their intended expectations when they answered the pretest questions.

Additionally, although there was diversity in this sample, a sample of college freshmen students from one college or from many colleges in one state could provide different results. Further, the sample sizes for each ethnic group was small, so the background and minority freshmen student social integration measures were limited. Freshmen participation in learning

communities, especially in residential communities, is voluntary; this could lead to issues of self-selection bias (Adams and Lawrence, 2015).

Delimitations. The study was delimited to a convenience sampling of 150 college freshmen students who were 18 years or older across the United States. Further, the design of the study was to include only minority students to answer the questions. However, 38 Caucasian freshmen students responded to the survey questionnaires. They were included in the study to create more discussion about the minority students.

Internal and External Validity

The validity and reliability of the measures utilized in this research was established through the consistent use of the pretest and the posttest, which were the same questions. The external validity of a study is the ability “to generalize the result to a different sample” (Adams & Lawrence, 2015, p. 507). The CARES survey instrument was developed by Florida Atlantic University in 2007 (Pfeffer-Lachs, 2013), to measure the readiness of freshman students at their university. According to Pfeffer-Lachs (2013), “the CARES survey instrument has internal face validity” (p. 42).

Ronco (2012), one of the “creators of the instrument” stressed the validity of the instrument as he explained that “on the face of it, [CARES] appears to measure what we claim it measures” (as cited in Pfeffer-Lachs, 2013, p. 42). This shows construct validity of the instrument as Thietart, (2001), explained that construct validity is “the extent to which an operationalization measures the concept which it purports to measure” (p. 187). Even though validity information was presented about the CARES instrument above, I performed exploratory factor loading analysis to assess the construct validity of the CARES-I and CARES-A instruments as shown in Appendix F because the original survey was developed for students in

the same learning community and though in my original design I had intended to recruit students from the one institution, that was not possible and the students were from different learning communities.

There are detailed explanations about the construct validity of the instrument given in chapter 4 (Kang, 2013). In addition, Ronco (2012) further stated that the freshmen students understand what they are asked and the “items are unambiguously stated” (as cited in Pfeffer-Lachs, 2013, p. 42). He emphasized:

CARES have concurrent validity because the responses are similar to what we get for similarly-stated questions on the National Survey of Student Engagement (NSSE) and Student Satisfaction Surveys. Thus, we have verified that the data coming from CARES provides a truthful reflection of what the survey is intended to examine. (Ronco, 2012, as cited in Pfeffer-Lachs, 2013, p. 42)

One aspect of this study that could reduce the internal validity was the issue of instrumentation. If the instrument changed, then the changes in scores would be related to the instrument instead of the independent variable which was the social integration impact of the LC (Adams & Lawrence, 2015). Therefore, to reduce problems with internal validity the survey questionnaires for the pretest and the posttests were the same questions but the tenses of the questions were different. That is, the pretest is in the future tense and the posttest is in the past test. For example, a pretest question from the (CARES-I) is: *Get involved in student clubs or organizations (includes academic, religious, cultural and interest-based organizations)*, and the corresponding posttest from the (CARES-A) question is: *Got involved in student clubs or organizations (includes academic, religious, cultural and interest-based organizations)* (Pfeffer-Lachs, 2013).

Expected Findings

This study sought to understand whether minority freshmen students' social integration in learning communities was linked to their retention. The first year of college is a crucial transition period for students; grouping students in various courses to support their engagement and academic achievement had been linked to retention. Huerta and Bray (2013) found that the use of learning communities was a strategy that had not been thoroughly reviewed in the past decade although it had shown to promote retention. Swail (2014), however, noted that many minority students lack preparation for the pace of college academic work due to not being college ready.

Tinto (2012b) argued that classrooms need to improve so students get support socially and academically to remain in college. Voelkel and Chrispeels (2017) stressed that plenty countries were struggling to progress student learning and to lift the achievement of their students. Loes et al. (2017) emphasized that when learning took place in groups, there was more optimistic student socialization that permitted higher prospects for students to go on to the second year of college. According to Peña (2017), the use of community college First-Year Experience (FYE) learning communities helped Latino males that struggled to remain in programs and continued to 4-year colleges.

Braxton et al. (2014) stated that students who partook in learning communities tend to have positive changes in their academic and intellectual development. Students must have the frame of mind that they are flourishing socially and academically, as well as see themselves as being accountable for their academic success. College students should be able to cultivate techniques of survival and be able to surmount any obstacles academically and socially. Furthermore, when students expressed positive views of their college and possessed a sense of

belonging in the college environment, they were more apt to do well on their assignments and be motivated to graduate.

I hypothesized that there would be a relationship between social integration in a learning community and the retention of minority freshman students. Additionally, I also assumed that some personal attributes such as (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, would affect the retention of minority freshman students between the first and second semester of college.

Ethical Issues in the Study

As the researcher and principal investigator, I had no connections to the students in this study. Participants were informed prior to taking the Qualtrics survey about the procedures, risks, benefits, confidentiality, right to withdraw and the contact information; (see Appendix C). To minimize any conflict of interest, I ensured there were no conversations between myself and the freshmen, even outside the official parameters of the study. To ensure credibility and objectivity, I did not meet with the freshmen outside of the study while the study was in progress.

The use of deception was avoided in the study as the freshmen students were informed about the purpose of the study and the research process. The freshmen students were given instructions as to the format of the survey at the beginning of the study but their answers to the questions were their own choice. The freshmen students were informed that the study does not reflect on their performance but their perception of learning communities; they were asked to remain as objective as possible.

The research used survey protocol that involved asking the freshmen students to report on their own perceptions. These self-reports gave insights into how these college freshmen “see

themselves and allows the researcher to obtain information about people's thoughts and feelings that cannot be directly observed" (Adams & Lawrence, 2015, p. 106). One disadvantage of a self-report is that the data may be inaccurate "due to social desirability bias" as the freshmen students may give answers as "how they want to be perceived rather than on how they actually think or behave" (Adams & Lawrence, 2015, p. 106).

Chapter 3 Summary

In summary, the purpose of this quantitative research study was to examine whether student integration through participation in a learning community was associated with the retention of freshmen minority students from the first semester to the second semester. The main research question for this study was to examine to what extent does social integration in a learning community impacted freshman minority student retention. Further, I investigated if these factors which were gender, age, high school GPA and end-of-first-semester GPA, had any influence on my findings when I sought to find out the relationship between social integration and retention. Sampling and data collection were discussed as well as changes to the original methods intended in this study.

There was an explanation of the sample population of minority freshmen students and an explanation of data collection procedures for a sample of college freshmen students in learning communities in their first year of college. The study collected data from freshmen minority students who participated in learning communities during the fall of 2017. These data included their ages, genders, ethnic backgrounds, high school GPAs, their participation in a learning community, the credits earned after the first semester, as well as whether they re-enrolled for the second semester. Further, there was an explanation of the survey questions and the tests used for analysis for the data collected. The sample population provided answers to questions on the

pretest and posttest surveys. The study intended to find out the association between social integration in learning communities of minority freshmen and retention from data collected and analyzed quantitatively.

Chapter 4: Data Analysis and Results

Introduction

The purpose of this quantitative study was to examine whether student social integration through participation in a learning community was associated with the retention of freshmen minority students from the first semester to the second semester. There had been substantial research on retention model developed by Tinto's (1975) influential work which suggested that college students who endured and remained in college are the ones that could adapted well to the college's social and academic setting. Tinto (1975) explained that students come to college with many features that included gender, age, ethnic background, and aptitude. These attributes could their influence academic persistence. The conceptual framework for this study presented the independent variables as the ethnicity, gender, age, high school GPA, social integration experience, and end-of-first-semester GPA while retention was the dependent variable (Tinto, 1975).

Additionally, Tinto (1987) explained that retention was associated with student aptitude and their interactions with staff and fellow students at the college (as cited in Hagedorn, 2012). If students failed to integrate academically, they could be less dedicated to their college completion goal. Failure to integrate socially lessened their commitment to the college; hence, this showed strong need for a link between the college setting and the commitment of the students. Furthermore, those students that struggled and do not persist were the ones that did not make an effort to be incorporated socially and academically (Hagedorn, 2012).

Furthermore, Astin and Oseguera, (2012) made reference to Tinto's retention model as they explained that when students repeatedly changed their goals and college commitments, they departed college early. It should be noted that students also have prior knowledges before they

entered college, such as their prior academic coursework as noted by a GPA, academic and social attributes, personal circumstances such as their social standing, ethical characteristics, as well as their gender and age; these affected their performance in college both directly and indirectly. This chapter comprised of a synthesis of the data collected and presented the results of the study. The chapter is planned into four main sections that are description of the sample, scrutiny of the hypotheses, analysis of the methods and a summary of the results.

Research Questions

Question 1: To what extent does social integration in a learning community impact freshman minority student retention?

Question 2: What effect does (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, have on the retention of minority freshman students between the first and second semester of college?

The figure 3 below showed the independent and the dependent variables. The independent variables were race, gender, age, high school GPA, social integration experience and end of semester GPA while the dependent variable was retention. For this quantitative research study, the correlational method was utilized to address the research questions. The correlational method was chosen since the research was non-experimental where two variables which were retention and social integration were measured and to determine an assessment of their statistical relationship. This method was selected to analyze data that were suitable for the study so the researcher could effectively examine the relationship between two variables (Adams & Lawrence, 2015).

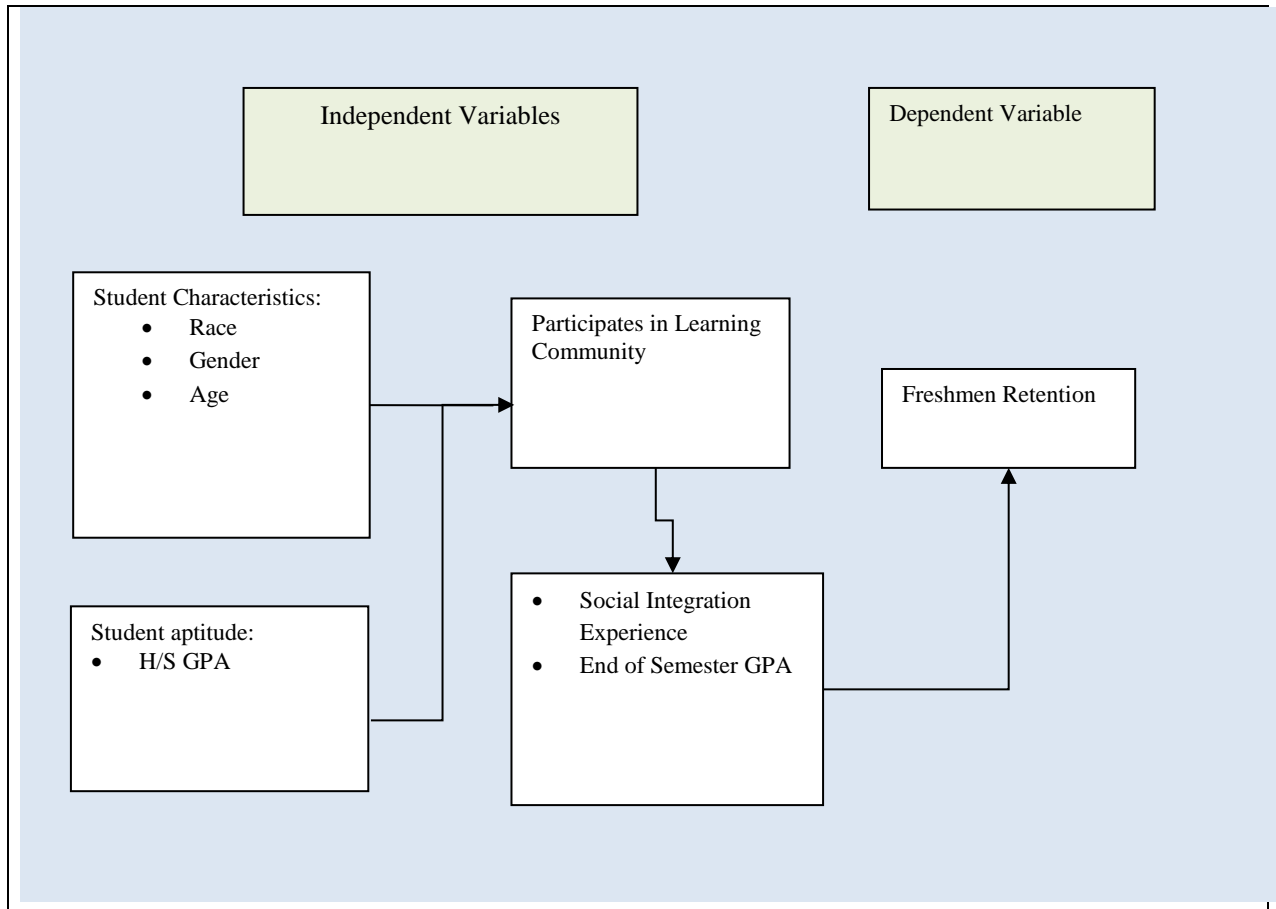


Figure 3. The independent variables as presented in this figure are race, gender, age, high school GPA, social integration experience and end of semester GPA and the dependent variable is retention.

The first research question determined the relationship between social integration in a learning community and the retention of minority freshman students. Then, I included these factors which were gender, age, high school GPA and end-of-first-semester GPA to find out whether these had any influence on my findings when I sought to find out the relationship between social integration and retention. This led to the second research question to determine the effect of (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, on the retention of minority freshman students between the first and second semester of college.

To address the research questions of this study, a web-based Qualtrics survey questionnaire was administered through social media for the targeted population of freshmen in learning communities across the United States who were 18 years and older to attract a sample of 150 participants. Some questions from the College Assessment of Readiness for Entering Students (CARES) survey that was developed by Florida Atlantic University in a study conducted by Pfeffer-Lachs (2013) were utilized as the survey questions for this research.

The pretest questions were taken from CARES-I (College Assessment of Readiness for Entering Students-Intended) as the pretest and CARES-A (College Assessment of Readiness for Entering Students-Achieved) as the posttest (Florida Atlantic University, 2016). There were a few delimitations associated with this study. First, data were gathered from 150 freshmen minority students through social media with a link to the online Qualtrics survey on websites such as LinkedIn, Twitter, Google+, and Facebook. The rationale for collecting data through social media was due to my unsuccessful plan to recruit 75 participants from one college.

I was unable to generate responses from freshman students at the original research site and the college was unwilling to permit different recruitment methods outside of a general email sent to the freshman class. Therefore, I submitted a modification to the Concordia University IRB to gather data from college freshman across the United States. Once the modification was approved, I used social media to recruit the participants. Although there was diversity in this sample, a sample of minority freshmen students from one college or from one state could provide different results. The sample size was small for each group in this study. In this chapter, there is a description of the sample, detailed analysis of each question, and a summary.

Description of the Sample

The sample for this research was acquired by utilizing a convenience sampling method of volunteers that met the criteria for the study through social media. Convenience sampling was used since “the sample made up of those volunteers willing to participate” (Adams & Lawrence, 2015, p. 128). The study recruited 150 participants through social media that were 18 years and older across the United States who were participating in a learning community as freshman students enrolled for the semester fall 2017. The sample population reported their gender, ethnicity, age, high school GPA, and end-of-first-semester GPA, as well as re-enrollment status for the second semester of 2017.

In a pretest and posttest survey, the freshmen reported their expectations of participation in their respective learning community and their actual experiences in the learning community. The same sample of students participated in both the pretest and posttest Qualtrics questionnaire surveys. These freshmen indicated their expected social integration in the pretest survey and after one semester in the learning community they indicated their actual social integration perception in a learning community. The students were always in control of their own involvement in the surveys. They had the opportunity to refuse to participate at any time. They were also informed that there were no consequences involved if they decided to not continue after they began filling out the survey.

The original design plan was to include only minority ethnic groups to address the research question. However, 38 Caucasian students responded to the survey questionnaires. The dissertation committee agreed that the researcher could include the Caucasian group in the study to develop more discussion about the minority groups. In keeping with the research question, I compared the various minority ethnic groups with the Caucasian ethnic group to understand the

social integration and retention of the minority freshmen students as well as to expand discussions about minority freshmen.

Table 1

Participant Demographic: Descriptive Statistics of Sample

Demographics	Type	Total (n)	%
Ethnicity (Other Minority = 1, Hispanic or Latino = 2, Caucasian = 3, African American or Black = 4)	Other Minority	38	27.2
	Hispanic or Latino	33	23.6
	Caucasian	38	27.2
	African American or Black	31	22
	Total	140	100
Age Group (18 -25 = 1, 26 - 35 = 2, 36+ = 3)	18 - 25	53	38
	26 - 35	39	28
	36 - 80	48	34
	Total	140	100
Gender (male = 1 female = 2)	Male	56	40
	Female	83	59
	Unreported	1	1
	Total	140	100

From the sample of 150 participants who completed the survey, 140 participants were eligible based on the criteria of participating in a college freshman learning community. Table 1 shows the demographics of the participants. The 140 student participants included 38 (27.2%) Caucasians, 31 (22 %) African Americans or Blacks, 33 (23.6%) Hispanics or Latinos and 38 (27.2%) represented West Indian, Pacific Islander, Asian and Native American under the Other Minorities group. There were 53 (38%) of the students between the ages of 18 and 25 years old, 39 (28%) of the students were between the ages of 26 and 35 years old and 48 (34%) of the students were between the ages of 36 and 80 years old. The gender of the students was 56 (40%) males and 83 (59%) females, as well as 1 (1%) of not-reported gender.

Summary of the Results

The data collected from the Qualtrics survey were exported to a file in Microsoft Excel then imported to the IBM Statistical Package for the Social Science (SPSS) version 25 (2017) software and the Minitab Express software to conduct the analysis. I used the SPSS software to execute the quantitative computations for the Fisher's Exact Test Analysis and I used the Minitab Express (2017) software to compute the Logistic Regression Analysis as this analysis was not offered by the IBM SPSS software.

Validity. The validity and reliability of the measures utilized in this research were established through the consistent use of the pretest and the posttest which were the same questions except for verb tense. The pretest used present tense as the college freshman will express their intended expectations. The posttest used past tense as the college freshmen expressed what they had experienced after the first semester.

For example, a pretest question from the College Assessment of Readiness for Entering Students-Intended (CARES- I) was: *Get involved in student clubs or organizations (includes academic, religious, cultural and interest-based organizations)*, and the corresponding posttest from the as pretest and College Assessment of Readiness for Entering Students-Actual (CARES- A) question was: *Got involved in student clubs or organizations (includes academic, religious, cultural and interest-based organizations)*.

The CARES survey was developed by Florida Atlantic University in 2007 (Pfeffer-Lachs, 2013), to assess the readiness of freshman students at their university. According to Pfeffer-Lachs (2013), "the CARES survey instrument has internal face validity" (p. 42). Ronco (2012), one of the "creators of the instrument" stressed the validity of the instrument as he explained that "on the face of it, [CARES] appears to measure what we claim it measures" (as

cited in Pfeffer-Lachs, 2013, p. 42). This showed construct validity of the instrument as Thietart, (2001), explained that construct validity is “the extent to which an operationalization measures the concept which it purports to measure” (p. 187).

Ronco (2012) further stated that the freshmen students understand what they are asked and the “items are unambiguously stated” (as cited in Pfeffer-Lachs, 2013, p. 42). He emphasized:

CARES have concurrent validity because the responses are similar to what we get for similarly-stated questions on the National Survey of Student Engagement (NSSE) and Student Satisfaction Surveys. Thus, we have verified that the data coming from CARES provides a truthful reflection of what the survey is intended to examine. (Ronco, 2012, as cited in Pfeffer-Lachs, 2013, p. 42)

According to Pfeffer-Lachs (2013), CARES was created by “faculty, staff and administrators” from Florida Atlantic University at a low price in order to assess the “readiness of first semester freshmen” at that university; it was patterned “after nationally well-known assessments like the National Survey of Student Engagement (NSSE)” (p. 41). Although the validity of the CARES instrument was addressed above, I performed exploratory factor loading analysis to assess the construct validity of the CARES-I and CARES-A instruments as shown in appendix F (Kang, 2013).

There was examination of the initial analysis procedure of exploratory factor analysis to analyze the size of the sample, distribution of measured variables, correlation matrix coefficient, KMO measure of sampling adequacy and Bartlett’s test of sphericity. Further, there were analysis of the number of factors and the interpretation of the factor loading results as given in appendix F (Kang, 2013). The correlation of the items, all 14 items correlated greater than 0.1

with at least one other item. Regarding the KMO measure of sampling adequacy were .841 and .869 respectively for the pretest and the posttest which were larger than the recommended value of .50 (Field, 2013).

With regards to the Bartlett's test of sphericity the values were statistically significant where both pretest and posttest items had p values $< .05$. This means that the correlational matrix was not an identity matrix. Regarding the communalities, all 14 items had communality values in excess of .30. This offered evidence of common variance among the items. Since the four criteria were all met, it was deemed reasonable to proceed with the factor analysis. When the factor analysis was performed, the rotation component matrix for both the pretest and posttest questions showed that there were 3 sub scales or categories.

Usually, a factor must comprise of a minimum of three variables with appropriate factor loading in order to offer a "meaningful and comprehensible interpretation" (Vakili, 2018, p. 16). Therefore, with the results of the factor analysis, the CARES instrument could be deemed as valid.

One of the most important types of validity of measurement tools is construct validity, one of the most valid and most common methods for evaluation is factor analysis. This method enables researchers to eliminate the inappropriate items from the designed tool in order to shorten the questionnaire and at the same time recognize the factors with the ability to properly predict the studied variable. (Vakili, 2018, p. 19)

Reliability. Ronco (2012) explained that there was no official reliability test carried out on the CARES survey instrument, however, the "results from the previous 4 years, since its pilot study in the Fall 2007 semester, always proves the same results" (as cited in Pfeffer-Lachs, 2013, p. 43). I had no control over the honesty of the college freshmen answers as the survey

questionnaire entailed asking college freshmen to self-report their perception of social integration before and after joining a learning community, as well as their demographic information, GPA scores for high school and the end of the first semester of college. These self-report created a limitation in the data. The data reported might “not be accurate, either because people are deceiving themselves or trying to deceive the researcher, in particular, self-reports may be inaccurate due to the social desirability bias” since freshmen may want to appear superior (Adams & Lawrence, 2015, p. 106).

In addition, self-reports of the college freshmen in CARES survey questionnaires was a limitation and Bebergal (2012), one the instrument’s creators, stressed motives for this limitation:

While every effort was taken by the authors of the study during survey construction to limit ambiguity in questions there is potential that individual survey participants may have understood questions differently and/or responded to questions with a different frame of reference than that intended by the developers of the instrument. In addition, the researcher could not control for the veracity of the student responses. (as cited in Pfeffer-Lachs, 2013, p. 82)

The IBM SPSS version 25 (2017) software was utilized to carry out the quantitative computations, while maintaining a 95% level of confidence and a margin of error of .05 ($\alpha = .05$), for a sample size greater than or equal to 30 participants in each group. Further, the pretest and posttest surveys were administered to the same students, in other words, only the college freshman that participated in the CARES-I referred to as the pretest was eligible to participate in the CARES-A referred to as the posttest (Adams & Lawrence, 2015). Additionally, the same group of students provided their opinions on the pretest and posttest that is they provided their

survey responses about their expected social integration prior to joining a learning community in the pretest, and their responses about actual social integration in the posttest questions.

Additionally, for question 1, the relationship between social integration in a learning community with retention of minority freshmen students was determined with the use of the Fisher's Exact Test Analysis; the rationale for this choice was given in the detailed analysis section (SAGE Publications, 2018a). Furthermore, the fact that same students provided their opinions twice was the reason to choose the Fisher's Exact Test Analysis. That is, the students provided their survey responses about their expected social integration prior to joining a learning community in the pretest, and their responses about actual social integration in the posttest questions were utilized for the Fisher's Exact Test Analysis.

Question 2 was the next question in the research design that was answered using stepwise backward logistic regression analysis to determine the effect of (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA on the retention of minority freshman students between the first and second semester of college. I included these factors which were gender, age, high school GPA and end-of-first-semester GPA to find out whether these had any influence on my findings when I sought to find out the relationship between social integration and retention. The stepwise logistic regression inevitably removed the variables that did not contribute to the analysis.

The forward stepwise logistic regression took the variables, one by one, and added them continually where at every phase it selected the variable that offered the maximum enrichment in the fitting. However, the backward stepwise logistic regression does the reverse by removing variables consecutively. The stepwise backward logistic regression technique was performed from the Minitab Express (2017) Software purchased at Kivoto Student Software Store, available

to Students from Concordia University. Since this software could perform the regression analysis and the IBM SPSS version 25 (2017) software does not offer this function, it was used to compute the calculations (Adams & Lawrence, 2015).

Agresti (2013) explains that “at each stage, it selects the term whose removal has the least damaging effect on the model” and the process stops when the removal of any further variables results in “a significantly poorer fit” (p. 210). He continued on to say that “some statisticians prefer backward elimination over forward selection, feeling it safer to delete terms from an overly complex model than to add terms to an overly simple one” as the “forward selection can stop prematurely because a particular test in the sequence has low power” (Agresti, 2013, p. 210).

Detailed Analysis

Question 1: To what extent does social integration in a learning community impact freshman minority student retention?

Question 1 Null Hypothesis: There is no relationship between social integration in a learning community and retention of minority freshmen students.

The proposed test to be utilized to answer this question was the Chi Square Analysis. This test was chosen since both variables which were social integration and retention were categorical (Adams & Lawrence, 2015). However, there were criteria that should be met prior to using the Chi Square Analysis. These criteria were: the 2 variables must be categorical and the value of the cell counts in the cross tabulation needed to “be 5 or more in at least 80%” of the cell counts and there should be no cell value “of less than one” (McHugh, 2013, p. 144).

The retention of minority freshmen students was categorical because the choice on the survey for students to report re-enrollment from the first semester to the second semester was

either “yes” for re-enrolled, or “no” for not re-enrolled. Retention is coded “1” for re-enrolled in the second semester and “0” for not re-enrolled in the second semester. The social integration in a learning community value was categorical since it could be a positive experience or a negative experience. It was coded “0” for negative experience and “1” for positive experience. Therefore, the first criterion was met stating that the 2 variables must be categorical to utilize the Chi Square Analysis. However, the second criterion was not met as shown in the output from the IBM SPSS (2017) Version 25 Software of the cross tabulation table for retention and social integration.

Table 2

Ethnic Retention by Social Integration Experience in Learning Community Cross Tabulation

Ethnic Retention	Negative Social Integration Experience	Positive Social Integration Experience	Total
Other Minority Not Retained	1	1	2
Other Minority Retained	5	31	36
Total	6	32	38
Hispanic or Latino Not Retained	2	3	5
Hispanic or Latino Retained	11	17	28
Total	13	20	33
Caucasian Not Retained	1	1	2
Caucasian Retained	13	23	36
Total	14	24	38
African American Not Retained	0	0	0
African American Retained	6	25	31
Total	6	25	31

Table 2 showed the cross tabulation of retention and social integration experience in a learning community across the various ethnic groups. The Other Minority group of freshman college students has a total of 38 students and from this number a total of two did not re-enroll, one of whom had a negative experience in a learning community and one of whom had a positive experience in a learning community. There were 36 students in the Other Minority freshman

group who reported they were re-enrolled for the second semester in their first year of college; among these students, five reported a negative experience in a learning community and 31 reported a positive experience in a learning community.

The cross tabulation of retention and social integration experience in a learning community for the Hispanic or Latino group of freshman college students showed a total of 33 students. Five of these students did not re-enroll; two had a negative experience in a learning community and three had a positive experience in a learning community. There were 28 Hispanic or Latino freshman students that reported they were re-enrolled for the second semester in their first year of college. Among these students, 11 reported a negative experience in a learning community and 17 reported a positive experience in a learning community.

Additionally, Table 2 showed the cross tabulation of retention and social integration experience in a learning community for the Caucasian group of freshman college students. There was a total of 33 students and from this number, two did not re-enroll. Of these two students, one had a negative experience in a learning community and the other had a positive experience in a learning community. In the Caucasian freshmen student group, 36 reported they re-enrolled for the second semester in their first year of college and among these students 13 reported a negative experience in a learning community and 23 reported a positive experience in a learning community.

For the African American group, a total of 31 students reported that they were re-enrolled for the second semester in their first year of college, six reported a negative experience in a learning community, and 25 reported a positive experience in a learning community. This group had 100% re-enrollment. In addition, Table 2 showed Other Minority group had a cell count of one for negative social experience in learning community and one for positive social integration

in learning community. Likewise, the cell count for Hispanic group was two for negative social experience in learning community and three for positive social integration in learning community.

Similarly, the Caucasian group had a cell count of one for negative social experience in learning community and one for positive social integration in learning community. The second criterion was not met to use the Chi Square Analysis as there were cells with less than 5 counts (McHugh, 2013). According to Hae-Young (2017):

Fisher's exact test is practically applied only in analysis of small samples but actually it is valid for all sample sizes. While the chi-squared test relies on an approximation, Fisher's exact test is one of exact tests. Especially when more than 20% of cells have expected frequencies < 5 , we need to use Fisher's exact test because applying approximation method is inadequate. Fisher's exact test assesses the null hypothesis of independence applying hypergeometric distribution of the numbers in the cells of the table. (p.155)

Table 3

Fisher's Exact Test Results

Ethnicity		<i>n</i>	%	(Exact Sig.) (2-sided)	(Exact Sig.) (1-sided)
Other Minority	Fisher's Exact Test			.294	.294
	Number of Valid Cases	38	27.2		
Hispanic or Latino	Fisher's Exact Test			1	.669
	Number of Valid Cases	33	23.6		
Caucasian	Fisher's Exact Test			1	.607
	Number of Valid Cases	38	27.2		
African American or Black	Fisher's Exact Test			No Results Computed	No Results Computed
	Number of Valid Cases	31	22		

Since Chi Square Analysis could not be used due to cell sizes with less than 5 counts, instead the Fisher's Exact Test was recommended to substitute the Chi Square Analysis, to determine the relationship between social integration in a learning community and the retention of minority freshman students (Hae-Young, 2017). The results are given in Table 3 (the output from the IBM SPSS (2017) Version 25 Software). For every two-tailed Fisher's exact test shown in my research study, an alpha significance level of .05 ($\alpha = .05$) and a confidence interval of 95% were used for the data . All the statistical analyses were performed utilizing the IBM SPSS (2017) Version 25 Software package. Fisher's Exact Test was used in the case of small sample sizes (McDonald, 2014).

The results for the Fisher's Exact Test were shown in Table 3 and were considered for the various ethnic groups which were Other Minority, Hispanics or Latino, Caucasian and African American or Blacks. The Fisher's Exact Test was performed to examine the relation between social integration and retention of minority freshmen students. Considering the minority group that was 38 (27.2 %) Other Minority, the relation between these variables was not significant, ($p = .294$, two-tailed Fisher's Exact Test). The Other Minority group showed no relation between social integration in a learning community and retention of minority freshmen students. Therefore, the null hypothesis was retained, meaning social integration does not have an effect on retention for Other Minority group.

Likewise, the group that was 33 (23.6%) Hispanic or Latino, the relation between these variables was not significant, ($p = 1$, two-tailed Fisher's Exact Test). Similarly, the Hispanic or Latino group showed no relation between social integration in a learning community and retention of minority freshmen students. Therefore, the null hypothesis was retained, meaning social integration does not have an effect on retention for the Hispanic or Latino group. The next

group that was taken into consideration was the 38 (27.2%) Caucasian category, the relation between these variables was not significant, ($p = 1$, two-tailed Fisher's Exact Test).

The Caucasian group showed no relation between social integration in a learning community and retention of freshmen students. Again, the null hypothesis was retained, meaning social integration does not have an effect on retention for the Caucasian group. However, the African American or Black category showed that for retention, all 31 (22%) individuals reported that they were re-enrolled, so no measures of association were computed when the Fisher's Exact Test was performed to determine the relationship between retention and social integration since the retention was constant.

Question 2: What effect does (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, have on the retention of minority freshman students between the first and second semester of college?

Question 2 Null Hypothesis: There is no effect of (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, on the retention of minority freshman students between the first and second semester of college.

This question sought to determine the extent of the effect of (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, on the retention of minority freshman students between the first and second semester of college; thus, a regression analysis was utilized (Field, 2013). Since linear regression used a general linear equation with a continuous dependent variable, it was not appropriate; instead, a logistic regression was used where the dependent of retention is dichotomous, meaning it had two states: either retained or no retained.

The retention state was coded "0" for not retained or "1" for retained. Furthermore, the SPSS version 25 does not offer the logistic regression analysis so the Minitab Express software

was utilized to conduct the analysis (Field, 2013). The reason for investigating the effect of these variables on retention was to determine whether any of these factors which were gender, age, high school GPA and end-of-first-semester GPA had any influence on my findings when I sought to find out the relationship between social integration and retention (Agresti, 2013).

Two logistic regression models were used to analyze the data. The first model used was binary logistic regression that included all the independent variables which were gender, age group, high school GPA and freshman GPA versus retention. The second model was the stepwise regression consisted of adding and removing variables, in the model, in an effort to locate the subgroup of variables in the data set that would provide the greatest performing model, which was a model that lowers any errors to provide a meaningful output result (Agresti, 2013).

Table 4

Coefficients, Standard Error, Coefficients and Variance Inflation Factors

Term	Coefficient	SE Coefficient	VIF
Constant	-0.01	2.97	
Gender	-0.43	0.545	1.05
Age Group	-0.16	0.358	1.01
H/S GPA	0.92	0.92	1.39
Freshman GPA	0.29	0.83	1.40

The assumptions required to use binary logistic regression were the dependent variable to be binary. This assumption was met since retention was the dependent variable and it was binary meaning there were two values which were retained or not retained. The next assumption was met which required the variables to be independent and gender, age group, high school GPA and freshman GPA are independent of each other as the information were not taken from matched data or any recurring measurement. Another assumption was that homoscedasticity was not required, therefore this assumption was met. The next assumption was logistic regression

required very tiny or no multicollinearity between the independent variables and this assumption was met (Field, 2013; Statistic Solutions, 2019).

Minitab (2017) provided a table of coefficients as a portion of its output. If the variance inflation factor (VIF), is equal to 1 there was no multicollinearity among the variables.

However, if the VIF is greater than 1, the predictors might be moderately correlated. The Table 4 showed that the VIF for gender, age group, high school GPA and freshman GPA were less than 1.5 ($VIF < 1.5$), which indicated some correlation and those could be considered as a tiny multicollinearity. Severe multicollinearity is a problem since it could inflate the variance of the regression coefficients, making them unbalanced (Hosmer, Lemeshow & Sturdivant, 2013).

Table 5

Retention Information

Variable	Value	Count
Re-Enrolled	1	131 (event)
Not Re-Enrolled	0	9
	Total	140

The Table 5 showed the retention information where 131 college students were re-enrolled and 9 college students were not re-enrolled. For binary logistic regression, Minitab showed two types of regression equations as given below.

$$P(1) = \exp(Y') / (1 + \exp(Y'))$$

$$Y' = -0.01 - 0.43 \text{ Gender} - 0.16 \text{ Age Group} + 0.92 \text{ H/S GPA} + 0.29 \text{ Freshman GPA}$$

The first equation relates the probability of the event to the response (retention). The second equation relates the predictors to the response (retention). The model for this study showed the utilization of gender, age group, high school GPA and freshman GPA to predict the event that students were re-enrolled for the second semester of college. Equation one showed

the relationship between the probability and the transformed response because of the logit link function” (Minitab, 2019d, para. 4).

The next equation showed how gender, age group, high school GPA and freshman GPA was related to the transformed response (retention), since coefficients from Table 4 for gender and, age group were negative indicated that retention is less likely to occur. Since the coefficients for high school GPA and freshman GPA were positive meant retention is more likely to occur (Minitab, 2019d).

Table 6

Model Summary of Deviance R², Adjusted Deviance R², and Akaike Information Criterion

Deviance R ²	Adjusted Deviance R ²	Akaike Information Criterion (AIC)
3.47%	0%	74.49

In the analysis the Table 6 above showed the model summary of the deviance R², adjusted deviance R², and Akaike Information Criterion (AIC). The deviance R² is the percentage of the deviance for retention where a higher value gave a better fit for the model of the variables. Deviance R² are always between 0% and 100% (Minitab, 2019b). “The adjusted deviance R² is the proportion of deviance in the response that is explained by the model, adjusted for the number of predictors in the model relative to the number of observations” (Minitab, 2019b, para. 7).

Table 7

Odds Ratio for the Categorical Variables

	Odds Ratio (OR)	95% CI
Gender	0.65	(0.15, 2.81)
Age Group	0.85	(0.43, 1.69)
H/S GPA	2.51	(0.42, 15.2)
Freshman GPA	1.33	(0.26, 6.81)

For this research study, the adjusted deviance R^2 in the model summary was the proportion of deviance for the dependent variable, which was retention in the model, adjusted for the number of independent variables which were gender, age group, high school GPA and freshman GPA given as 0% meaning there is no improvement in the model (Minitab, 2019b). The Odds Ratio for the Categorical Variables are shown in Table 7. According to Minitab (2019c) “ odds ratios that are greater than 1 indicate that the event is more likely to occur as the predictor increases. Odds ratios that are less than 1 indicate that the event is less likely to occur as the predictor increases” and the confidence interval helped to assess the practical significance of the results (para. 5).

Table 8

Goodness-of-Fit Tests

Test	DF	Chi-Square (χ^2)	<i>p</i> -value
Deviance	135	64.49	1.000
Pearson	135	169.79	0.023
Hosmer-Lemeshow	2	6.69	0.035

The deviance goodness-of-fit test and the Pearson goodness-of-fit test measured the inconsistency between the current model and the full model. However, “the Hosmer-Lemeshow goodness-of-fit test compared the observed and expected frequencies of events and non-events to assess how well the model fits the data” (Minitab, 2019e, para. 6). The statistical analysis started with the descriptive statistics of gender, age group, high school GPA and Freshman GPA as shown in Table 9 which were the variables that were considered to determine whether these variables had any effect on retention. Hole (2012) explained that the results of regression analysis were displayed better in tables as APA does not provide any clear guidelines about the reporting of regression results.

Table 9

Descriptive Statistics: Gender, Age Group, HS GPA and Freshman GPA

	<i>n</i>	Minimum	Maximum	Mean	Std. Deviation
Gender	140	0	2	1.59	.51
Age Group	140	1	4	2.04	.97
HS GPA	140	2	4	3.10	.42
Freshman GPA	140	2	4	3.30	.45

The deviance table shown in Table 10 displayed which factors that is gender, age group, high school GPA or freshman GPA, had a statistically significant relationship with the retention. The significance level used was .05 ($\alpha = .05$) and the results indicated that all the variable factors which were gender, age group, high school GPA or freshman GPA had no statistically significant relationship with retention because the p - values were greater than .05 ($p > .05$) using binary logistic regression analysis.

Table 10

Binary Logistic Regression: Deviance Table for Retention versus Gender, Age Group, high school GPA and freshman GPA

Source	DF	Adj Dev	Adj Mean	Chi-Square (χ^2)	p -value
Regression	4.00	2.32	0.58	2.32	0.68
Gender	1.00	0.34	0.34	0.34	0.56
Age Group	1.00	0.20	0.20	0.20	0.65
H/S GPA	1.00	0.95	0.95	0.95	0.33
Freshman GPA	1.00	0.12	0.12	0.12	0.73
Error	135.00	64.49	0.48		
Total	139.00	66.81			

The next process utilized the backward stepwise regression analysis as shown in Table 11. The backward stepwise logistic regression removed the variables that did not contribute to the analysis. The stepwise backward logistic regression technique was performed from the

Minitab Express (2017) Software purchased at Kivoto Student Software Store, available to Students from Concordia University. Since this software could perform the regression analysis and the IBM SPSS version 25 (2017) software does not offer this function, it was used to compute the calculations (Adams & Lawrence, 2015).

Table 11

Backward Stepwise Regression Analysis for Retention versus Gender, Age Group, high school GPA and freshman GPA

	---Step 1----		---Step 2----		---Step 3----		---Step 4----		---Step 5----	
	Coef	<i>p</i>	Coef	<i>p</i>	Coef	<i>p</i>	Coef	<i>p</i>	Coef	<i>p</i>
Constant	0.75		0.78		0.77		0.74		0.94	
Gender (male=1, female=2)	-0.03	0.56	-0.03	0.50	-0.03	0.53				
Age Group (18-25=1, 26-35=2, 36+ =3)	-0.01	0.57	-0.01	0.58						
HS GPA	0.06	0.31	0.07	0.16	0.07	0.18	0.06	0.20		
Freshman GPA	0.02	0.72								
S		0.25		0.25		0.25		0.25		0.25
R-sq		0.02		0.02		0.01		0.01		0.00
R-sq (adj)		0.00		0.00		0.00		0.00		0.00
R-sq (pred)		0.00		0.00		0.00		0.00		0.00
Mallows' Cp		5.00		3.13		1.43		-0.16		-0.56

Note. α to remove = .05

Backward elimination removed all terms from the model.

The backward stepwise regression analysis in my analysis removed the independent variables that were not significant, one at a time from the model and re-ran the model until all the remaining variables in the new model were statistically significant. This process is called the stepwise backward regression and it was done automatically with the Minitab Express (2017) software. In other words, this second model which utilized the backward stepwise logistic regression automatically eliminated the non-significant variables. This kind of regression

selected only the appropriate variables and reduced the set of independent variables to those that are necessary.

In addition, the Minitab Express (2017) Software automatically removed variables in the backward stepwise regression analysis that were considered not significant to the analysis. When the analysis was complete, the Minitab Express (2017) software results showed that all the variables which were gender, age group, high school GPA and freshman GPA had no effect on retention. In the stepwise computation, “the process systematically adds the most significant variable or removes the least significant variable during each step” (Minitab Inc., 2017, para. 1).

Since all the factors which were gender, age group, high school GPA or freshman GPA showed no effect on retention when binary logistic regression was performed meaning the model could be refitted without any of these factors, then the backward stepwise logistic regression was utilized to verify that all the factors gender, age group, high school GPA or freshman GPA showed no effect on retention. The backward stepwise regression analysis elimination started with all the factors in the model and Minitab removed the least significant variable for each step. Minitab Inc. (2017) software stopped when all variables in the model have p - values that were less than or equal to alpha value of .05 ($\alpha \leq .05$) as shown in Table 11.

The process took five steps as shown in Table 11 when counting Step 1 as the estimation of a model with all variables included which were gender, age group, high school GPA and freshman GPA. At each subsequent step, the weakest variable was eliminated until all variables in the model are significant at $\alpha \leq .05$ level). At a specific step, the variable was eliminated was given by the new blank spot in the display as compared to the previous step as shown in Table 11.

For example, from Step 1 to Step 2, the freshman GPA variable was eliminated since it had the highest p -value. Considering, from Step 2 to Step 3, the age group variable was eliminated, from Step 3 to Step 4, the gender variable was dropped and from Step 4 to Step 5 the high school GPA was dropped. The backward stepwise regression analysis reinforced the results obtained from the binary logistic regression analysis that gender, age group, high school GPA or freshman GPA showed no effect on retention (Minitab, 2019a).

Chapter 4 Summary

After examining student social integration through participation in a learning community and its association with the retention of freshmen minority students from the first semester to the second semester in the first year of college, it was found that social integration did not influence the retention of the minority groups (Other Minority and Hispanic) and the majority group (Caucasian), since the null hypothesis was not rejected for all the groups. The results for the Fisher's Exact Test for 38 (27.2 %) Other Minority, the relation between these variables was not significant, ($p = .294$, two-tailed Fisher's Exact Test).

The Other Minority group showed no relation between social integration in a learning community and retention of minority freshmen students. Therefore, the null hypothesis was retained, meaning social integration does not have an effect on retention for Other Minority group. Likewise, for the 33 (23.6%) Hispanic or Latino group, the relation between these variables was not significant, ($p = 1$, two-tailed Fisher's Exact Test). Similarly, the Hispanic or Latino group showed no relation between social integration in a learning community and retention of minority freshmen students. Therefore, the null hypothesis was retained, meaning social integration does not have an effect on retention for the Hispanic or Latino group. The next

group that was taken into consideration was the 38 (27.2%) Caucasian category, the relation between these variables was not significant, ($p = 1$, two-tailed Fisher's Exact Test).

The Caucasian group showed no relation between social integration in a learning community and retention of freshmen students. Again, the null hypothesis was retained, meaning social integration does not have an effect on retention for the Caucasian group. However, the African American or Black category showed that for retention, all 31 (22%) individuals reported that their retention was 'yes' so no measures of association were computed when the Fisher's Exact Test was performed to determine the relationship between retention and social integration since the retention was constant.

The study also examined the extent of the relationship between social integration of minority college freshmen in learning communities, gender, age, high school GPA, and the end-of-semester GPA (the independent variables) with the re-enrollment or retention (dependent variable) of minority freshmen students. I performed an analysis using the Minitab (2017) Software for the backward stepwise regression analysis with retention versus these variables which were gender, age group, high school GPA and freshman GPA. The results of the backward stepwise regression showed that all the independent variables were eliminated meaning gender, age group, high school GPA and freshman GPA had no effect on retention.

Chapter 5: Discussion and Conclusion

Introduction

The goal of this final chapter is to provide a summary and discussion of the results of this dissertation study. In addition to the interpretation of the results, there are relations to the literature. Further, the limitations of this study are described along with the implications of the results on policy, practice, and theory. There are recommendations for further research and following this is the conclusion. Previous researchers analyzed minority freshmen student retention and the strategies that helped them to succeed academically; my research followed the same form of inquiry. I examined to what extent social integration in a learning community impacted freshman minority student retention. Huerta and Bray (2013) expressed that there are many research studies which illustrate the benefits of learning communities and its positivity on learning outcomes.

Loes et al. (2017) stressed how learning in groups enhanced greater positive student social integration, which resulted in higher chances for students to persist to the second year of college. Peña (2017) showed the usage of a learning community for community college First-Year Experience (FYE) programs which aided struggling Latino males to persist and moved on to 4-year institutions. Some of the FYE programs built effective learning communities by encompassing social actions which extended outside the classroom that included cultural shows and field tours, to link spaces shared by freshmen students with faculty and staff.

Tinto (2012b) emphasized that learning communities allowed students to form support groupings, even outside of their classrooms, so that they are involved in more learning activities. This, in turn, helped them gain more knowledge which results in persisting in college. Seidman (2012) mentioned that the formation of learning communities allowed colleges to focus on

different methods of course delivery for the students; clustering students together with the same interests in residence halls and in classrooms created a relationship within the group which, in turn, helped the students to integrate academically and socially into the college setting. Through these relationships, students in learning communities developed a support system and a sense of belonging that assisted them to navigate academic and campus life.

Researchers have theorized and created models that offered insights about college student retention. The theory of learning communities and retention were examined in prior research and were linked to achievement (Berger et al., 2012; Tinto, 2012a, 2012b;). Furthermore, many colleges formed various types of learning communities at their sites as they were concerned about their programs and also subject to “increasing demands by external stakeholders for undergraduate education accountability” (Benjamin, 2015, p. 11). Kalsbeek (2013) noted that learning communities were high-impact, cost-effective strategies for higher education institutions, but most especially for community colleges focused on improving student success.

One useful strategy that had emerged from learning communities was student engagement by faculty during classroom time that, then spilled out into group learning. Students formed study groups where they could flesh out ideas and course content which then enhanced their learning (Tinto, 2012a). After 50 years, learning communities had transformed from being a novel program used by few colleges to an extensive, reorganized student support mechanism incorporated by almost 1,000 colleges and universities in the United States (Matthews et al., 2012 as cited in Jessup-Anger, 2015). Learning communities facilitated student success in various classes and offered a structure to align the student learning with retention. This alignment could happen when there was collaboration among instructors or with instructors and staff members to enhance the achievement of students (Tinto, 2012a).

In this chapter, I elaborated on the results of this quantitative correlational study on the relationship between social integration and the retention of freshmen minority groups and one Caucasian group who participated in a learning community during their freshman semester in college. I included discussions about the manipulation of the data for this study using the Fisher's Exact Test, Logistic Regression Analysis and Stepwise Backward Regression Analysis. In addition, there were discussions in this chapter that related to the literature and I reviewed the limitations of this study as well as suggestions for practice, theory, and policy were included. The chapter ends with recommendations for future research on learning communities and the college retention of minority students, and a conclusion.

Summary of the Results

The purpose of my research was to investigate the extent that social integration in a learning community impact on freshman minority student retention. The research questions were as follows:

Question 1: To what extent does social integration in a learning community impact freshman minority student retention?

Question 2: What effect does (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, have on the retention of minority freshman students between the first and second semester of college?

To answer these research questions, data was gathered from freshmen college students through social media with a link to the online Qualtrics survey on websites such as LinkedIn, Twitter, Google+, and Facebook at the end of the fall 2017 semester for both surveys as well as data on their personal characteristics. Two hypothesis tests were conducted and results are discussed below.

I accepted the null hypothesis for Question 1, meaning social integration in a learning community was not related to retention for these freshmen groups which were Hispanics or Latinos, Other Minorities and Caucasians, However, the African American or Blacks student group showed that for retention, all 31 respondents reported that their retention status were re-enrolled, so no measures of association were computed for the cross-tabulation of retention and social integration in a learning community since the retention was constant. For Question 2, I accepted the null hypothesis meaning gender, age group, high school GPA, and freshman GPA had no effect on retention. The null hypotheses were as follows:

Question 1 Null Hypothesis: There is no relationship between social integration in a learning community and retention of minority freshmen students.

Question 2 Null Hypothesis: There is no effect of (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, on the retention of minority freshman students between the first and second semester of college.

Discussion of the Results

The purpose of the study was to investigate whether student social integration through participation in a learning community was associated with the retention of freshmen minority students from the first semester to the second semester in the first year of college. In this study, more freshmen students reported positive social integration experiences in a learning community than those freshmen students who reported negative social integration experiences as their actual social integration were greater than their expected social integration.

In other words, from the 140 college freshmen students surveyed, 101 reported positive social integration experiences in learning community and only 39 reported negative social integration experiences in learning community. This finding correlated with past research which

found that learning communities are linked courses that encourage academic and social integration to aid students become involved, motivated and re-enrolled in upcoming semesters (Huerta & Bray, 2013). Further, there were inferences that all the intervention strategies for retention, especially those that incorporated learning communities, have produced gains in educational achievement. Students also gained indirectly from the collaboration in learning communities as they experienced a sense of satisfaction which was a precursor to student success (Rocconi, 2011, as cited in Habley et al., 2012).

Data were analyzed to answer question one to determine the extent of the relationship between social integration in a learning community and retention of minority freshmen students. A correlational analysis was done using Fisher's Exact Test to answer the question. The results showed 38 (27.2 %) of the Other Minority group ($p = .294$, two-tailed Fisher's Exact Test) and 33 (23.6%) of the Hispanic or Latino group ($p = 1$, two-tailed Fisher's Exact Test). These two minority groups showed no relation between social integration in a learning community and retention of minority freshmen students.

Further, 38 Caucasian freshmen college students in learning community responded to the survey questions and an analysis using Fisher's Exact Test was performed on their data to add discussion and comparison to the minority freshmen students. The results showed 38 (27.2%) of the Caucasian group ($p = 1$, two-tailed Fisher's Exact Test). This majority group also showed no relation between social integration in a learning community and retention freshmen students.

After analyzing these data, the researcher failed to reject the null hypothesis for question one as it was found that social integration did not influence the retention of Other Minority and Hispanic as well as for the Caucasian, therefore, I accepted the null hypothesis for these ethnic groups. However, the African American or Black category showed that for retention, all 31

(22%) individuals reported that they were retained, so no measures of association were computed when the Fisher's Exact Test was performed to determine the relationship between retention and social integration since the retention was constant.

Hae-Young (2017) noted that "Fisher's exact test is practically applied only in analysis of small samples but actually it is valid for all sample sizes" (p.155); therefore, a value of 0 cannot be analyzed for students not retained. There were some possible reasons to retain the null hypothesis which were the data was taken from college freshman students across the United States and even though there was diversity in this sample, a sample of minority freshmen students from one college or from one state could provide different results. The college freshmen students were in different learning communities and there was way to measure the quality of the learning community. Further, the sample size was small for each group in this study and another possible reason was the one semester time frame was utilized to measure the social integration experience and retention.

This study also examined the effect of (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, on the retention of minority freshman students between the first and second semester of college. The data collected through the Qualtrics were used in the analysis utilizing the binary logistic regression and backward stepwise regression to answer question two (Field, 2013). The analysis was performed to determine whether other factors, apart from social integration of minority college freshmen in learning communities, contributed to minority student retention. These other factors are gender, age, high school GPA, and the college end-of-semester GPA.

The results showed gender, age group, high school GPA and freshman GPA, had no effect on retention when binary logistic regression and stepwise backward logistic regression

were utilized. The results from the binary logistic regression analysis indicated that all the variable factors which were gender ($p = .56$), age group ($p = .65$), high school GPA ($p = .33$) and freshman GPA ($p = .73$) had p - values greater than .05 ($p > .05$) which indicated no effect of (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, on the retention of minority freshman students between the first and second semester of college.

The backward stepwise logistic regression eliminated all the independent variables which were gender, age group, high school GPA and freshman GPA from the equation meaning these variables had no effect on retention. The backward stepwise logistic regression analysis was performed to reinforce the results obtained from the binary logistic regression as well as to verify that all the factors gender, age group, high school GPA or freshman GPA showed no effect on retention. After analyzing these data, the researcher failed to reject the null hypothesis for question two as it was found that gender, age group, high school GPA or freshman GPA showed no effect on retention. therefore, I accepted the null hypothesis. Again, the possible explanation for retaining the null hypotheses two, could be ascribed to the similar reasons for retaining the null hypotheses one.

Discussion of the Results in Relation to the Literature

The first year of college represents a vital shift for students from high school. To support retention in college, it is important to place freshmen students in learning communities which includes a range of courses to support their engagement and academic achievement. Huerta and Bray (2013) found that utilization of learning communities was a strategy that was not thoroughly reviewed in the past decade, although it had been shown to promote retention. The purpose of my study was to investigate whether student social integration through participation in a learning community is associated with the retention of freshmen minority students from the

first semester to the second semester in the first year of college. I utilized the survey data I collected using the Qualtrics application via social media from college freshmen that participated in learning communities across the United States.

The overall findings of my research study did not support prior research surrounding social integration through learning communities and retention; however, this may have been due to small sample sizes in each group as past research has shown that learning communities have a positive impact on college freshman retention, including minorities. Huerta and Bray (2013) showed that learning communities had a positive effect on Hispanics due to their ability to learn collaboratively.

Further, my research study did not relate to Sperry's (2015) findings that indicated that college students with good GPAs continue to perform well in learning communities in their freshman year. My research finding does not correlate with past research which found that learning communities improve retention rates (Hill & Woodward, 2013). However, my research findings could contribute to the body of knowledge in the arena of education as there was a need for more research about the impact of social integration on retention for college minority freshman students. It can serve as a model for future research on learning communities and the retention of minority student groups.

Furthermore, Habley, Bloom, and Robbins (2012) stressed that "over the past four decades," curricular strategies were developed concentrating on the retention of students and despite the fact that "retention and degree completion rates have not improved" (p. 234). Habley et al. (2012) argued that it was imperative for universities and colleges to strengthen their efforts to broaden services which included "student transition programs" that were at the core of student

success (p. 234). Previous research had suggested that in order for students to succeed in college, they need to obtain support, both socially and academically (Tinto, 2012b).

Another study explained that although learning communities are mostly utilized in the general educational setting, it is moving into other areas in college settings to address student attrition (Matthews et al., 2012). Matthews et al., (2012), noted that colleges were beginning to develop and to implement top practices that reinforced the quality of learning communities. The Evergreen State College and New Century College had articulated these practices in their mission statements. Not only were their standards of good practice expressed clearly, there were also continuing developmental programs for their faculty (Matthews et al., 2012).

Further, the top practices frequently encompassed programs that promoted active and collaborative learning. Additionally, many colleges had begun to make deliberate efforts to address problematic parts of the curriculum, to meet the needs of the students, and to improve the quality of student socialization and learning (Matthews et al., 2012). My research study contributed to the body of knowledge that existed by investigating the relationship between the expected social integration experience and the reported social integration for minority freshman participating in a learning community.

In this study I assumed that joining a learning community created an increase in social integration among the freshmen students. Gašević, Zouaq, and Janzen (2013) reinforced this point that learning communities offered a rich environment for student growth through engagement with other significant agents of socialization like classmates and faculty members when they stated that “social interaction with peers has long been recognized as one of the critical factors for facilitating the learning process” (p. 1461).

The findings of my research confirmed Braxton et al. (2014) which mentioned that students who participated in learning communities tend to have positive attitudes about their academic and intellectual development. When students expressed positive views of their college and possessed a sense of belonging in the college environment, they were more apt to do well in their studies and had the desire to graduate. Loes et al. (2017) discovered that when learning took place in freshmen groups, there was more positive student socialization that increased the likelihood students would return for the second year of college.

Research shows that colleges have used substantial finances and resources to aid student academic and social integration (Seidman, 2012). These colleges offered orientation and counseling programs that have positively influenced the retention of students. However, “taken in isolation, they may not provide the most comprehensive and intensive experience to really effect change” (Seidman, 2012, p. 282). Voelkel and Chrispeels (2017) stressed that many countries were struggling to increase student learning and to raise the achievement level of their students. In my study, data collected from students revealed that their actual social integration experiences in a learning community were stronger than their expected social integration experiences (see Table 2) although there was no statistical link between minority freshmen students’ social integration in learning communities to their retention.

My study did not yield results that supported past research on learning communities and retention. In reference to the literature, Hill and Woodward (2013) indicated that participation in a learning community appeared to increase the retention of students, but more research was necessary in the future to get a better understanding of the connections between student retention and their involvement in learning communities. Though learning communities had been

assessed in the past, a current look at this promising practice was justified, especially for minority students.

Past research has showed that minority students that develop strong associations on college campuses with faculty, peers, and administrators are more inclined to persist to degree completion (Arbelo-Marrero and Milacci, 2016) and First-Year Experience (FYE) programs for learning communities at community colleges have helped struggling Latino male college students remain in programs and continue on to 4-year colleges (Peña, 2017).

My research also examined whether other factors, apart from social integration of minority college freshmen in learning communities, contributed to minority student retention. These other factors were gender, age, high school GPA, and the college end-of-semester GPA. My results indicated no relationship between retention and any of the independent variables to predict the success of retention. Therefore, further research on these independent variables and retention would greatly benefit colleges that strive for higher retention rates. However, my study could add to the body of knowledge that existed because it focused on minority students in learning communities and retention.

Limitations

This study had several limitations, including the fact that a single quantitative research study does not account for all issues linked with social integration in learning communities and minority freshmen retention. In addition, pre-college characteristics, such as parent educational attainment and parental income, were not considered (Astin & Oseguera, 2012). More limitations of this study included not focusing on students from one single learning community or institution but from several learning communities across the United States. Thus, there was no accounting for the quality of the learning community, as well as how it was managed. Sweat

(2016) mentioned that there were many possible explanations why participating in learning communities had no effect on the retention of student or their college freshman GPA.

It was noted that the learning community programs at Eastern Kentucky University (EKU) might not be effective due to “different professors with different personalities teach the course, and the professor/student relationship could determine the success of the students” (Sweat, 2016, p. 55). Purdie and Rosser (2011) found that participation in learning communities like an Academic Theme Floors (ATFs) and a First-Year Experience (FYE) had no effect on student grades or retention.

However, their findings suggested that retention could be improved when faculty and student advisers work together to design programs that associated the course of study and residential experience, as well as promoting student collaboration with peers and faculty who had the same academic interests. Self-reporting was another limitation as participants might want to provide inaccurate data in order to present themselves as a high achiever. There may have been issues with the accuracy of self-reporting of GPAs as persons who were low achievers may tend to provide imprecise reports than students who are high achievers (Caskie, Sutton & Eckhardt, 2014, p. 385). Teye and Peaslee (2015) noted that researchers should exercise carefulness in utilizing self-reported grades from persons.

The study was also limited to minority freshmen retention of the first semester to the second semester in the first year of college; their second semester retention was not included in this study. Furthermore, the study was limited to voluntary responses from college freshmen students in learning community who completed the online Qualtrics survey. For my research study, college freshmen enrolled in fall 2017 were selected through a convenience sampling method. Adams and Lawrence (2015) described convenience sampling as kind of non-

probability model comprised of individuals who were easily available and showed interest in participation.

Non-probability sampling was a type of nonrandom sampling where random collection of data was not required, and the bias of sampling was a grave issue with non-probability sampling since the size of the sample was not set and reachable to offer confidence that this type of sampling represented the whole population (Adams & Lawrence, 2015). In this study, the independent variables of age, ethnicity, high school GPA and end-of-first-semester GPA were self-reported by participants, so it was assumed their reports were accurate and honest (Adams & Lawrence, 2015).

The limitation of freshmen self-reporting in the learning communities was due to their perceptions being necessarily subjective: “Self-reports may be inaccurate due to the social desirability bias” (Adams and Lawrence, 2015, p. 106). Although there was diversity among the sample of minority students at various colleges across the United States, a sample of minority freshmen students from colleges in one state only could provide different results. Finally, the sample size was small, so the background and minority student social integration measures were limited, larger sample sizes may yield different results.

Implication of the Results for Practice, Policy, and Theory

The results of this research study suggested social integration in learning community had no impact on freshman minority student retention. There was no effect of (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, on the retention of minority freshman students between the first and second semester of college.

Practice. My research study indicated that college freshman students participating in a learning community revealed that their actual social integration experiences in a learning

community were stronger than their expected social integration experiences (see Table 2). Therefore, it was assumed that joining a learning community created an increase in social integration. In addition, the results of my research study did not indicate any statistically significant relationship between social integration of minority college freshmen in learning communities, gender, age, high school GPA, and the end-of-semester GPA (the independent variables) with the re-enrollment or retention (dependent variable) of minority freshmen students, but the data still contributed to the body of knowledge needed to address the retention of minority students and social integration.

Although my study might not have indicated a relationship between social integration and retention, there were prior researches which established that students with a higher social-integration level were more committed to the institution, which, in turn, resulted in persistence (Tinto, 1975, as cited in Braxton et al., 2014). Even though I was unable to assert that a relationship existed between social integration and retention; Huerta and Bray (2013) explained there were numerous research studies which demonstrated the benefits of learning communities and the positive impact it had on learning outcomes.

My research study provided additional information that could help policymakers, colleges, universities, and administrators in determining how social integration in learning communities can influence retention among minority students. Learning communities have been found to help students integrate socially and academically when students are grouped in clusters of courses; this has helped them successfully complete courses (Tinto, 2012b).

In this study, all the minority groups (Other Minority, Hispanic, and African American) as well as the Caucasian group of freshmen students who participated a learning community indicated that they arrived with lower expectations of involvement and engagement but that these learning communities had engaged them more than they anticipated. This information could be

useful to colleges who wanted to improve their social integration climate for freshmen students by understanding that perhaps this group arrives to college with low expectations about their social integration. Additionally, when data were explored to understand the extent to which social integration in a learning community impacted freshman retention, it was found that social integration did not influence freshman in the Other Minority, Hispanic, and Caucasian retention since the null hypothesis was not rejected for all these groups.

However, the retention of African American or Blacks stayed constant as all of them self-reported they would remain in college. When the variables (a) gender, (b) age, (c) high school GPA or (d) end-of-first-semester GPA, were moderated to find the relationship between them and retention, on the retention of minority freshman students between the first and second semester of college, these variables had no effect on retention. Overall, this research should interest educators and administrators interested in ways to improve retention through early interventions for freshman student first year experiences.

Policy. Policy makers are interested in college completion and success for their constituents; including the types of support programs that are developed to sustain college retention (Braxton, 2014). In response to demands to increase student retention, state policymakers have been the key players in searching for methods to foster the success of students as performance-based policies were implemented in many states where the funding for universities were based on the number of students that graduated instead of the amount of students that were enrolled in the various colleges (Bell, 2018).

The underlying logic is simple: if colleges have an incentive to graduate more of the students they enroll, they will invest more to help their students actually earn degrees. Despite the intuitive appeal of performance-based funding, research evidence suggests

these policies do not produce intended boosts in student graduation rates. (Bell, 2018, para. 3)

The results of my study could provide useful insights for policy makers at the state level despite findings that revealed no statistically significant relationship between social integration and retention. My research study revealed both majority (Caucasian) and minority (Hispanic, African American and Other Minority) freshmen students reported positive social integration experiences in a learning community (see Table 2) and that their actual social integration was greater than their expected social integration.

Therefore, policy makers could use this result as a guide to make decisions about support interventions that promote activities that foster social integration at colleges such as on-campus workshops to improve academic skill building, freshman experiences that take place both on and off campus, and other social activities that are tied to academics. These are opportunities for students to engage, find assistance, and develop bonds that can sustain their college completion efforts. Further, students have positive experiences in learning communities when they develop a mentoring relationship with a faculty or staff member or develop a mentoring relationship with an upper-class student (see appendix A). Policy makers can support funding for these types of activities that demonstrate positive outcomes in the retention of students.

Additionally, there were concerns as to the manner some colleges conducted studies about student departure as there were inaccuracies in assessing college level aspects related with reduction of student leaving college (Braxton et al., 2014). Braxton et al. (2014) made recommendations for campuses to use systematically rigorous studies of student leaving college to inform their retention policies. In order to attain this, “institutional administrators and state policymakers must provide departments of institutional research, student affairs, and enrollment

management with the funding and personnel necessary to conduct this level of research” (Braxton et al., 2014, p. 32).

For colleges that have very low rates of freshman student retention, researchers point out that out that social integration has a vital and indirect role in student retention at residential institutions (Braxton et al., 2014). Finding ways to improve retention of college students had been the focus of educators for many years. According to Tinto (2012b), academic and social support is essential for students to achieve success in college. The freshman year of college is vital as this is when these students require the most support to continue in college.

However, increasing minority student retention still requires more research exploration. Hill and Woodward (2013) explained that the development of learning communities was an attempt to improve students’ academic and social experiences in college since student retention was a challenge that many colleges face. Minority students are at risk to leave college because of inadequate provisions for college transitions; they are often unable to form a sense of belonging in a college setting (Hill & Woodward, 2013).

State-level policy strategies for retention had increased in number over the years. Even as states historically had limited engagement on this issue in the past, “the end of the twentieth century and beginning of the twenty-first century have seen many states implement accountability systems” where the retention of college students was a main measure for measuring the accomplishment of colleges and was frequently a motivation to some extent for “determining funding for state campuses” (Berger et al., 2012, p.10). As accountability has increased, and despite the findings of my study, learning communities are a viable program that can be used in diverse forms to increase student retention.

Theory. Tinto's (1975, 1978) theory of progression toward departure from college which demonstrated a movement of connections between the learner and the college's academic and social systems was central to this study. Tinto (1987) explained that retention is related to student's aptitude and interactions with the college (as cited in Hagedorn, 2012). If students failed to integrate academically, they might be less committed to their college completion goal. Failure to integrate socially lessens their commitment to the educational institution; therefore, there was a strong need for a link between the college setting and the commitment of the students. Further, those learners that struggle and do not persevere are in many instances, those who have not been able to incorporate socially and academically (Hagedorn, 2012).

Tinto's retention model showed that when students repeatedly change their goals and college commitment, they departed college early. However, it is important to account for external factors, such as student employment, and other commitments that students might have which impede upon their dedication to college. These are factors that also impact retention. It was also important to note that students have prior experiences before they entered college, such as their high school or previous college academic coursework as noted by a GPA, academic and social attributes, personal circumstances such as their social standing, ethical characteristics, as well as their gender and age; these affected their performance in college both directly and indirectly (Astin & Oseguera, 2012).

According to the National Student Clearinghouse (2014), "educators, policymakers, and institutions have worked for decades to increase rates of college graduation, but about half of students who enter college drop out without completing a bachelor's degree" (as cited in Silver-Wolf, Perkins, Butler-Barnes, & Walker, 2017, para. 1). Furthermore, students in online courses dropped out from their programs because they felt isolated, frustrated and disconnected. In

addition, they departed college due to “technology disruption”; “failure to make contact with faculty”; “lack of instructor participation during class discussion”; and “lack of social interaction” (Lehman, Conceição, & Conceio, 2013, p. 5).

These are other issues that colleges must consider when developing theories and frameworks to inform student retention. Colleges could increase student retention by making modifications to programs where students work in groups that help them develop a sense of belonging, develop peer support groups, and relationships with faculty that will help them complete their coursework (Tinto, 2012b). Learning communities focused on different ways to offer courses to students; grouping students together with similar interests in residence halls and in classrooms produced a connection within the group which helped them to integrate academically and socially in college (Seidman, 2012).

Tinto (2012b) explained that learning communities had many characteristics that created connections socially to improve and enhanced learning for students as courses were organized by themes which “serve to build academic as well as social connections” (p. 262). According to Lopez and Jones (2017) social integration was vital; when there was interaction between students and faculty in college, the college student became more successful in their studies. The authors mentioned that the “more that students visit and approach instructors after class, discuss career plans, and ask advice about class projects at both the community college and university, the more likely they are to adjust better academically in a university” (Lopez & Jones, 2017, p. 176).

Fink and Inkela (2015) stated that the many public colleges had many undergraduate students who did not receive the skills they needed to compete globally. This caused “an erosion of public trust and has forced many American higher education to create and institute new and improved ways to deliver its undergraduate education” (p. 10). This study was designed to

capture the social integration that occurs through learning communities and the impact on retention; more research studies are needed to fully understand this phenomenon as colleges are forced to address high attrition rates, especially among minority student groups. Learning communities are a good method to consider retention reforms early in a student's college academic experiences.

Recommendations for Further Research

This study was designed to examine the relationship between social integration in a learning community with retention of minority freshmen students. There was also analysis of the extent of a relationship between social integration of minority college freshmen in learning communities, gender, age, high school GPA, and the end-of-semester GPA (the independent variables) with the re-enrollment or retention (dependent variable) of minority freshmen students. Since learning communities had become trendier in higher education, more research was necessary to examine its structure.

There had been little research that centered primarily on social integration of minority freshmen students in learning communities the relationship to retention. Based on this study, these recommendations for future research emerged; this study could be duplicated at a single college or at one state. Future studies should consider qualitative designs as this was only a quantitative study where the entire story of freshmen college students was not captured. According to Creswell (2013), "we should empower individuals to share their stories and hear their voices" as well as get a better understanding of the reasons that individuals "responded as they did" (p. 48).

Furthermore, there should be studies that compared minority freshmen in learning communities and those students that did not participate in learning communities. The CARES

instrument was designed by Florida Atlantic University for freshmen entering the college.

Future research should focus on administering this instrument to the students in their sophomore year and for subsequent years until graduation. Future research should include additional independent variables like educational level of parents, socio-economic background, and first-generation student status to determine whether there was any relationship between these factors and retention.

Conclusion

This study expanded the body of knowledge of social integration and retention as it analyzed whether student social integration through participation in a learning community was linked with the retention of freshmen minority students from the first semester to the second semester in the first year of college. This research was able to show that all the minority groups (Other Minority, Hispanic, and African American) as well as the Caucasian group of freshmen students who participated in a learning community had more positive social integration experiences than those who reported negative social integration experiences.

Further, the findings retained the null hypothesis that social integration did not influence the retention of Other Minorities, Hispanics, and Caucasian ethnic groups. There were no measures of association computed for the cross-tabulation of Retention and Social Integration for African American or Blacks since the retention was constant. Additionally, the findings showed that the variables gender, age, high school GPA, and the end-of-semester GPA failed to achieve statistical significance with the re-enrollment or retention of minority freshmen students.

Additional studies should consider the use of qualitative research to allow individuals to express their views, and therefore capture the reasoning behind their thoughts and decisions. The main priority of colleges is the success of students and ways to retain them (Tinto, 2012b). Even

though this study did not show positive findings in some areas, it offered insights into the process of social integration and retention.

References

- Adams, K. A., & Lawrence, E. K. (2015). *Research methods, statistics, and applications*. Thousand Oaks, CA: SAGE Publications, Inc.
- Agresti, A. (2013). *Categorical data analysis*. Retrieved from <https://ebookcentral-proquest-com.proxy-library.ashford.edu>
- Arana, R., & Blanchard, S. (2018). Loyalty to ethnic heritage and Hispanic college student engagement. *Journal of Hispanic Higher Education*, 17(4), 332–346. Retrieved from <http://search.ebscohost.com.proxy-library.ashford.edu/login.aspx?direct=true&db=eric&AN=EJ1190361&site=eds-live&scope=site>
- Arbelo-Marrero, F. & Milacci, F. (2016). A phenomenological investigation of the academic persistence of undergraduate Hispanic nontraditional students at Hispanic Serving Institutions. *Journal of Hispanic Higher Education*, 15(1), 22–40. <http://dx.doi.org/10.1177/1538192715584192>
- Astin, A. W., & Oseguera, L. (2012). Pre-College and institutional influences on degree attainment. In A. Seidman (Ed.), *College student retention: Formula for student success* (pp. 119–164). Lanham, MD: Rowman & Littlefield.
- Bauman, K. (2017). *School enrollment of the Hispanic population: two decades of growth*. Retrieved from https://www.census.gov/newsroom/blogs/random-samplings/2017/08/school_enrollmentof.html
- Bell, E. (2018). *Why performance-based funding fails to improve college graduation rates- and how states can do better*. Retrieved from <https://scholars.org/brief/why-performance-based-funding-fails-improve-college-graduation-rates-and-how-states-can-do>

- Benjamin, M. (2015). *Learning communities from start to finish new directions for student services, number 149*. Retrieved from <https://ebookcentral-proquest-com.proxy-library.ashford.edu>
- Berger, J. B., Ramirez, G. B., & Lyons, S. (2012). Past to present: A historical look at retention. In A. Seidman (Ed.), *College student retention: Formula for student success* (pp. 7–34). Lanham, MD: Rowman & Littlefield.
- Black, A., Terry, N., & Buhler, T. (2016). The impact of specialized courses on student retention as part of the freshman experience. *Academy of Educational Leadership Journal*, 20(1), 85–92. Retrieved from <http://www.alliedacademies.org/academy-of-educational-leadership-journal/>
- Braxton, J. M., Doyle, W. R., Hartley, H. V., Hirschy, A. S., Jones W. A., & McLendon, M. K. (2014). *Rethinking college student retention*. San Francisco, CA: Jossey-Bass.
- Buch, K., & Spaulding, S. (2011). The impact of a psychology learning community on academic success, retention, and student learning outcomes. *Teaching of Psychology*, 38(2), 71–77. <https://doi.org/10.1177/0098628311401589>
- Caskie, G. I. L., Sutton, M. C., & Eckhardt, A. G. (2014). Accuracy of self-reported college GPA: Gender-moderated differences by achievement level and academic self-efficacy. *Journal of College Student Development* 55(4), 385–390. Retrieved from <https://muse-jhu-edu.proxy-library.ashford.edu/article/548304>
- Costello, A. B., & Osborne, J. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment Research & Evaluation* 10(7), 1-9. Retrieved from <http://pareonline.net/getvn.asp?v=10&n=7>

- Chee, C. L., Shorty, G., & Robinson Kurpius, S. E. (2018). Academic stress of Native American undergraduates: The role of ethnic identity, cultural congruity, and self-beliefs. *Journal of Diversity in Higher Education*. <https://doi-org.proxy.library.ashford.edu/10.1037/dhe0000094>
- Cole, J. S., Sarraf, S.A., & Wang, X. (2015). *Does use of survey incentives degrade data quality?* Retrieved from http://nsse.indiana.edu/pdf/presentations/2015/AIR_Forum_2015_Cole_Sarraf_Wang_paper.pdf
- Creswell, J.W. (2013). *Qualitative inquiry & research design: Choosing among five approaches*. (3rd ed.). Thousand Oaks, CA: SAGE Publishing, Inc.
- Davis, L. J., & Offord, K. P. (1997). Logistic regression. *Journal of Personality Assessment*, 68(3), 497–507. [https://doi-org.proxy-library.ashford.edu/10.1207/s15327752jpa6803pass:\[\]3](https://doi-org.proxy-library.ashford.edu/10.1207/s15327752jpa6803pass:[]3)
- Desai, N., & Stefanek, G. (2017). *A literature review of the different approaches that have been implemented to increase retention in engineering programs across the United States*. Retrieved from <http://zone2.asee.org/sessions/program/3/117.pdf>
- Djulovic, A., & Li, D. (2013). Towards freshman retention prediction: A comparative study. *International Journal of Information and Education Technology*, 3(5), 494–500. Retrieved from <https://doi.org/10.7763/IJiet.2013.V3.324>
- Elliott, J. D., & Parks, R. (2018). Latino students and degree attainment. *College and University*, 93(1), 10–18. Retrieved from <https://search-proquest-com.proxy-library.ashford.edu/docview/2032394844?accountid=32521>

- Fawcett, J., & Garity, J. (2009). Chapter 9: Evaluation of research instruments and experimental conditions. In *Evaluating Research for Evidence-Based Nursing* (pp. 153–191). Philadelphia, PA: F.A. Davis Company/Publishers.
- Field, A. P. (2013). *Discovering statistics using IBM SPSS statistics : and sex and drugs and rock 'n' roll* (4th ed.). Los Angeles: Sage.
- Field, A. P. (2009). *Discovering statistics using IBM SPSS statistics*. (3rd ed.). Los Angeles: Sage.
- Fink, J. E., & Inkels, K. K. (2015). A history of learning communities within American higher education. *New Directions for Student Services*, 2015(149), 5–15.
<https://doi.org/10.1002/ss.20113>
- Florida Atlantic University. (2016). FAU CARES. Retrieved from
https://www.fau.edu/class/success/fau-cares/cares_tips.php
- Gašević, D., Zouaq, A., & Janzen, R. (2013). “Choose your classmates, your GPA is at stake!”: The association of cross-class social ties and academic performance. *American Behavioral Scientist*, 57(10), 1460–1479. doi:10.1177/0002764213479362. Retrieved from <http://journals.sagepub.com.proxy-library.ashford.edu/doi/pdf/10.1177/0002764213479362>
- Gentles, S. J., Charles, C., & Ploeg, J. (2015). Sampling in qualitative research: Insights from an overview of the methods literature. *The Qualitative Report*, 20(11), 1772–1789.
<https://doi.org/10.4135/9781412950589.n885>
- Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report*, 8(4), 597–607. <https://doi.org/10.3367/UFNr.0180.201012c.1305>

- Gonyea, R. M., Kish, K., Kuh, G. D., Muthiah, R., & Thomas, A. (2003). CSEQ: Norms for the fourth edition. *Bloomington, IN: Indiana University Center for Postsecondary Research and Planning*. Retrieved from <http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:CSEQ+Norms+for+the+Fourth+Edition#0>
- Gorsuch, R. L. (1997). Exploratory factor analysis : Its role in item analysis : Advances in statistical methods for personality assessment research. *Journal of Personality Assessment*, 68(3), 532-560. Retrieved from <http://search.ebscohost.com.proxy-library.ashford.edu/login.aspx?direct=true&db=edsfra&AN=edsfra.2674349&site=eds-live&scope=site>
- Grose-Fifer, J., Helmer, K. A., & Zottoli, T. M. (2013). Interdisciplinary connections and academic performance in psychology-English learning communities. *Teaching of Psychology*, 41(1), 57–62. <https://doi.org/10.1177/0098628313514179>
- Habley, W. R., Bloom, J. L., & Robbins, S. (2012). *Increasing persistence: Research-based strategies for college student success*. Retrieved from <https://ebookcentral-proquest-com.proxy-library.ashford.edu>
- Hae-Young, K. (2017). Statistical notes for clinical researchers: Chi-squared test and Fisher's exact test. *Restorative Dentistry & Endodontics*, 42(2), 152–155.
doi:10.5395/rde.2017.42.2.152
- Hagedorn, L. S. (2012). How to define retention: A new look at an old problem. In A. Seidman (Ed.), *College student retention: Formula for student success* (pp. 81–99). Lanham, MD: Rowman & Littlefield.

- Hill, W., & Woodward, L. S. (2013). Examining the impact learning communities have on college of education students on an urban campus. *Journal of College Student Development, 54*(6), 643–648. <https://doi.org/10.1353/csd.2013.0085>
- Hlinka, K. R. (2017). Tailoring retention theories to meet the needs of rural Appalachian community college students. *Community College Review, 45*(2), 144–164. Retrieved from <http://eds.a.ebscohost.com.proxy-library.ashford.edu/eds/pdfviewer/pdfviewer?vid=7&sid=17fcdc21-1380-4b40-bcc1-48bf6ccf57c7%40sessionmgr4006>
- Hole, G. (2012). *Research skills*. Retrieved from <http://users.sussex.ac.uk/~grahamh/RM1web/APA%20format%20for%20statistical%20notation%20and%20other%20things.pdf>
- Hollands, A. L. (2012). *Fostering hope and closing the academic gap: An examination of college retention for African-American and Latino students who participate in the louis stokes alliance minority participation program (learning community) while enrolled in a predominately white institution*. Retrieved from <http://cupdx.idm.oclc.org/login?url=https://search-proquest-com.cupdx.idm.oclc.org/docview/1651838257?accountid=10248>
- Hosmer, D. W., Lemeshow, S., & Sturdivant, R. X. (2013). *Applied logistic regression*. Retrieved from <https://ebookcentral.proquest.com>
- Huerta, J. C., & Bray, J. J. (2013). How do learning communities affect first-year Latino students? *Learning Communities Research and Practice, 1*(1), 1-18. Retrieved from <http://files.eric.ed.gov/fulltext/EJ1112864.pdf>
- Jessup-Anger, J. E. (2015). Theoretical foundations of learning communities. *New Directions for Student Services, 2015*(149), 17–27. doi:10.1002/ss.20114. Retrieved from

- <http://eds.a.ebscohost.com.proxy-library.ashford.edu/eds/pdfviewer/pdfviewer?vid=14&sid=27d306e9-8117-4500-8084-ac2633d82f43%40sessionmgr4008>
- Kalsbeek, D. H. (2013). Reframing retention strategy for institutional improvement. *New Directions for Higher Education*, (161), 5-14. Retrieved from <https://ebookcentral-proquest-com.proxy-library.ashford.edu>
- Kang, H. (2013). A Guide on the use of factor analysis in the assessment of construct validity. *Journal of Korean Academy of Nursing*, 43(5), 587–594. <https://doi-org.proxy-library.ashford.edu/10.4040/jkan.2013.43.5.587>
- Krier, T. J. (2014). *An exploratory study of teacher self-efficacy beliefs and professional learning community*. Retrieved from https://etd.ohiolink.edu/!etd.send_file?accession=osu1405684219&disposition=inline
- Krogstad, J. M. & Fry, R. (2014). *More Hispanics, Blacks enrolling in college, but lag in bachelor's degrees*. Retrieved from <http://www.pewresearch.org/fact-tank/2014/04/24/more-hispanics-blacks-enrolling-in-college-but-lag-in-bachelors-degrees/>
- Lehman, R. M., Conceição, S. C. O., & Conceio, S. C. O. (2013). *Motivating and retaining online students: Research-based strategies that work*. Retrieved from <https://ebookcentral-proquest-com.proxy-library.ashford.edu>
- Loes, C. N., An, B. P., Saichaie, K., & Pascarella, E. T. (2017). Does collaborative learning influence persistence to the second year of college? *Journal of Higher Education*, 88(1), 62–84. <https://doi.org/10.1080/00221546.2016.1243942>
- Lopez, C., & Jones, S. J. (2017). Examination of factors that predict academic adjustment and success of community college transfer students in STEM at 4-year institutions.

- Community College Journal of Research and Practice*, 41(3), 168–182.
<https://doi.org/10.1080/10668926.2016.1168328>
- Love, A. G. (2012). The growth and current state of learning communities in higher education. *New Directions for Teaching and Learning*, 2012(132), 5–18.
<https://doi.org/10.1002/tl.20032>
- Marrero, F. A., & Milacci, F. (2018). Voices from the academic trenches: Academic persistence among nontraditional undergraduate Hispanic students at Hispanic Serving Institutions. *Journal of Ethnographic & Qualitative Research*, 12(3), 219–232. Retrieved from <http://search.ebscohost.com.proxy-library.ashford.edu/login.aspx?direct=true&db=a9h&AN=129723074&site=eds-live&scope=site>
- Martin, W. E., & Bridgmon, K. D. (2012). *Quantitative and statistical research methods: From hypothesis to results*. Retrieved from <https://ebookcentral-proquest-com.proxy-library.ashford.edu>
- Matthews, R. S., Smith, B. L., & MacGregor, J. (2012). The evolution of learning communities: A retrospective. *New Directions for Teaching and Learning*, 2012(132), 99–111.
 Retrieved from <http://onlinelibrary.wiley.com.cupdx.idm.oclc.org/doi/10.1002/tl.20039/epdf>
- Mcclain, K. S., & Perry, A. (2017). Where did they go: Retention rates for students of color at predominantly white institutions. *College Student Affairs Leadership*, 4(1), 2332-4430.
 Retrieved from <http://scholarworks.gvsu.edu/csal%0Ahttp://scholarworks.gvsu.edu/csal>
- McDonald, J.H. (2014). *Handbook of biological statistics*. (3rd ed.). Retrieved from <http://www.biostathandbook.com/fishers.html>

- McHugh, M. L. (2013). The Chi-square test of independence. *Biochemia Medica*, 23(2), 143–149. Retrieved from <https://doi-org.proxy-library.ashford.edu/10.11613/BM.2013.018>
- Millea, M., Wills, R., Elder, A., & Molina, D., (2018). What matters in college student success? Determinants of college retention and graduation rates. *Education*, 138(4), 309–322. Retrieved from <http://eds.a.ebscohost.com.proxy-library.ashford.edu/eds/pdfviewer/pdfviewer?vid=2&sid=8f2c1941-02be-4007-8052-a8c7dfd4734f%40sessionmgr4008>
- Minitab Inc. (2017). *Basics of stepwise regression*. Retrieved from <https://support.minitab.com/en-us/minitab-express/1/help-and-how-to/modeling-statistics/regression/supporting-topics/regression-models/basics-of-stepwise-regression/>
- Minitab. (2019a). *Basics of stepwise regression*. Retrieved from <https://support.minitab.com/en-us/minitab/18/help-and-how-to/modeling-statistics/regression/supporting-topics/basics/basics-of-stepwise-regression/>
- Minitab. (2019b). *Model summary statistics for simple binary logistic regression*. Retrieved from <https://support.minitab.com/en-us/minitab-express/1/help-and-how-to/modeling-statistics/regression/how-to/simple-binary-logistic-regression/interpret-the-results/all-statistics-and-graphs/model-summary-statistics/>
- Minitab. (2019c). *Odds Ratios for fit binary logistic model*. Retrieved from <https://support.minitab.com/en-us/minitab/18/help-and-how-to/modeling-statistics/regression/how-to/fit-binary-logistic-model/interpret-the-results/all-statistics-and-graphs/odds-ratios/>
- Minitab. (2019d). *Regression equation for simple binary logistic regression*. Retrieved from <https://support.minitab.com/en-us/minitab/18/help-and-how-to/modeling->

statistics/regression/how-to/fit-binary-logistic-model/interpret-the-results/all-statistics-and-graphs/odds-ratios/

Minitab. (2019e). *Goodness-of-fit tests for simple binary logistic regression*. Retrieved from <https://support.minitab.com/en-us/minitab-express/1/help-and-how-to/modeling-statistics/regression/how-to/simple-binary-logistic-regression/interpret-the-results/all-statistics-and-graphs/goodness-of-fit-tests/>

Morrison, L., & Silverman, L. (2012). Retention theories, models, and concepts. In A. Seidman (Ed.), *College student retention: Formula for student success* (pp. 61–80). Lanham, MD: Rowman & Littlefield.

Motl, T. C., Multon, K. D., & Zhao, F. (2018). Persistence at a tribal university: Factors associated with second year enrollment. *Journal of Diversity in Higher Education*, 11(1), 51–66. <https://doi.org/10.1037/dhe0000034>. Retrieved from <http://eds.b.ebscohost.com.proxy-library.ashford.edu/eds/pdfviewer/pdfviewer?vid=3&sid=3b3c051b-656a-4a94-9fdf-dd5a0ad7ce86%40sessionmgr120>

Nadasen, D., & List, A. (2016). Using community college prior academic performance to predict re-enrollment at a 4-year online university. *Online Learning*, 20(2), 120–133. Retrieved from <http://cupdx.idm.oclc.org/login?url=http://search.proquest.com.cupdx.idm.oclc.org/docview/1826544147?accountid=10248>

NCES. (2015). *Digest for education statistics*. Retrieved from https://nces.ed.gov/programs/digest/d15/tables/dt15_326.10.asp#

National Center for Education Statistics. (1997). *Protecting the privacy of student educational records*. Retrieved from <https://nces.ed.gov/pubs97/web/97859.asp>

- National Center for Education Statistics. (2016). *Digest of education statistics, 2015*. Retrieved from <https://nces.ed.gov/fastfacts/display.asp?id=98>
- National Center for Education Statistics. (2018). *Undergraduate enrollment*. Retrieved from https://nces.ed.gov/programs/coe/indicator_cha.asp
- National Center for Education Statistics. (2018). *Undergraduate retention and graduation rates*. Retrieved from https://nces.ed.gov/programs/coe/indicator_ctr.asp
- National Center for Higher Education Management Systems. (2017). *Retention rates – First-time college freshmen returning their second year*. Retrieved from <http://www.higheredinfo.org/dbbrowser/index.php?submeasure=223&year=2010&level=nation&mode=data&state=0#/-1/>
- National Student Clearinghouse. (2017). *Persistence & retention – 2017*. Retrieved from <https://nscresearchcenter.org/snapshotreport28-first-year-persistence-and-retention/>
- NSEC Research Center (2018) *Persistence & retention- 2018*. Retrieved from <https://nscresearchcenter.org/snapshotreport33-first-year-persistence-and-retention/>
- Office of Evaluation and Assessment. (2017). *First year learning communities: Growth and trends in retention*. Retrieved from <https://ueeval.ucr.edu/First%20Year%20Learning%20Communities.pdf>
- Palmer, R. T., Wood, J. L., & Arroyo, A. (2015). Toward a model of retention and persistence for Black men at Historically Black Colleges and Universities (HBCUs). *Spectrum: A Journal on Black Men*, 4(1), 5–20. Retrieved from <https://muse-jhu-edu.proxy-library.ashford.edu/article/613201>

- Park, H. A. (2013). An introduction to logistic regression: From basic concepts to interpretation with particular attention to nursing domain. *Journal of Korean Academy of Nursing*, 43(2), 154–164. <https://doi.org/10.4040/jkan.2013.43.2.154>
- Parker-Young, S. C. (2017). *Relationships among student type, GPA, and retention within a proprietary career college*. Retrieved from ProQuest Dissertations & Theses Global: The Humanities and Social Sciences Collection. (10255933)
- Parmegiani, A. (2019). *Using ESL students' first language to promote college success: sneaking the mother tongue through the back door*. Routledge, NY: Taylor & Francis Group.
- Peña, M. I. (2017). *The role of community college first-year experience programs in promoting transfer among Latino male students*. Retrieved from <http://escholarship.org/uc/item/8pn1591k>
- Pfeffer-Lachs, C. (2013). *Assessing goal intent and achievement of university learning community students*. Available from ERIC. (1697492170; ED555118). Retrieved from <http://cupdx.idm.oclc.org/login?url=https://search-proquest-com.cupdx.idm.oclc.org/docview/1697492170?accountid=10248>
- Pike, G. R., Kuh, G. D., & McCormick, A. C. (2011). An investigation of the contingent relationships between learning community participation and student engagement. *Research in Higher Education*, 52(3), 300–322. <https://doi.org/10.1007/s11162-010-9192-1>
- Purdie, J. R., & Rosser, V. J. (2011). Examining the academic performance and retention of first-year students in living-learning communities and first-year experience courses. *College Student Affairs Journal*, 29(2), 95–112. Retrieved from <https://search-proquest-com.proxy-library.ashford.edu/docview/903807610?accountid=32521>

- Rietveld, T., & Hout, R. V. (1993). *Statistical techniques for the study of language and language behaviour*. Retrieved from <https://ebookcentral-proquest-com.proxy-library.ashford.edu>
- Rocconi, L. M. (2011). The impact of learning communities on first year students' growth and development in college. *Research in Higher Education*, 52(2), 178–193. Retrieved from <http://dx.doi.org.cupdx.idm.oclc.org/10.1007/s11162-010-9190-3>
- Rohr, S. L. (2012). How well does the SAT and GPA predict the retention of Science, technology, engineering, mathematics, and business students. *Journal of College Student Retention: Research, Theory & Practice*, 14(2), 195–208. Retrieved from <https://doi-org.cupdx.idm.oclc.org/10.2190/CS.14.2.C>
- SAGE Publications. (2018a). *Tutorial videos: Ch-05: t-Test* [Video file]. Retrieved from <https://study.sagepub.com/knappstats2e/student-resources/tutorial-videos>
- SAGE Publications. (2018b). *Tutorial videos: Ch-07: Paired t-Test* [Video file]. Retrieved from <https://study.sagepub.com/knappstats2e/student-resources/tutorial-videos>
- SAGE Publications. (2018c). *Tutorial videos: Ch-05: Mann-Whitney U-test* [Video file]. Retrieved from <https://study.sagepub.com/knappstats2e/student-resources/tutorial-videos>
- Sandoval-Lucero, E., Maes, J. B., & Chopra, R. V. (2011). Examining the retention of nontraditional Latino(a) students in a career-based learning community. *Journal of Hispanic Higher Education*, 10(4), 299–316. Retrieved from <https://doi.org/10.1177/1538192711414909>
- Seidman, A. (2012). Taking action: A retention formula and model for student success. In A. Seidman (Ed.), *College student retention: Formula for student success* (pp. 267–284). Lanham, MD: Rowman & Littlefield.

- Seidman, A. (2016). *Minority student retention: Resources for practitioners*, 29(3), 413–417.
Retrieved from <http://www.imsd.emory.edu/documents/documents-pdfs/minority-retention-seidman.pdf>
- Silver-Wolf, D. A. P., Perkins, J., Butler-Barnes, S. T., & Walker, T. A. (2017). Social belonging and college retention: results from a quasi-experimental pilot study. *Journal of College Student Development* 58(5), 777–782. Retrieved from <https://muse.jhu.edu/article/665683>
- Soria, K. M., & Stebleton, M. J. (2012). First-generation students' academic engagement and retention. *Teaching in Higher Education*, 17(6), 673-685.
doi:<http://dx.doi.org.cupdx.idm.oclc.org/10.1080/13562517.2012.666735>
- Sperry, R. A. (2015). Predicting first-year student success in learning communities: The power of pre-college variables. *Learning Communities Research and Practice*, 3(1), 1–22.
Retrieved from <http://washingtoncenter.evergreen.edu/lcrpjournal/vol3/iss1/2>
- Statistic Solutions. (2019). *Assumptions of logistic regression*. Retrieved from <https://www.statisticssolutions.com/assumptions-of-logistic-regression/>
- Swail, W. S. (2014). A different viewpoint on student retention. *Higher Learning Research Communications*, 4(3), 18–25. Retrieved from http://www.educationalpolicy.org/publications/pubpdf/140714_Journal_Article.pdf
- Teo, T. (2013). *Handbook of quantitative methods for educational research*. Boston, MA: Sense Publishers. Retrieved from <http://cupdx.idm.oclc.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=706855&site=ehost-live&scope=site>

- Teye, A., & Peaslee, L. (2015). Measuring educational outcomes for at-risk children and youth: issues with the validity of self-reported data. *Child & Youth Care Forum*, 44(6), 853–873. Retrieved from <https://doi-org.cupdx.idm.oclc.org/10.1007/s10566-015-9310-5>
- Thietart, R. (2001). *Doing management research: a comprehensive guide*. Retrieved from <https://ebookcentral-proquest-com.proxy-library.ashford.edu>
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research*, 45(1), 89–125. Retrieved from <http://www.jstor.org.cupdx.idm.oclc.org/stable/1170024>
- Tinto, V. (1997). Classrooms as communities. *The Journal of Higher Education*, 68(6), 599–623. Retrieved from <https://doi.org/10.1080/00221546.1997.11779003>
- Tinto, V. (2012a). *Completing college: Rethinking instructional action*. Chicago, IL: The University of Chicago Press.
- Tinto, V. (2012b). Moving from theory to action: A model of institutional action for student success. In A. Seidman (Ed.), *College student retention: Formula for student success* (pp. 251–266). Lanham, MD: Rowman & Littlefield.
- US Legal. (2016). Minority student [education] law and legal definition. Retrieved from <https://definitions.uslegal.com/m/minority-student-education/>
- Vakili, M. M. (2018). Assessment of construct validity questionnaires in psychological, educational and Health research: applications, methods, and interpretation of exploratory factor analysis. *Journal of Medical Education Development*, 11(30), 4-21. Retrieved from [1http://search.ebscohost.com.proxy-library.ashford.edu/login.aspx?direct=true&db=edsdoj&AN=edsdoj.74fe05b81d344f0b9db4b1ff1fa26391&site=eds-live&scope=site](http://search.ebscohost.com.proxy-library.ashford.edu/login.aspx?direct=true&db=edsdoj&AN=edsdoj.74fe05b81d344f0b9db4b1ff1fa26391&site=eds-live&scope=site)

- Voelkel, R. H., Jr., & Chrispeels, J. H. (2017). Understanding the link between professional learning communities and teacher collective efficacy. *School Effectiveness and School Improvement*, 28(4), 505-526.
doi:<http://dx.doi.org.cupdx.idm.oclc.org/10.1080/09243453.2017.1299015>
- Weiss, M. J., Mayer, A. K., Cullinan, D., Sommo, C., & Diamond, J. (2015). A random assignment evaluation of learning communities at Kingsborough Community College — seven years later. *Journal of Research on Educational Effectiveness*, 8(2), 189–217.
Retrieved from <https://doi.org/10.1080/19345747.2014.946634>
- Williams, W. (2018, May 6). How design can improve retention at Black colleges. *Chronicle of Higher Education*. Retrieved from <https://www.chronicle.com/>
- Yong, A. G., & Pearce, S. (2013). A beginner's guide to factor analysis: Focusing on exploratory factor analysis. *Tutorials in Quantitative Methods for Psychology*, 9(2), 79-94. Retrieved from <http://www.tqmp.org/RegularArticles/vol09-2/p079/p079.pdf>
- Zamani, E. M. (2000). Sources and information regarding effective retention strategies for Students of Color. *New Directions for Community Colleges*, 2000(112), 95–104.
Retrieved from <http://eds.a.ebscohost.com.proxy-library.ashford.edu/eds/pdfviewer/pdfviewer?vid=4&sid=a5d643b4-9d2d-410b-8791-8dcee82a7d98%40sessionmgr4010>

Appendix A: CARES (I) Survey

The Florida Atlantic University *College Assessment of Readiness for Entering Students-Intended (CARES I)* is given below that was utilized in this research.

Pretest Survey Questionnaire

Instructions: Please read each sentence carefully and select your response.

Five-Point Likert Scale: 5 = SA (Strongly Agree), 4 = A (Agree), 3 = N(Neutral), 2= D (Disagree), and 1 = SD (Strongly Disagree).

To feel as part of the college community I am apt to:

1. Get involved in student clubs or organizations includes (*academic, religious, cultural and interest-based organizations*). SA A N D SD
2. Attend campus programs and events (*Band bash, fashion shows, musical appearances, etc.*). SA A N D SD
3. Attend campus “Arts” programs (*Homecoming entertainment, homecoming parade, museums, Broadway, city excursions, etc.*). SA A N D SD
4. Attend the college athletic events. SA A N D SD
5. Participate in campus recreation activities (*sporting and leisure activities, intramurals on campus*). SA A N D SD
6. Form study groups. SA A N D SD
7. Attend on-campus workshops (*improving skills, leadership, Wilson Reading System Introductory Workshop, Resume Writing and Career Planning Workshops, learning new things, etc.*). SA A N D SD
8. Develop a mentoring relationship with a faculty or staff member. SA A N D SD
9. Develop a mentoring relationship with an upper-class student. SA A N D SD

10. Participate in a learning community. SA A N D SD
11. Get to know my classmates outside of class. SA A N D SD
12. Get to know people on campus socially (*in my class, in clubs I belong, visit Schoenfeld
Campus Center and the Commons, daily chapel services, etc.*). SA A N D SD
13. Find a job on campus. SA A N D SD
14. Volunteer in the community. SA A N D SD

Appendix B: CARES (A) Survey

The Florida Atlantic University *College Assessment of Readiness for Entering Students-Actual* (CARES- A) is given below that was utilized in this research.

Posttest Survey Questionnaire

Instructions: Please read each sentence carefully and select your response.

Five-Point Likert Scale: 5 = SA (Strongly Agree), 4 = A (Agree), 3 = N(Neutral), 2= D (Disagree), and 1 = SD (Strongly Disagree).

To feel as part of the college community I:

1. Got involved in student clubs or organizations includes (*academic, religious, cultural and interest-based organizations*). SA A N D SD
2. Attended campus programs and events (*Band bash, fashion shows, musical appearances, etc.*). SA A N D SD
3. Attended campus “Arts” programs (*Homecoming entertainment, homecoming parade, museums, Broadway, city excursions, etc.*). SA A N D SD
4. Attended the college athletic events. SA A N D SD
5. Participated in campus recreation activities (*sporting and leisure activities, intramurals on campus*). SA A N D SD
6. Formed study groups. SA A N D SD
7. Attended on-campus workshops (*improving skills, leadership, Wilson Reading System Introductory Workshop, Resume Writing and Career Planning Workshops, learning new things, etc.*). SA A N D SD
8. Developed a mentoring relationship with a faculty or staff member. SA A N D SD
9. Developed a mentoring relationship with an upper-class student. SA A N D SD

10. Participated in a learning community. SA A N D SD
11. Got to know my classmates outside of class. SA A N D SD
12. Got to know people on campus socially (*in my class, in clubs I belong, visit Schoenfeld
Campus Center and the Commons, daily chapel services, etc.*). SA A N D SD
13. Found a job on campus. SA A N D SD
14. Volunteered in the community. SA A N D SD

Appendix C: Demographic Survey

Instructions: Please read each sentence carefully and give your response.

Demographic Data

1. Freshman Name Code: “Student will code real name using “B-2017-Fall-mother’s first name-pet’s name-favorite color”. For example: B-2017-Jane-Rover-Blue. _____
2. Gender: ☐ Male ☐ Female
3. Age: _____
4. Ethnicity:
 - ☐ African American or Black
 - ☐ Asian
 - ☐ American Indian or Alaska Native
 - ☐ Caucasian
 - ☐ Hispanic or Latino
 - ☐ Native Hawaiian or Other Pacific Islander
 - ☐ West Indian
5. High School GPA : _____
6. In a Learning Community: ☐ Yes ☐ No
7. GPA after First Semester of College: _____
8. Re-Enrolled in Second Semester: ☐ Yes ☐ No

Appendix D: Letter to Volunteers

Cover Letter to Volunteers for Qualtrics Survey

Thank you so much for agreeing to participate in this research. Your input is important and will help to determine how social integration affects re-enrollment of college freshmen in learning communities.

Research Study Title: Learning Communities and College Student Retention

Principal Investigator: Christopher Phekni

Research Institution: Concordia University Portland

Faculty Advisor: Dr. Floralba Marrero

Purpose:

The purpose of this survey is to determine whether social integration in learning communities (LCs) is associated with the retention of college freshmen students. We expect approximately 150 volunteers.

Criteria for Participation

We need approximately 150 volunteers that meet the following criteria:

1. Must be a college freshman student
2. Must be a minority student
3. Must be participating in a Learning Community
4. Must be 18 years or older

The Learning Community could be either:

- a First Year Seminar course,
- or cohorts in large courses or Freshmen Interest Groups
- or take an Orientation Course
- or take one or two Courses together with other freshmen
- or live in the Residence Hall

Procedures:

This survey should not take more than 20 minutes of your time. Be assured that all of your responses will be kept in the strictest confidentiality. I am asking you to complete one survey that has three sections; Part 1 collects demographic data of your gender, ethnicity, age, high school GPA, and end of first semester GPA as well as re-enrollment status for the next semester. Part 2 captures information about your expectations prior to participating in a learning community. Part 3 collects information on your actual experiences in the learning community. Your efforts to return the survey will be most appreciated.

Risks:

There are no risks to participating in this study other than providing your information. However, we will protect your information. Any personal information you provide will be coded so it cannot be linked to you. Any name or identifying information you give will be kept securely via electronic encryption or locked inside my private computer. When we or any of our investigators look at the data, none of the data will have your name or identifying information. We will only use a secret code to analyze the data. We will not identify you in any publication or report. Your information will be kept private at all times and then all study documents will be destroyed 3 years after we conclude this study.

Benefits:

Although there are no direct benefits to you, this study may increase the understanding of how

social integration affects re-enrollment of college freshmen in learning communities and this could inform faculty and administration on how to better serve this population of students.

Confidentiality:

This information will not be distributed to any other agency and will be kept private and confidential.

Right to Withdraw:

Your participation is greatly appreciated, but we acknowledge that the questions we are asking are personal in nature. You are free at any point to choose not to engage with or stop the study. You may skip any questions you do not wish to answer. This study has no penalty for not participating.

Contact Information:

You will receive a copy of this consent form. If you have questions you can talk to or write the principal investigator, Christopher Phekni at email. cphekni@mail2.cu-portland.edu. If you want to talk with a participant advocate other than the investigator, you can write or call the director of our institutional review board, Dr. OraLee Branch (email obranh@cu-portland.edu or call 503-493-6390).

Your Statement of Consent:

I have read the above information and I volunteer my consent for this study.

Investigator: Christopher Phekni; email: cphekni@mail2.cu-portland.edu

c/o: Professor Dr. Floralba Marrero;

Concordia University – Portland

2811 NE Holman Street, Portland, Oregon 97221

Check click this link to complete the survey. Clicking this link means you give the researcher consent to use your survey data.

Click here: [Take the Survey](#)

Appendix E: Statement of Original Work

The Concordia University Doctorate of Education Program is a collaborative community of scholar-practitioners, who seek to transform society by pursuing ethically-informed, rigorously- researched, inquiry-based projects that benefit professional, institutional, and local educational contexts. Each member of the community affirms throughout their program of study, adherence to the principles and standards outlined in the Concordia University Academic Integrity Policy. This policy states the following:

Statement of academic integrity.

As a member of the Concordia University community, I will neither engage in fraudulent or unauthorized behaviors in the presentation and completion of my work, nor will I provide unauthorized assistance to others.

Explanations

What does “fraudulent” mean?

“Fraudulent” work is any material submitted for evaluation that is falsely or improperly presented as one’s own. This includes, but is not limited to texts, graphics and other multi-media files appropriated from any source, including another individual, that are intentionally presented as all or part of a candidate’s final work without full and complete documentation.

What is “unauthorized” assistance?

“Unauthorized assistance” refers to any support candidates solicit in the completion of their work, that has not been either explicitly specified as appropriate by the instructor, or any assistance that is understood in the class context as inappropriate. This can include, but is not limited to:

- Use of unauthorized notes or another’s work during an online test
- Use of unauthorized notes or personal assistance in an online exam setting
- Inappropriate collaboration in preparation and/or completion of a project
- Unauthorized solicitation of professional resources for the completion of the work.

I attest that:

1. I have read, understood, and complied with all aspects of the Concordia University- Portland Academic Integrity Policy during the development and writing of this dissertation.
2. Where information and/or materials from outside sources has been used in the production of this dissertation, all information and/or materials from outside sources has been properly referenced and all permissions required for use of the information and/or materials have been obtained, in accordance with research standards outlined in the *Publication Manual of The American Psychological Association*

Christopher A. Phekni

Digital Signature

Christopher Anthony Phekni

Name (Typed)

1/26/2019

Date

Appendix F: Factor Loading Analysis

Factor Loading Analysis

Factor Analysis is a multivariate statistical technique that reduces variables and establishes fundamental scopes between variables being measured and their constructs as well as to give construct validity evidence. The steps in factor analysis involves selecting and measuring a set of variables, then extract the factors meaning to perform a factor analysis. Next, the number of factors is determined, followed by the factors being rotated and finally the results are interpreted. According to Minitab Inc. (2017), factor loadings specify the extent of which a factor clarifies a variable as well as the loadings ranged from -1 to 1.

Chetty and Datt (2015) explained that factor analysis clumped variable with similar features together to generate a reduced amount of factors from several variables for further examination. In my research study, I investigated whether there was a relationship in the expected social integration and reported social integration for minority freshman participating in a learning community. There were several variables or questions identified on the CARES-I and CARES-A survey questionnaires that were utilized as the pretest and posttest. The survey questionnaires are given in Appendices A and B.

There were 14 questions on the pretest survey questionnaire and 14 questions on the posttests survey questionnaire with a Likert-type responses on a scale of 1 to 5 where 1 represent strongly disagree and 5 represented strongly agree. The responses from the CARES-I and CARES-A survey questions from the freshmen students in learning community were imported to the IBM Statistical Package for the Social Science (SPSS) version 25 (2017)

software, where a factor loading analysis was conducted. The output results of the analysis are given below and were interpreted.

Descriptive Statistics

The initial outputs are the descriptive statistics given in Table 12 and Table 13 respectively for all the variables under examination in the CARES-A and CARES-I survey questionnaires. The mean value, standard deviation and number of participants (N) are shown in the tables. It is seen that variable (pretest question 10) had the highest means of 4.46 in Table 12 for the CARES-I questions. A look at the means in Table 12 could conclude that pretest question 10 which was participation in a learning community was the most vital variable that caused college freshmen to feel socially integrated in the college (Chetty & Datt, 2015).

Table 12

Descriptive Statistics for the Pretest Questions on the CARES-I Survey Questionnaire

	Mean	Std. Deviation	Analysis N
Pretest Question 1	3.76	1.07	140
Pretest Question 2	3.76	0.90	140
Pretest Question 3	3.54	0.96	140
Pretest Question 4	3.75	0.91	140
Pretest Question 5	3.89	0.92	140
Pretest Question 6	4.01	0.79	140
Pretest Question 7	4.09	1.00	140
Pretest Question 8	3.89	0.79	140
Pretest Question 9	3.81	0.87	140
Pretest Question 10	4.46	0.74	140
Pretest Question 11	3.91	0.73	140
Pretest Question 12	4.09	0.87	140
Pretest Question 13	3.45	1.01	140
Pretest Question 14	3.57	1.08	140

Table 13 below showed the output result of the descriptive statistics for the posttest questions on the CARES-A survey questionnaire with the utilization of the IBM Statistical

Package for the Social Science (SPSS) version 25 (2017) software. Similarly, the mean value, standard deviation and number of participants (N) are shown in the Table 13 below. Similarly, the posttest question number 10 also had the highest mean of 4.63 in Table 13 for the CARES-A survey questions. According to Chetty and Datt (2015) the test question 10 which was partaking in a learning community was the most vital variable that shaped college freshmen to feel socially integrated in the college (Chetty & Datt, 2015).

Table 13

Descriptive Statistics for the Posttest Questions on the CARES-A Survey Questionnaire

	Mean	Std. Deviation	Analysis N
Posttest Question 1	4.33	0.81	140
Posttest Question 2	4.20	0.74	140
Posttest Question3	4.10	0.86	140
Posttest Question 4	4.09	0.86	140
Posttest Question 5	4.20	0.92	140
Posttest Question 6	4.28	0.86	140
Posttest Question 7	4.43	0.98	140
Posttest Question 8	4.21	0.86	140
Posttest Question 9	4.05	1.08	140
Posttest Question 10	4.63	0.72	140
Posttest Question 11	4.32	0.71	140
Posttest Question 12	4.41	0.81	140
Posttest Question 13	3.46	0.96	140
Posttest Question 14	3.59	1.11	140

Correlation Matrix

If many variables were to be measured, then the correlation between each pair of variables (or questions) could be organized in an R-matrix which was a correlation matrix table of the correlation coefficients between the variables. The diagonal elements in the correlation

matrix table were given as ones since each variable correlated flawlessly with itself (Field, 2009).

The off diagonal elements are the correlation coefficients between pairs of variables, or questions. The existence of clusters of large correlation coefficients between subsets of variables suggests that those variables could be measuring aspects of the same underlying dimension. These underlying dimensions are known as factors (or *latent variables*). By reducing a data set from a group of interrelated variables to a smaller set of factors, factor analysis achieves parsimony by explaining the maximum amount of common variance in a correlation matrix using the smallest number of explanatory constructs. (Field, 2009, p. 629)

The correlation matrix was the next output shown in Table 14 and Table 15 from the analysis of the pretest and posttest questions respectively. The correlation coefficient for each pair of variables appeared at the juncture of the row of one variable and the column of the other variable. It showed that every variable correlated flawlessly with itself. The Table 14 showed all the correlation coefficients had positive values which indicated that when one variable increased, there would be a corresponding increase in the other variable.

The purpose of factor analysis was to decrease the R-matrix down to its fundamental magnitudes by examining which variables seem to bunch together in a way which is meaningful. This data decreasing was attained by scrutinizing for variables that correlated tremendously with a collection of other variables, “but do not correlate with variables outside of that group” (Field, 2009, p. 629). Similarly, in Table 15 all the correlation coefficients had positive values which indicated that when one variable increased, there will be a corresponding increase in the other variable (Field, 2009).

Table 14

Correlation Matrix^a for the Pretest Questions on the CARES-I Survey Questionnaire

		Pre1	Pre2	Pre3	Pre4	Pre5	Pre6	Pre7	Pre8	Pre9	Pre10	Pre11	Pre12	Pre13	Pre14
Correlation	Pre1	1.00	0.67	0.52	0.58	0.49	0.53	0.34	0.31	0.30	0.29	0.38	0.32	0.26	0.32
	Pre2	0.67	1.00	0.59	0.53	0.50	0.44	0.37	0.39	0.30	0.34	0.34	0.28	0.16	0.29
	Pre3	0.52	0.59	1.00	0.67	0.52	0.52	0.45	0.35	0.36	0.38	0.38	0.42	0.36	0.39
	Pre4	0.58	0.53	0.67	1.00	0.74	0.48	0.52	0.35	0.28	0.45	0.36	0.58	0.40	0.33
	Pre5	0.49	0.50	0.52	0.74	1.00	0.55	0.50	0.42	0.24	0.53	0.29	0.45	0.36	0.40
	Pre6	0.53	0.44	0.52	0.48	0.55	1.00	0.54	0.50	0.46	0.47	0.31	0.34	0.38	0.39
	Pre7	0.34	0.37	0.45	0.52	0.50	0.54	1.00	0.51	0.51	0.53	0.20	0.44	0.35	0.46
	Pre8	0.31	0.39	0.35	0.35	0.42	0.50	0.51	1.00	0.70	0.45	0.35	0.20	0.28	0.40
	Pre9	0.30	0.30	0.36	0.28	0.24	0.46	0.51	0.70	1.00	0.44	0.30	0.19	0.35	0.39
	Pre10	0.29	0.34	0.38	0.45	0.53	0.47	0.53	0.45	0.44	1.00	0.25	0.52	0.32	0.34
	Pre11	0.38	0.34	0.38	0.36	0.29	0.31	0.20	0.35	0.30	0.25	1.00	0.45	0.16	0.12
	Pre12	0.32	0.28	0.42	0.58	0.45	0.34	0.44	0.20	0.19	0.52	0.45	1.00	0.38	0.34
	Pre13	0.26	0.16	0.36	0.40	0.36	0.38	0.35	0.28	0.35	0.32	0.16	0.38	1.00	0.65
	Pre14	0.32	0.29	0.39	0.33	0.40	0.39	0.46	0.40	0.39	0.34	0.12	0.34	0.65	1.00
Sig. (1-tailed)	Pre1		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Pre2	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00
	Pre3	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Pre4	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Pre5	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Pre6	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Pre7	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.01	0.00	0.00	0.00
	Pre8	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.01	0.00	0.00
	Pre9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.00
	Pre10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	Pre11	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00		0.00	0.03	0.08

Table 14 Continued

Correlation Matrix^a for the Pretest Questions on the CARES-I Survey Questionnaire

		Pre1	Pre2	Pre3	Pre4	Pre5	Pre6	Pre7	Pre8	Pre9	Pre10	Pre11	Pre12	Pre13	Pre14
Sig. (1-tailed)	Pre12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00		0.00	0.00
	Pre13	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00		0.00
	Pre14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	
Note. a. Determinant = .000															

Table 15

Correlation Matrix^a for the Posttest Questions on the CARES-A Survey Questionnaire

		Post1	Post2	Post3	Post4	Post5	Post6	Post7	Post8	Post9	Post10	Post11	Post12	Post13	Post14
Correlation	Post1	1.00	0.68	0.56	0.46	0.47	0.51	0.40	0.31	0.31	0.43	0.29	0.51	0.31	0.40
	Post2	0.68	1.00	0.51	0.57	0.56	0.46	0.34	0.41	0.35	0.45	0.34	0.50	0.22	0.32
	Post3	0.56	0.51	1.00	0.66	0.53	0.51	0.43	0.43	0.35	0.47	0.38	0.54	0.40	0.38
	Post4	0.46	0.57	0.66	1.00	0.67	0.41	0.37	0.35	0.21	0.35	0.38	0.51	0.49	0.45
	Post5	0.47	0.56	0.53	0.67	1.00	0.39	0.30	0.28	0.36	0.34	0.32	0.46	0.35	0.37
	Post6	0.51	0.46	0.51	0.41	0.39	1.00	0.57	0.60	0.54	0.53	0.36	0.47	0.42	0.37
	Post7	0.40	0.34	0.43	0.37	0.30	0.57	1.00	0.50	0.48	0.58	0.27	0.50	0.37	0.41
	Post8	0.31	0.41	0.43	0.35	0.28	0.60	0.50	1.00	0.68	0.51	0.48	0.49	0.30	0.24
	Post9	0.31	0.35	0.35	0.21	0.36	0.54	0.48	0.68	1.00	0.49	0.36	0.34	0.29	0.25
	Post10	0.43	0.45	0.47	0.35	0.34	0.53	0.58	0.51	0.49	1.00	0.33	0.57	0.27	0.18
	Post11	0.29	0.34	0.38	0.38	0.32	0.36	0.27	0.48	0.36	0.33	1.00	0.51	0.12	0.12
	Post12	0.51	0.50	0.54	0.51	0.46	0.47	0.50	0.49	0.34	0.57	0.51	1.00	0.34	0.36
	Post13	0.31	0.22	0.40	0.49	0.35	0.42	0.37	0.30	0.29	0.27	0.12	0.34	1.00	0.60
	Post14	0.40	0.32	0.38	0.45	0.37	0.37	0.41	0.24	0.25	0.18	0.12	0.36	0.60	1.00

Table 15 Continued

Correlation Matrix^a for the Posttest Questions on the CARES-A Survey Questionnaire

		Post1	Post2	Post3	Post4	Post5	Post6	Post7	Post8	Post9	Post10	Post11	Post12	Post13	Post14
Sig. (1-tailed)	Post1		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Post2	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
	Post3	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Post4	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Post5	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Post6	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Post7	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Post8	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00
	Post9	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
	Post10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.02
	Post11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.08	0.08
	Post12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
	Post13	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00		0.00
	Post14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.08	0.00	0.00	

Note. a. Determinant = .000

Table 16 showed two tests that specify the suitability of the data for the detection of structure. In other words, these tests were vital to accept the sampling adequacy of the data. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) gave the proportion of variance in the variables that could be caused by the underlying factors.

The KMO can be calculated for individual and multiple variables and represents the ratio of the squared correlation between variables to the squared partial correlation between variables. The KMO statistic varies between 0 and 1. A value of 0 indicates that the sum of partial correlations is large relative to the sum of correlations, indicating diffusion in the pattern of correlations (hence, factor analysis is likely to be inappropriate). A value close to 1 indicates that patterns of correlations are relatively compact and so factor analysis should yield distinct and reliable factors. Kaiser (1974) recommends accepting values greater than 0.5 as barely acceptable (values below this should lead you to either collect more data or rethink which variables to include). Furthermore, values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great and values above 0.9 are superb (Hutcheson & Sofroniou, 1999). (Field, 2009, p. 647)

In other words, when the value was high meaning it was near the value of 1 indicating that a factor analysis could be beneficial with the data. When the value was less than 0.5, then results of the factor analysis probably would not very useful. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy for the pretest questions on the CARES-I Survey Questionnaire was 0.841 as shown in Table 16, meaning that the factor analysis should be useful as analysis should give distinct and reliable factors (Field, 2009). If KMO was greater than 0.5, the sample was

acceptable. Here, the $KMO = 0.841$ which showed that the sample was adequate to proceed with the Factor Analysis of the data.

In addition, the Bartlett's test indicated the strength of the relationship between variables. The Bartlett's test of sphericity would test the hypothesis that the correlation matrix was an identity matrix, which would specify that the variables were not related and consequently be inappropriate for structure detection. But, small p - values less than 0.05 of the significance level would show that a factor analysis was valuable with the data. In Table 16 the Bartlett's test of sphericity showed a significance level or a p - value of 0.00 is less than a 95% level of significance or alpha of 0.05 (p - value of $.000 < 0.05$), therefore the Factor Analysis was valid and the correlation matrix was not an identity matrix (Field, 2009).

Table 16

KMO and Bartlett's Test for the Pretest Questions on the CARES-I Survey Questionnaire

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity		
	Approx. Chi-Square	df	Sig.
0.841	1025.61	91	0.00

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy for the posttest questions on the CARES-A Survey Questionnaire was 0.869 as shown in the Table 17 below, meaning that the factor analysis could be useful. Similarly, the Bartlett's test of sphericity result showed a p - value of 0.00 which was less than the p - values of 0.05, meaning a factor analysis could be valuable with the data (Field, 2009).

Table 17

KMO and Bartlett's Test for the Posttest Questions on the CARES-A Survey Questionnaire

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity		
	Approx. Chi-Square	df	Sig.
0.87	1023.01	91	0.00

A measure of the inclusive quality of a “factor solution is the individual communality value for each of the observed variables” and “communalities can be interpreted as the proportion of variation in the observed variables that is accounted for by the set of factors” (Teo, 2013, p. 173). The next output item from the utilization of the IBM Statistical Package for the Social Science (SPSS) version 25 (2017) software was the communalities which showed how many of the variance in the variables has been taken into consideration by the extracted factors. Only the variables that were greater than 0.5 would be considered for any further analysis. The Table 18 below showed the communalities for the pretest questions on the CARES-I survey questionnaire. For example, the pretest question 1 had 64% variance which was accounted for in the analysis.

Table 18

Communalities for the Pretest Questions on the CARES-I Survey Questionnaire

	Initial	Extraction
Pretest Question 1	1.00	0.64
Pretest Question 2	1.00	0.67
Pretest Question 3	1.00	0.62
Pretest Question 4	1.00	0.77
Pretest Question 5	1.00	0.64
Pretest Question 6	1.00	0.57
Pretest Question 7	1.00	0.59
Pretest Question 8	1.00	0.80
Pretest Question 9	1.00	0.80
Pretest Question 10	1.00	0.48
Pretest Question 11	1.00	0.39
Pretest Question 12	1.00	0.59
Pretest Question 13	1.00	0.70
Pretest Question 14	1.00	0.66
Extraction Method: Principal Component Analysis.		

The Table 19 below showed the communalities for the Posttest questions on the CARES-I survey questionnaire. All the extracted variables had values greater than 0.00, for example,

the posttest question 1 has 58.5% variance which was accounted for in the analysis. “One of the earliest approaches for determining the likely number of factors was described by Guttman (1954) and is commonly referred to as the eigenvalue greater than 1 rule” (Teo, 2013, p. 174). This rule was fairly modest to use in that a factor was considered to be vital, or good to retain if the eigenvalue related with it was larger than 1. “It is one of the default methods used by many software programs for identifying the number of factors” (Teo, 2013, p. 174). The Table 20 below showed the Total Variance Explained with the use of principal components to extract factors where the variance is equal to the eigenvalue.

Table 19

Communalities for the Posttest Questions on the CARES-A Survey Questionnaire

	Initial	Extraction
Posttest Question 1	1.00	0.59
Posttest Question 2	1.00	0.68
Posttest Question3	1.00	0.64
Posttest Question 4	1.00	0.74
Posttest Question 5	1.00	0.63
Posttest Question 6	1.00	0.65
Posttest Question 7	1.00	0.62
Posttest Question 8	1.00	0.73
Posttest Question 9	1.00	0.66
Posttest Question 10	1.00	0.60
Posttest Question 11	1.00	0.51
Posttest Question 12	1.00	0.59
Posttest Question 13	1.00	0.75
Posttest Question 14	1.00	0.74

Extraction Method: Principal Component Analysis.

Utilizing the Kaiser criterion, explained that only the factors with eigenvalues that were greater than 1 should be used in the factor analysis (Minitab, 2017-b). In Table 20 below, there were three factors greater than 1. The Table 20 had three sub-sections which were the Initial Eigenvalues, Extraction Sums of Squared Loadings and the Rotation Sums of Squared Loadings. However, the only section for consideration was Extracted Sums of Squared Loadings. It was

shown that the first factor accounted for 45.192% of the variance, the second factor accounted for 10.180% and the third 8.344%. All the other factors were not significant. “The number of positive eigenvalues determines how many factors or dimensions are required for a factor solution without any loss of information” (Rietveld, Toni, & Roeland van Hout, 1993, p. 243).

Table 20

Total Variance Explained for the Pretest Questions on the CARES-I Survey Questionnaire

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.33	45.19	45.19	6.33	45.19	45.19	3.74	26.69	26.69
2	1.43	10.18	55.37	1.43	10.18	55.37	2.77	19.75	46.44
3	1.17	8.34	63.72	1.17	8.34	63.72	2.42	17.27	63.72
4	0.96	6.89	70.60						
5	0.85	6.08	76.68						
6	0.52	3.71	80.39						
7	0.51	3.63	84.01						
8	0.49	3.52	87.54						
9	0.44	3.15	90.68						
10	0.39	2.80	93.48						
11	0.28	2.01	95.49						
12	0.27	1.95	97.44						
13	0.21	1.52	98.96						
14	0.15	1.04	100.00						

Note. Extraction Method: Principal Component Analysis.

Table 21

Total Variance Explained for the Posttest Questions on the CARES-A Survey Questionnaire

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.47	46.24	46.24	6.47	46.24	46.24	3.71	26.46	26.46
2	1.48	10.56	56.80	1.48	10.56	56.80	3.48	24.82	51.28
3	1.19	8.48	65.28	1.19	8.48	65.28	1.96	14.00	65.28
4	0.82	5.89	71.17						
5	0.71	5.05	76.21						

Table 21 Continued

Total Variance Explained for the Posttest Questions on the CARES-A Survey Questionnaire

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
6	0.60	4.28	80.50
7	0.50	3.59	84.08
8	0.44	3.15	87.23
9	0.40	2.83	90.06
10	0.39	2.75	92.81
11	0.33	2.39	95.20
12	0.29	2.08	97.27
13	0.21	1.49	98.76
14	0.17	1.24	100.00

Note. Extraction Method: Principal Component Analysis.

Likewise, the Table 21 for the Total Variance Explained for the posttest questions on the CARES-A Survey Questionnaire is shown below where the first factor accounted for 46.236% of the variance, the second factor accounted for 10.564% and the third 8.478%. All the other factors were not significant. The Scree plot was an alternative approach for finding the amount of factors based on the eigenvalues (Teo, 2013). “Scree is rubble at the base of a cliff, giving this plot its name. It was introduced by Cattell (1966), and plots the eigenvalues on the Y axis, with the factors on the X axis” (Teo, 2013, p. 174).

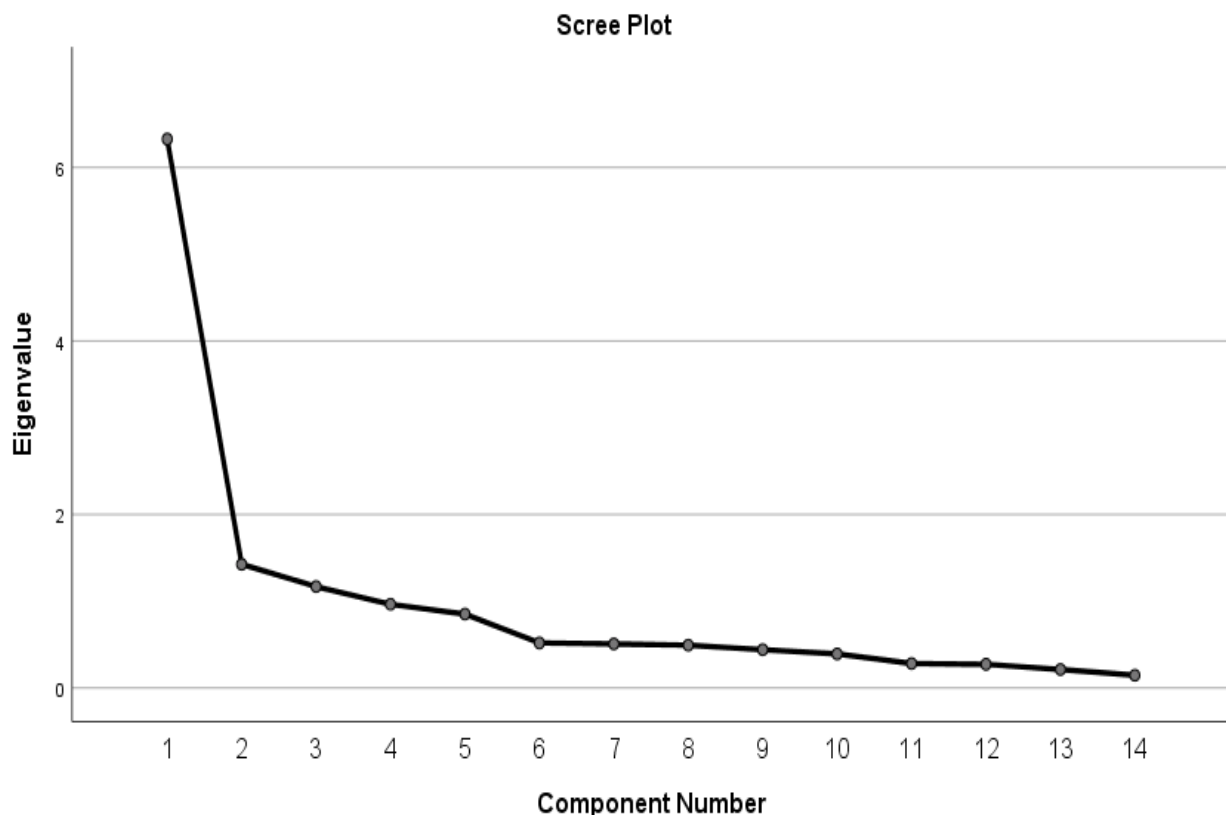


Figure 4. Scree plot for the pretest questions on the CARES-I survey questionnaire

The scree test encompasses the examination of the graph of the eigenvalues and to look for “the natural bend or break point in the data where the curve flattens out” and the “number of datapoints above the “break” is usually the number of factors to retain” (Costello & Osborne,

2005, p. 3). The Figure 4 showed the Scree Plot for the pretest questions on the CARES-I Survey Questionnaire. The scree plot arranged the eigenvalues from highest to lowest. The perfect pattern should be a steep curve, then a bend, and followed by a straight line. The components to be utilized were located in the steep curve before the first point that started the line trend (Minitab 2014-b). The graph was valuable for showing the amount factors to retain. It was shown that the curve started to flatten between factors 3 and 4. Therefore, 3 factors have an eigenvalue of less than 1 that could be retained.

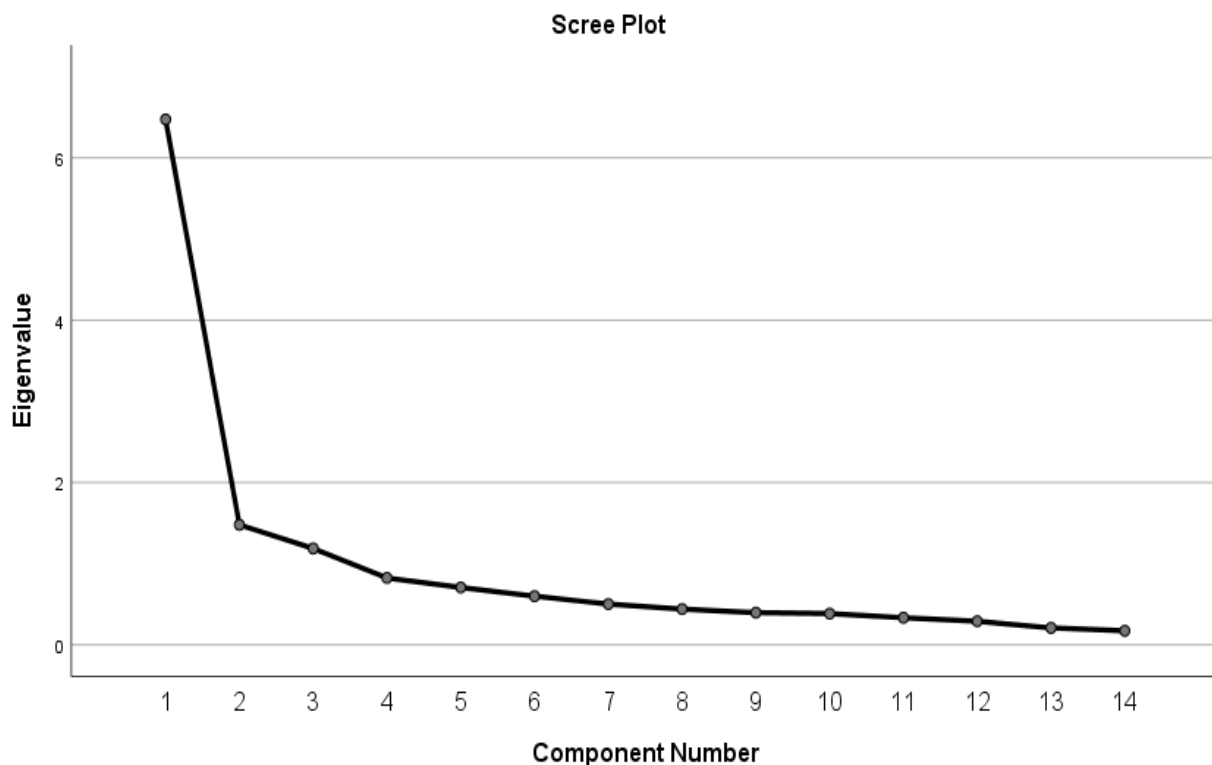


Figure 5. Scree plot for the posttest questions on the CARES-A survey questionnaire

The Figure 5 below showed the Scree Plot for the posttest questions on the CARES-A Survey Questionnaire. Similarly, it was shown that the curve started to flatten between factors 3 and 4. Therefore, 3 factors had an eigenvalue of less than 1 that could be retained. The Component Matrix results for the pretest questions on the CARES-I survey questionnaire is given in the Table 22 with the extracted values for 14 variables placed under 3 variables.

Table 22

Component Matrix^a for the Pretest Questions on the CARES-I Survey Questionnaire

	Component		
	1	2	3
Pretest Question 4	0.79		
Pretest Question 5	0.76		
Pretest Question 3	0.75		
Pretest Question 6	0.74		
Pretest Question 7	0.72		
Pretest Question 1	0.68		
Pretest Question 10	0.67		
Pretest Question 2	0.67		
Pretest Question 8	0.66		
Pretest Question 12	0.63		
Pretest Question 14	0.61		
Pretest Question 9	0.61		
Pretest Question 13	0.56		
Pretest Question 11	0.50		

Note. Extraction Method: Principal Component Analysis.

a. 3 components extracted.

The greater the absolute value of the loading, the better the factor contributed to the variable. The empty spaces on the table represent loadings which were below 0.5, this allowed the table to be read more easily. Likewise, the Component Matrix results for the posttest questions on the CARES-A survey questionnaire is given in the Table 23 below where there were the extracted values for 14 variables placed under 3 variables. “A technique called factor rotation is used to discriminate between factors” (Field, 2009, p. 642). The Rotated Component Matrix for the pretest questions on the CARES-I Survey Questionnaire is given in the Table 24 below. The reason for the rotation was to decrease the number of factors on which the variables under examination have high loadings. Rotation does not really modify anything but allowed the interpretation of the results to be simpler.

Table 23

Component Matrix^a for the Posttest Questions on the CARES-A Survey Questionnaire

	Component		
	1	2	3
Posttest Question 3	0.76		
Posttest Question 6	0.75		
Posttest Question 12	0.75		
Posttest Question 4	0.73		
Posttest Question 2	0.72		
Posttest Question 1	0.71		
Posttest Question 8	0.69		
Posttest Question 10	0.69		
Posttest Question 7	0.69		
Posttest Question 5	0.68		
Posttest Question 9	0.63		
Posttest Question 14	0.56		
Posttest Question 11	0.55		
Posttest Question 13	0.56		.569

Note. Extraction Method: Principal Component Analysis.

a. 3 components extracted.

A look at Table 24 revealed that that Questions 2, 1, 4, 3, 5 and 11 were evidently loaded on Factor or component 1 while Questions 13, 14 and 12 were noticeably loaded on Factor 2 and Questions 9 and 8 were substantially loaded on Factor 3. These factors could be utilized as variables for further analysis .

Table 24

Rotated Component Matrix^a for the Pretest Questions on the CARES-I Survey Questionnaire

	Component		
	1	2	3
Pretest Question 2	0.78		
Pretest Question 1	0.77		
Pretest Question 4	0.74		
Pretest Question 3	0.69		
Pretest Question 5	0.63		
Pretest Question 11	0.58		

Table 24 Continued

Rotated Component Matrix^a for the Pretest Questions on the CARES-I Survey Questionnaire

	Component		
	1	2	3
Pretest Question 6			
Pretest Question 13		0.81	
Pretest Question 14		0.81	
Pretest Question 12		0.60	
Pretest Question 10			
Pretest Question 9			0.87
Pretest Question 8			0.84
Pretest Question 7			

Note. Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.^a

a. Rotation converged in 7 iterations.

The Rotated Component Matrix for the posttest questions on the CARES-A survey questionnaire is given in the Table 25 below.

Table 25

Rotated Component Matrix^a for the Posttest Questions on the CARES-A Survey Questionnaire

	Component		
	1	2	3
Posttest Question 2	0.78		
Posttest Question 4	0.77		
Posttest Question 5	0.75		
Posttest Question 1	0.69		
Posttest Question 3	0.68		
Posttest Question 12	0.59		
Posttest Question 8		0.83	
Posttest Question 9		0.80	
Posttest Question 10		0.69	
Posttest Question 6		0.67	
Posttest Question 7		0.67	
Posttest Question 11			
Posttest Question 13			0.82
Posttest Question 14			0.81

Table 25 Continued

Note. Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.^a

a. Rotation converged in 6 iterations.

The Table 25 revealed that that Questions 2, 4, 5, 1, 3 and 12 were evidently loaded on Factor or component 1 while Questions 8,9,10, 6 and 7were markedly loaded on Factor 2 and Questions 13 and 14 were noticeably loaded on Factor 3 that could be utilized for further analysis . In summary, there were 14 pretest and 14 posttest questions utilized to measure freshmen social integration experience in a learning community. The questions asked students to give their intended social experience by answering questions like ‘get involved in student clubs and organizations’ on the pretest then they give their actual experiences respectively. The factor analysis examined the 14 pretest and 14 posttest questions items correlation of items, KMO measure of sampling adequacy,

Bartlett’s test of sphericity and communalities. Regarding the correlation of the items all 14 items correlated greater than 0.1 with at least one other item. Regarding the KMO measure of sampling adequacy were .841 and .869 respectively for the pretest and the posttest which were larger than the recommended value of .50 (Field, 2009). With regards to the Bartlett’s test of sphericity the values were statistically significant where both pretest and posttest items had p values of 0.000 which were less than the *p*- value of 0.05. This means that the correlational matrix was not an identity matrix. Regarding the communalities, all 14 items had communality values in excess of .30. This offered evidence of common variance among the items. Since the four criteria were all met, it was deemed reasonable to proceed with the factor analysis. When the factor analysis was performed, the rotation component matrix for both the pretest and posttest questions showed that there were 3 sub scales or categories (Field, 2009).