NON-TRADITIONAL PROSPECTIVE ALLIED HEALTH STUDENTS IN REMEDIATION COURSES AND THE EFFECT OF EDUCATION

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ABSTRACT

The purpose of this study was to research the correlation between the academic achievement and enrollment data of students who attend Deer Park Community College who are majoring in Health Sciences. These students were categorized into four groups including subjects who are: traditional students who do not register for remediation courses; traditional students who do register for remediation courses; non-traditional students who do not need remediation courses; and non-traditional students who do need remediation courses. Additional analyses included how many remediation courses the students had to take, the student's age, financial situation, standing GPA, and semester.

This specific research is evident in the current limitation of quantitative data regarding the remediation student who is interested in Health Sciences as a possible career path. Although many researchers have sought to seek the reason behind the lack of enrollment of non-traditional students in Health Sciences and STEM programs none have correlated the possibility of the student having to enroll in remediation courses due to the education gap as a theory. Data gathered were analyzed using statistical methods including aggregated data which were provided by Deer Park Community College's institutional research department and a survey delivered online to all health science students. Accordingly, this study was designed to provide data to Deer Park Community College's institutional research office about the impact of remediation on enrollment and admission to Health Sciences programs.

DEDICATION

To Jim and Adrianna

Faith, Family, and Freedom, three pieces of one heart.

You have made me strive to be better in all that I seek to accomplish.

I love you both.

ACKNOWLEDGEMENTS

I would like to express my deepest thanks to my dissertation chair Dr. Joseph Ducette. You have helped me through one of the most difficult and rewarding accomplishments of my academic career. You have been a mentor who I will seek council from forever. You have shown me what it means to be a dedicated educator. I would like to thank Dr Judith Stull and Dr Earl Davis; you have never wavered in your support and guidance throughout this journey. I would like to extend thanks to the rest of the Faculty at Temple University who have helped me in the beginning of my doctorate to realize that there is a light at the end of the tunnel.

I would like to thank my family and friends who have helped me not only through this degree but also through two of the most difficult years of my life. You do not ever prepare for a life-changing event like cancer. When I was diagnosed with breast cancer two years ago everything froze around me, but I could still feel the world moving, it is the oddest thing. The first thing the oncologist and surgeons tell you is to limit your stress and commitments. This is impossible when you are 37 years old and in the middle of a dissertation, are working toward tenure and have a husband and teenage daughter. My friends and family came through and they helped me through 4 surgeries, multiple doctor visits, continuing treatments, and physical therapies appointments. Today I am cancer free. I will be taking chemo medication for the next 5-10 years, but I will be here with my daughter. The cancer in a weird way gave me a boost of confidence that if I can beat it and win than I can do anything. My family and friends have had so much faith in me bouncing back and completing my goals that I have had no choice but to do it. I was just granted tenure and my next goal with the support of all these amazing angels in my life is to complete my dissertation.

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CHAPTER 1

INTRODUCTION

The need for remediation courses has been debated by educators in higher education since the early 1600's when Harvard taught remedial Latin and Greek to underprepared students (Ratcliff, 1993). The mention of remedial education in some higher education circles will cause a series of debates about the education gap, underprepared youth, college readiness, and entrance exams. While remediation may have influenced students in the 1600's it may not be as effective today, especially with the non-traditional student. The non-traditional student is often a subgroup defined by one or more of the following characteristics: twenty-five years of age or older, a student who has completed a GED but did not graduate high school, a student who works full time, a first-generation college student, a veteran, or a student with at least one child (National Center for Education Statistics, 2016).

The non-traditional student is a subgroup that may be affected by various obstacles that traditional students may not encounter during their assimilation into the higher education environment. Some of the obstacles the non-traditional student may face are career change, income loss during enrollment in college, family obligations and the burden of remedial course work. Cross (1982) states that adults, as opposed to younger learners, face situational, institutional, and dispositional barriers to learning. One such barrier is remediation. The question is why are so many adult learners required to take remediation courses? Why aren't they ready with basic math and English skills when they get to college? Many educators believe it could be due to the country's education gap.

According to a study done at the National Center for Adult Literacy and Learning, there is a substantial education gap for adult learners due to a lack of equity through primary education and high school and the pace at which younger learners absorb information (Strucker & Davidson, 2003). The education gap is traditionally defined as the inequality of academic performance between groups of students (Rhoades, 2012). The education gap can affect

student's grades, standardized-test scores including college entrance exams, course selection, dropout and enrollment rates, and college graduation rates, among other academic outcomes (Ansell, 2011).

The focus of this research was on health sciences students who were either traditional or non-traditional and who may or may not have been taking remediation courses. Deer Park College is a pseudonym for the institution where these data were collected. It is located in the Northeastern part of the country. The research compared non-traditional students who did need remediation courses at Deer Park, traditional students who did not take remediation courses and traditional students who did need to take remediation courses at Deer Park Community College. The number of remediation courses the students took was also examined. Through various data collection methods including a department- wide administered online survey I gathered a greater perspective on the driving force behind the academic struggle of these students and the influencing factors that cause access issues, under- preparedness for college level work and, lastly, admission and enrollment setbacks.

Problem Statement

The education gap and its long-term effects on college student's remediation course placement is a problem that many students in higher education face while seeking program enrollment. This research emphasizes the effect the education gap has on students who need to complete remedial coursework before they can begin to access college level courses required as prerequisites for most Health Sciences Programs. Student's enrollment and retention rates at the community college were compared with those of their peers who did not need remedial coursework. The focus was on admission to Health Sciences Programs which included nursing, radiography, medical lab, and medical assistant to name a few.

The research purpose was to explore the retention and enrollment rates of students who claim Health Sciences as their major and who have taken more than one remediation course at a community college. In doing this research a goal that emerged was to see if it can help determine

when a student drops out and for what reason. This may help evaluate many access and equity issues students are having in the Health Sciences major. For example, if Deer Park is losing most students because they are unable to pay out of pocket for the remediation courses due to a lack of funding, it may be possible to offer a grant of some kind.

Purpose of Study

The purpose of this quantitative study was to explore the obstacles non-traditional students face when trying to gain access to health sciences programs while having to complete remediation coursework. The traditional student enrolled in health science programs were also researched to see the difference of the effect remediation may have on students' academic decisions under the age of 25 and who do not face the barriers non-traditional students have. The study used Adult Learning Theory, Figueroa's Framework, the education gap, use of remediation courses and numerous student variables that affect enrollment into health sciences programs to inform the research questions and interpret the results. A survey distributed through Survey Monkey was used to collect data from the currently enrolled students. In addition, aggregated data from the institutional research office at Deer Park Community College were used to test the hypothesis that fewer non-traditional remediation students enroll in health sciences programs than students who do not need remediation courses. The survey was intended to give Deer Park a better picture of who the non-traditional student is. The participants were current health science students from Deer Park Community College. Aggregated data and survey responses were examined throughout the study. Some variables that were explored are number of remediation courses taken, sex, age, whether the student has dependents such as children or elderly parents, and race of the student among other variables mentioned in the survey.

Research Questions

Two major questions are explored in this dissertation: 1. To what extent does being a traditional or non-traditional student taking remediation courses affect GPA and/ or retention? 2.

How do traditional and non-traditional students differ in terms of demographic variables such as race and sex?

Theoretical Framework

Adult Learning Theory is examined to explore the issues non-traditional students face regarding access and equity in higher education. Adult Learning Theory is used in this particular research to show the difference between how a non-traditional student learns and explores academia in comparison to their traditional classmates. The theory is stated as both historical literature and a basis upon which higher education institutions such as Deer Park may need to shift their practice approaches when placing non-traditional students in courses. This subgroup of students is often measured in the same way non-traditional students are measured without considering the way adult learners perceive higher education and the impact that may have in the academic environment (Ansell, 2011). Adult Learning Theory is defined by Malcolm Shepherd Knowles as andragogy. Andragogy is defined as the art and science of adult learning; thus, andragogy refers to any form of adult learning (Kearsley, 2010). The term andragogy can be compared to the term pedagogy. Andragogy means man leading while pedagogy means child being led (Kearsley, 2010). Knowles' Adult Learning Theory (1984) is based on five key assumptions of adult learners. The first assumption is Self-Concept which is defined as a person becoming more mature and being a self-directed individual. Next, he mentions the Adult Learner Experience which draws upon a person's life experience and defines how such experiences influence the way the adult learns. This is rarely if ever taken into consideration during the application period at a higher education institution (Ryan & Deci, 2000). For example, a non-traditional student who is a career changer and was a mechanic for 10 years prior to entering higher education may be able to draw upon hands-on experience to learn at a clinical site during their time in a nursing program. Next, Readiness to Learn means the adult places a value on education that will help elevate them in other social roles. Next, Orientation to Learning reflects on an adult learners' awareness of time and the knowledge that immediacy is important versus

the overall subject of the college experience. Adult learners go into the academic environment with the goal of fixing a problem or bettering their current situation through education. The last assumption of Knowles is Motivation to Learn which means that as an adult matures the motivation is internal and not based on the notion to please someone else as a reason to embark on higher education. In younger students external motivation is seen due to the influence of teachers, parents, and peers (Ryan & Deci, 2000).

The second theory reviewed is Figueroa's Framework (Figueroa, 2010). This framework was built to assess physical education participation and acceptance on sports teams. However, the foundation for Figueroa's framework fits the exact issues many non-traditional students face. This framework allows the researcher to explore the disparities of the non-traditional student in a unique way. Figueroa's framework is constructed over five separate levels: individual, interpersonal, institutional, structural, and cultural. These areas are used to investigate the ways in which inequities challenge the area of sport and physical activity (Figueroa, 2010). For research purposes Figueroa's framework was used as a model to explore the data gathered on the non-traditional remediation student.

Throughout the literature review the education gap, the non-traditional student, and remediation are discussed. If Adult Learning Theory can be utilized it may allow educators to identify and assist students at Deer Park Community College, while recognizing that their access and equity issues did not happen overnight. This is a generational and educational issue that society and higher education institutions need to talk about, to help acclimate and facilitate these students. Chen states that an important population of student diversity that is often neglected in higher education is the non-traditional adult learner (Chen, 2014). Lareau (2011) states that there are palpable differences and an epidemic of unequal childhoods when it comes to education, generational support, age, race, and family. According to the National Center for Education Statistics non-traditional students represent approximately 73% of the higher education population and is on the rise (NCES, 2022).

Access and equity for the non-traditional students is a major issue. Non-traditional students are more likely to have access issues due to conflicting responsibilities such as: work, parenting, caring for an elderly parent, and a lack of preparation from previous educational institutions (Eppler, Carsen-Plentl, & Harju, 2000). Non-traditional students are less likely to complete their degree programs and have lower attrition rates compared to traditional students (Taniguchi & Kaufman, 2005). These facts demonstrate an emerging and disturbing trend that is developing throughout higher education: a trend which directly affects the non-traditional student.

The non-traditional student is a subgroup that has often been ignored in higher education institutions, this research was noted as early as the 1880's (Knowles, 1984). Equity data continue to push higher education professionals, to find better strategies to serve the non-traditional student (Batiste, Denby & Brinson, 2022). This research sought to find a connection that links the education gap, the non-traditional student and enrollment and admission data within health sciences programs at Deer Park Community College.

Lens

Due to the nature of quantitative study theoretically my role as a researcher is non-existent. The goal of the study was that it may be repeated and return the same result within reasonable limits (Greenbank, 2003).

A pragmatic approach to the research was maintained. The Pragmatic Worldview approach was used in this research to look at the way educators' mentor and help remediation students implement a quantitative design using archival data and survey techniques. The education gap directly affects access and equity and in turn causes students to delay degree completion due to remediation course requirements. Many of the problems seen during the admissions or access phase by a student are caused by the fact that they do not have the proper academic fundamentals to test into college level courses. Students often quit before they begin because they see nothing but struggle ahead of them, overwhelming cost, and a longer degree completion date.

Equity is often the source behind this access issue. Equity should play a role in a student's education in the first grade. It should not matter what neighborhood you are from or whether you attend a public or private school; study and comprehension skills should be taught. Students should be able to bring hard earned life skills into the classroom as well as academically merited achievements. As an educator who works at a community college, the amount of potential walking back out the front door of the institution is disheartening; some never return due to a less than positive outlook. In a strict radiology program such as the one at Deer Park, students must maintain a high GPA and are recommended to work less than part time due to the rigorous requirements. It is very difficult to see the disappointment on their faces. In my experience, remedial students often switch their major or decide not to enroll the following semester.

The goal was to reflect on what I have learned in teaching various students from many diverse backgrounds and use it to help influence change in adult learners that do not believe entrance into a health sciences program is an attainable goal. This review of literature and future data were gathered to answer the two major research questions stated previously, which pertain to the problems non-traditional remediation student populations face when trying to seek success in health sciences programs.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction of the Non-traditional Student

Although the literature on adult learning theory and adult education is vast, the information regarding these academic areas in education practice and the study of non-traditional student's barriers in obtaining higher education resulting in education gaps due to many different variables is limited (Cruce & Hillman, 2012). According to the NCES a non-traditional student is defined by one or more of the following characteristics: as a student over the age of 25, a student who completed a GED instead of graduating from high school, a first-generation college student, a student with dependents, a veteran, or a student who has been out of high school for more than five years (National Center for Education Statistics, 2022). Furthermore, the non-traditional student is a diverse and often overlooked group of students that makes up approximately 73% of the post-secondary population in the US with this percentage on the rise at two-year institutions (National Center for Educational Statistics, 2022). Non-traditional students often seek higher education for employment opportunities and to maintain career goals while supporting themselves and dependents (Chen, 2017).

According to Gasman (2013) administrators under President Obama wanted every American to complete at least one year of secondary education by the year of 2020. According to Perna and Jones (2013) most Americans need to obtain a minimum level of education after high school to compete and survive in the global economy. This task becomes difficult for non-traditional students due to the barriers they face in the 21st century classroom (Grabowski, 2016). One such barrier is the stereotype of college which is a youth centric based place of higher education (Erikson, 1968). Responsibilities like dependents, finances, health issues, transportation, college entrance exam tests, length of time spent out of school and finding time management strategies were all hurdles non-traditional students faced while trying to embark on educational paths and enroll in college programs (Erisman, & Steele, 2012). In a report

published by the US Department of Education (2016), one quote succinctly outlines a problem of equity in education by stating,

> Gaps in college opportunity have contributed to diminished social mobility within the United States, and gaps in college opportunity are in turn influenced by disparities in students' experiences before graduating from high school. This is particularly true for people of color, who share many of the same childhood and educational experiences as low-income and first-generation college students. (p.14)

To accomplish Former President Obamas' goal Gasman (2013) believes that the focus should be on the fastest growing demographic group- the non-traditional student. Contreras, Malcom, and Bensimon (2008) suggest that every citizen of the United States needs to be a college graduate to survive in today's economy. While Obama's goal can be appreciated, is it attainable? One such theory is that students are being driven further from achieving a college degree due to the education gap (Bensimon, 2005).

Education Gap

The education gap and division of the traditional student and non-traditional student population in the United States is nothing new and has been reinvented to include various groups throughout time. It began with a term called segregation. Segregation of education due to racial and socioeconomic differences was initially supposed to end when the nation turned toward desegregating or bringing the traditional and minority student together in the classroom (Gasman, 2013). Although segregation may have been based on race and socioeconomic standings historically, today non-traditional students are being unintentionally segregated from traditional students through lack of innovation to cater to adult learners' lives outside the classroom, and through academic struggles within the classroom (Chen, 2017). The Adult Learning Theory clearly states the way in which non-traditional students learn differently and have been affected by the education gap. The education gap has affected a particular group of non-traditional students named the first-generation college student. The first-generation college student is defined as a student who is the first in their family to attend a higher education institution.

Markowitz (2017) suggests that the first-generation college students can fall into the education gap even at birth before they have the opportunity to attend a primary school. The advantage on a socioeconomic level of a student who has parents who are well educated can be a huge disparity between first generation college students and their peers. According to Startz (2022) first generation college students tend to come from low-income households and choose to apply for less popular colleges. Racial disparities are also a contributing factor to first generation college students and the education gap (Markowitz, 2017). Students who were Black or Latino had lower GPA's then White first-generation college students in their first year of attendance (Gehringer,Folberg, & Ryan, 2022). According to Startz (2022) first generation college students graduate 23 percent less of the time compared to non-first-generation college students within similar majors. Despite this, institutions are still using a one size fits all approach to education (Barshay, 2018). An American Council for Education survey reported over 40% of higher education institutions indicated that they "did not identify non-traditional students for purposes of outreach, programs and services, or financial aid" (Lakin, Mullane, & Robinson, 2008 p.12). Finding new strategies to integrate the non-traditional student and make them successful in today's classroom is crucial to higher education (Bensimon, 2005).

History and the Non-Traditional Student

How can the non-traditional student be helped? Looking at educations history with supporting underrepresented groups, one type of higher education institution has been successful. Historically Black Colleges and Universities (HBCUs) were the only institutions to educate one of the most prevalent groups of the underrepresented student, the African American male (Mercer & Stedman, 2008). According to Gasman (2008), the Historically Black Colleges and Universities have a unique understanding and desire to serve low income, first generation and traditionally underrepresented groups. Some of these subgroups make up the student body known as the non-traditional student (Cruce & Hillman, 2012).

Considering this information, educators should use HBCUs as a vital resource in closing the education gap and involving these subgroups in research that can help institutions get students closer to their higher education goals. There are many hurdles that non-traditional students face on the way to college. In 2012, the Lumina Foundation found that the care of independents, work responsibilities and time to achieve educational goals were the three highest-rated issues non-traditional students face (Erisman, & Steele, 2012). While non-traditional students and minority populations such as African American and Hispanic students are on the rise numerically in higher education, their ability to enter and succeed in the college world is in question (Perna & Jones, 2013). Many factors can affect the success of the non-traditional students including financial barriers and lack of resources (Perna & Jones, 2013).

The Cost of Higher Education

According to Perna and Jones (2013) college enrollment is determined by financial resources, academic preparation and achievement, knowledge and information about college and financial aid, and support from significant others. According to Kolodner (2015), non-traditional students or low-income students, as is often the case, represent a significant percentage of the college population. They are often found attending community colleges that offer career-based degrees and certificate programs. They often are enrolled part-time, maintain full- time jobs, and care for children or aging parents (Chen, 2017). They are likely to be first-generation college students, have limited job skills, and have minimal support systems or knowledge of how to maneuver through the web of academia (Kolodner, 2015). The financial needs of non-traditional students become grievous as the rising cost of tuition makes it difficult to balance home life and a new career path through degree attainment (Ruark, 2014). The US Department of Labor (2015) states,

> By 2020, approximately two-thirds of all jobs will require a postsecondary credential, and over 95 percent of jobs created since the 2010 economic recovery have gone to people with at least some college education. (p.8)

Access to financial resources is often a deciding factor on where a student will attend college (National Center for Education Statistics, 2022). Rising cost in higher education has led to an increase of middle-class students enrolling in community colleges essentially taking a seat once reserved for students from the surrounding area who may not have the grades or finances to enroll in a four-year school and who may be returning to school after starting families (Gasman, 2008). Community colleges were once known as open door institutions that accepted everyone at every level of higher education (Schneider & Yin, 2012). However, it is becoming increasingly more difficult for non-traditional student populations to enter sought after programs in certain majors such as allied health. This is due in part to increases in tuition and competition for limited seats from traditional students who would historically seek out four-year universities. The demographic that is affected the most by this shift is the non-traditional student (Gasman, 2008). Rhoades (2012) states,

> Traditionally, our community colleges have been critical portals of higher education for Latino, African American, Native American, and lower income working class families. (p.3)

This should be great news in the effort to close the education gap; sadly, it is not. Due to lack of financial assistance, many community colleges are limiting their enrollment and course offerings (Rhoades, 2012). Wellman (2017) states,

> Although Black and Hispanic families tend to spend less ($12,660 and $11,540, respectively) than white families ($13,588) per year on college, the cost of attendance is still relatively greater for minority students. This is because when you factor in that minority families tend to have lower wages and household incomes, the relative cost for Black and Hispanic students amounts to a larger chunk of their earnings. (p.2)

Because of the statistics above, many students withdraw from post-secondary education due to the cost-to-income ratio on their family dynamic (Rhoades, 2012). Evelyn states the silent killers of non-traditional student enrollments are state budget cuts (Evelyn, 2003). The applicants most often left suffering are low-income students who need remediation courses and do not have the funds to support rising tuition cost at the community college level. When financial aid is made available for students there is no guarantee that benefits and the necessary support these

students need to obtain equal access will be given (Gladieux & Swail, 1998, as cited in Swail & Perna, 1991). If finances are a deciding factor for many of the students in the educational gap, how are they able to compete for enrollment at a traditionally prestigious university? According to Eckel (2008) universities and colleges are fighting an internal struggle to be accessible and affordable for all students, while maintaining enough prestige to be competitive in the higher education market. According to Evelyn (2003) Non-traditional students are often sacrificed when it comes to remedial course availability at community colleges. They are often students who need to take ESL and or remediation courses in order to begin college level course work. The elected administration at these colleges often do not consider the needs of the non-traditional student first and instead allocate funds for courses that students need in order to fulfil program and graduation requirements.

We can conclude from the literature that the underrepresented non-traditional groups attempting to gain access in the competitive world of higher education in allied health programs are falling into multiple statistical categories. For example, if a student is a first-generation college student of a low-income home and from a community of color, we can assume that the students' parents are often undereducated, underpaid and living in an inner city or poorer rural area. These obstacles are difficult enough to face without the pressure of filling out the Free Application for Federal Student Aid, and college essays which the parents of these students have likely never seen. Access issues often plague the non-traditional student. Students can be denied access both financially and academically from higher education institutions.

Access and Non-Traditional Student Groups

The adult non-traditional student may have been out of school for many years and have no knowledge of FASFA at all and therefore be financially denied access to higher education. Traditional students that come from higher socioeconomic backgrounds who have had at least one parent attend college are more likely to gain access to a top-ranking institution (Astin, 1993, as cited in Astin & Oseguera, 2004). Parents who know how to navigate the collegiate world often

become great assets for the new college student to utilize (Fleming, 1990; Valencia & Aburto, 1991; as cited in Astin & Oseguera, 2004).

Access which was once open to the non-traditional student is now shrinking (Evelyn, 2003). Rhoades (2012) states, “As currently structured and funded, the community colleges cannot ensure both access and success” (p.17) The trend of higher and middle-income students attending community colleges is not changing. According to Rhoades (2012) this is due in part by the rising cost of tuition and strict enrollment limitations at four-year colleges and universities.

Another reason for the growing gap in achievement, researchers say, could be that upper to middle class parents invest more time and money than ever before in their children, while lower-income families, which in many cases are a single parent household, are increasingly lacking time and sustainable resources (Smith, 1996). This change is now squeezing out the non-traditional and underrepresented student who was the community college applicant (Evelyn, 2003).

Community Colleges

As this new wave of students increased, community colleges are rushing to create a full collegiate experience for these students so that institutions can attain them which will often lead to lack of resources for non-traditional students. An example of this is highly competitive two-year nursing programs at community colleges. A prospective student must apply and be accepted to the community college and then fulfill a list of requirements which include GPA above 3.0, prerequisite courses with a heavy emphasis on science and the NCLEX exam which is a pre-entrance exam 90% of programs use. The student must perform academically and have the financial means to remain at the college for more than two years. This competitiveness can prove to be overwhelming for the non-traditional student who often works full time and requires remediation courses before they can begin the prerequisites courses required for the sought after allied health programs like nursing.

Recruiting and retaining non-traditional nursing students continues to be a crucial part of this process but remains a challenge for the nursing education community (Coleman, 2008). National nursing and healthcare organizations including the National League for Nursing (NLN), the American Association of Colleges of Nursing (AACN), the Institute of Medicine (IOM), and the American Nurses Association (ANA) agree that “increasing diversity of students in US nursing programs is a high priority” (Coleman, 2008).

Administrators in community colleges have begun to set up pathway to success programs for underrepresented groups to help diversify allied health and STEM programs. Increasing recruitment and improving retention and graduation rates of non-traditional students, could increase and allow competitive programs to foster the colleges’ diversity and inclusion initiatives while meeting success standards.

Remediation

To help students find their way, we must make sure educational solutions fit the needs of these groups. There are challenges to this especially in the STEM and allied health fields. According to The Chronicle of Higher Education (2017) keeping minority students enrolled in these programs can often be a challenge due to a culture that can be unwelcoming and unable to remediate. In many cases the non-traditional student will turn to a more welcoming higher education institution, the community college (Astin, 1993, as cited in Astin & Oseguera, 2004).

The only way for these students to have a real chance at equal education is to prepare them for the competition of college admittance and change the corrupt and ineffective policies that are currently in place by misguided organizations (Conley, 2000; Garb, 1998, as cited in Perna & Jones, 2013). Even if a college student makes it through the enrollment process, they are often led to a bridge of nowhere full of remediation courses. Remediation courses can be a roadblock for most students, especially non-traditional students due to the way non-traditional students learn in and out of the classroom (Complete College America, 2012). Chen (2016)

states, less than 50% of community college students pass the recommended remediation course and among four-year colleges and universities 59% of students are successful.

Remediation is not a new concept in higher education. Shedd (1932) states, the first remediation education began as tutoring for wealthy white males. This activity progressed to pre-college and preparatory writing and then later integrated remedial courses and programs (Arendale, 2011).

While the target population in the mid 1600's to the mid 1940's was mostly white males, a change in the remediation student demographic began in the late 1940's (Clowes, 1980). According to Arendale (2011) traditional white male students, non-traditional males and females, and federal legislative priority groups such as, first generation, economically disadvantaged and students of color all began to require remediation courses.

Developmental or remedial education has become a staple in most community colleges and universities. According to Attewell, Lavin, Domina, and Levey (2006) historically at least 40% of college students took one remediation course. Since 1998 these numbers have been on the rise, especially in community colleges that have students of diverse backgrounds. Lin and Ran (2022) state, 65% of students from a 2-year school must enroll in at least one remedial course. The enrolment of students in these courses are often for two main reasons, inaccurate placement, and high attrition rates (Lin & Ran, 2022). Many critics of remediation courses suggest that students who must enroll in more than one course led to increased dropout rates in comparison to students who enroll in one or no remedial courses (Yolak, Kiziltepe, & Seggie, 2019).

A notable issue that many students have is the question of are these courses going to transfer or represent academic credit? Because of the uncertainty of courses transferring, students who take remedial courses may have issues with securing financial aid for all required remediation courses (Sanabria, Penner & Domina, 2020).

The purpose of remedial courses is to address inequities in academics. They are supposed to both improve understanding of content for the student and bring a close to the education gap (U.S Department of Education, 2021). However, Chen (2016) states, required remediation courses are higher in three groups, non-traditional students, African American students, and Hispanic students. Bettinger and Long (2004) state that not only do colleges policies on remediation courses vary but so do the instruments used to measure when a student should be enrolled in these courses.

With so much confusion surrounding remediation methods and the rates of enrollment in these courses within specific student groups, taking a remedial course can be both a hinderance on the student's education academically and financially (Sanabria, Penner & Domina, 2020).

Accountability and Equity in Higher Education

Who is accountable for creating an equal playing field for all students? Research suggests that society cannot rely on the government whose ideas have consisted of segregation, desegregation without a plan, and most recently, rebooting, remediation and tracking (Rhoades, 2012). More than 50% of first year college students who enter a community college need one or more remediation courses (Complete College America, 2012). This is due to lack of preparation in primary and high schools which some researchers suggest is expanding the gap. Some stakeholders suggest removing developmental courses from college offerings; others see these classes as essential to the mission of higher education due to the lack of preparation some students have entering higher education (Complete College America, 2012).

Some educational researchers are examining the Triad Theory (Tyszko, 2018). The Triad Theory is defined as "the rule of three" (Tyszko, 2018). Some educational researchers are suggesting that the triad theory may be a way to organize a solution for the educational disconnect seen in schools. There is a formal triad that has been assembled to counteract the education gap in America. According to the higher education act there are three separate entities: states, accreditation agencies, and the U.S. Department of Education (ED) that must grant

institutions of higher education (IHEs) approval so they may be eligible to participate in federal financial aid programs. Some examples of these programs are federal student loans and Pell Grants. Together, these three entities compromise what is referred to as “the Triad” in higher education (Hegji, 2023).

Bensimon and Malcom (2012) state that student success is an institutional responsibility. They further state that disadvantaged students are expected to know rules and behaviors that are perceived by college culture as steppingstones toward completion. Harper and Hurtado (2011) investigated these conditions a bit further. They did a cluster study which examined student experiences and racial climates throughout campus relations. Their findings suggest that the minority students are often ignored when requesting relatable cultural environments among a predominately white campus. Additionally, participants stated that their white counterparts were happy with campus and assumed that minority students were equally satisfied with the cultural climate. This misconception is another reason the education gap is such a multicultural, multi-organizational and administrative issue. It is also one of the reasons that the non-traditional student is overlooked and callously ignored by higher education institutions. According to Choy (2002) most undergraduate students can be classified as non-traditional; therefore, the traditional student, who lives on campus and enrolls full-time, is in the minority on most campuses. Yet college campuses cater to this part of the student body population significantly ignoring the needs of the adult non-traditional student (Holdsworth & Quinn, 2011). The accountability of higher education institutions needs to include that of the non-traditional student. Adult Learning Theory may be a tool higher education institutions can use to begin integrating and helping adult students assimilate (Barnett & Jackson 2019).

Higher Education Strategies

Many higher education institutions are implementing strategies to help the underrepresented non-traditional student. Perna and Jones (2013) talk about the need of the non-traditional student. Many of these students are raising families and need a direct approach to

college completion. These students are enrolling in college to better career prospects and help support their families. Some higher education institutions which receive many students from this group are beginning to offer services they can use such as discounted daycare and flexible class schedules to retain the underrepresented and non-traditional student.

The solution that educators need to start looking for may be in the adaptation of double loop learning (Witham & Bensimon, 2012). Double loop learning is a practice by institutions that focuses on bringing issues like lack of resources and educational access problems to the surface through in-depth research of the underlying problem. Providing support for these students has become complicated because there are few quantitative studies that have pinpointed the possible reasons for underrepresentation (Karabel & Astin, 1975, as cited in Astin & Oseguera, 2007). According to Strayhorne (2013), historically, researchers do not possess enough information about underserved students to determine college readiness.

Educators are now researching the education gap to pinpoint the skills that make students college ready. One such example are the scores students receive after taking the American College Test, which determines college readiness based on four sections: math, English, reading and science (The National Center for Fair and Open Testing, 2023). Many administrators would argue that this is not a useful indicator in determining college readiness and it is an unfair measure (Smith & Reeves, 2020). This argument is made because of the differences in education quality and time spent away from an academic environment for some non-traditional adult learners.

According to research by Pitre (2009) students with the lowest college academic readiness attend high schools with large concentrations of racial/ ethnic minority students, low-income students, and those who would-be first-generation college students, and adult learners returning to education after taking a break to pursue work and raise families: groups who tend to be underrepresented across the full spectrum of postsecondary education.

Another strategy for college readiness that has been ruled out by administrators is high school level college preparatory classes. This is due to the range of challenge level represented at various high schools (Perna & Jones, 2013). Chen (2017) states 44% of students polled in a recent study by the College Board said they wish they had more remedial math and science courses available to them while in high school. The National Assessment of Educational Progress has studied the achievement gap between Caucasian and African American students (Ward, 2006). The findings of this study indicate that although minority students are graduating high school at a higher rate than 30 years ago, the gap has widened when compared to their Caucasian counterparts at the collegiate level. This, presumptively, is due to racial and socioeconomic differences which still exist (Ward, 2006). The data on remediating these students are astounding; distressed about their placement into remediation, thousands who were accepted into higher education institutions never register or show up for classes. The students that do show up for class are often disheartened and according to Complete College America only, “1 out of 10 students who needed remediation graduate from two-year colleges” (2012). The statistics on graduating non-traditional adult learners who need remediation are similar. The American Council on Education found that 41% of low-income adult students have taken a remedial course, compared with 31% of traditional students. These students need access to other academic resources other than remedial courses (ACE, 2006). Barshay states that many students who take a remediation class drop out without completing a college degree (Barshay, 2018)

Some strategies for receiving positive feedback are early intervention programs. Gaining Early Awareness and Readiness for Undergraduate Programs or (GEAR UP) is a program established by the 1998 redesigning of the Higher Education Act (Swail & Perna, 1991). GEAR UP is a grant program which helps underrepresented students pay for college. TRIO programs have found mutual success supporting all the students’ needs through academic support services, remediation courses with outlets to success, financial services, and counseling (Swail & Perna, 1991).

Research indicates a lack of historical knowledge about these groups. Access and enrollment strategists are shifting focus toward including these groups in institutional realignment policies due to the demand of global socio-economic growth through higher education initiatives. Allied health programs are seeking a diverse student body to introduce to the work force and are trying to help these students gain and maintain enrollment. While the research on the education gap is growing there is little to no significant data on the effects of Allied Health enrollment and retention of these specific students. According to Sullivan, “The rationale for increasing diversity in the health workforce is evident: increased diversity will improve the overall health of the nation” (p.3, 2004). A diverse healthcare work force will never be accomplished unless there is a shift of focus which lands on educating non-traditional adult students.

CHAPTER 3

METHOD

This chapter describes the rationale, approach, sample, measures, and procedures used for the quantitative study. The method used to recruit participants regarding ethical considerations is included. The chosen method for this study was the quantitative method. The quantitative method was chosen due to the nature of the problem and the research questions that were answered. As stated in Creswell,

> Quantitative methods involve the process of collecting, analyzing, and interpreting the results of a study and specific methods exist in both survey and experimental research that relate to identifying a sample and population, specifying the type of design, collecting, and analyzing data, presenting the results, making an interpretation, and writing the research in a manner consistent, with a survey or experimental study. (Creswell, p.148, 2018)

Rational for Selected Approach

The rational for the selected approach includes both archived data and survey data. This includes, but is not limited to, collecting quantitative data on variables selected from the Deer Park Community College student body who were health sciences majors. The study involved four groups: traditional and non-traditional students who do or do not have to take remediation courses. These four groups were compared on two primary dependent variables: GPA and retention. In addition to the archived data, a survey was created using survey monkey which was distributed online to students in the health sciences major. The survey sought to answer the research questions and give Deer Park a new view on the non-traditional health student. The survey was administered online due to turnaround time and economic benefits. The survey asked the respondent to self-identify as a traditional or non-traditional student. These two groups were compared on several variables which included: the amount of remediation courses taken, highest level of education, veteran status, student gender, age, race, year of enrollment, language, major, family income, parent status, people living in the household.

Sample/ Participants

The sample for this research came from the population of Deer Park Community College students who had declared Health Sciences as a major. Deer Park Community College was founded in 1964 due to a need in the surrounding community for a two-year higher education institution. Deer Park Community College continues to develop new programs based on faculty, student, and community leader recommendations. It has recently expanded its Health Sciences programs by adding a Magnetic Resonance Imaging, Computed Tomography Scan and Ultrasound program to the Radiography Department. Deer Park has numerous affiliation agreements with universities across the country and has grown to three campuses in order to serve its students.

Data were provided by the Institutional Research office and consisted of the following semesters: fall 2017, spring 2018, fall 2018 and spring 2019. The data set included the student's age when the student first enrolled in the community college, gender, whether the student had taken a remedial course at some point, the course or courses the student had taken in each of the four semesters, and the student's GPA. There were 2,808 students included in the data set. Descriptive data on gender and age are contained in Tables 4.1 and 4.2. The sample size for the survey includes the population of health science students who chose to respond. The data for the second question in this research was derived from a questionnaire that was sent to all students who were in one of the programs in Health Sciences. There were 500 questionnaires sent on May 1st, 2020, with 315 being returned. Of these 315, 25 returned the questionnaire indicating that they did not want to participate. This reduced the potential sample to 290. However, of these 290 several students completed only the first one or two questions and then left the remaining questions blank. These students were removed from the data set. This left 244 students in the data set. Descriptive data on these students are presented in Chapter 4. Not all the questions included in the questionnaire are presented below. The complete set of questions is presented in

Appendix A. The sample sizes for these tables will not always total 244 since some students left some of the questions blank.

The students in both data sets represent non-remediation and remediation students with various demographics. Table 3.1 below is an example of a 2018 IPEDS report for a fall cohort.

Table 3.1 represents traditional VS non-traditional students in the fall 2018 IPEDS Cohort at Deer Park Community College:

Table 3.1

Traditional Vs Non-Traditional Students in Fall 2018 IPEDS Cohort at Deer Park Community College

		Health Sciences Department	All Departments
Traditional	Count	843	5,632
	%	*54.0%*	*72.6%*
Non-traditional	Count	718	2,129
	%	*46.0%*	*27.4%*
Total		1,561	7,761

Recruitment Plan

The recruitment plan was to use collegial cooperation between the health sciences department and the institutional research department. By agreeing to share my projections and output data I entered into an agreement with them to be able to make use of the resources mentioned above. The students are automatically involved without recruitment from me due to the data being collected through the permission of the institutional research office.

Procedures, Measures, Instruments

Data were used from Deer Park Community College's Institutional Research Department. These data are collected annually and used to measure class size, enrollment rates, retention rates, tuition cost and admission rates into programs including health sciences. Some instruments

that the Institutional Research Office uses are the CTRE which stands for the Completion, Transfer, Retention, and Employment data. Other sources were used as the study progressed such as IPEDS and the Community College Survey of Institutional Enrollment. An electronic survey using Survey Monkey was developed and distributed to all health sciences students through Deer Park Community Colleges Canvas portal and the institutional resource office.

Once the data from these instruments had been analyzed, a report was created which pinpoints the differences between success and admission in health sciences programs depending on the path the students had to take. The purpose of using these tools for collection is to pinpoint the variables mentioned above as major factors in remedial coursework research. This aided in answering the research questions that were previously stated.

Data Analysis

The primary methods to analyze the data consisted of the t-test, the Analysis of Variance (ANOVA) and chi square. This was accomplished by accessing archived data from Deer Park Community College's Institutional Research Office and administering the health science survey online. The data were analyzed by the Statistical Package for the Social Sciences (SPSS).

Ethical Considerations

The main ethical consideration was to abide by the guidelines set forth by FERPA and Deer Park Community College which value and adhere to student privacy and protection. A second ethical consideration was anonymity of students who participated in the research. The third was completing and respecting the Institutional Research Committee's approval procedure set forth through Deer Park Community College before distribution of the survey or any other data retrieval method (See Appendix C). Fourth, all participants were informed about the purpose of this study and were able to revoke consent to continue through the survey questionnaire at any time (See Appendix B). Lastly any type of communication in relation to the research was done with honesty and transparency.

CHAPTER 4

RESULTS

Introduction

The purpose of this study was to explore the obstacles non-traditional students face when trying to gain access to health sciences programs while having to complete remediation coursework. The traditional student enrolled in health science programs was also studied in order to see if there is a difference of the effect remediation had on all students' academic decisions under the age of 25 and who did not face the decisions non-traditional students did. The hypothesis for this research was formulated by asking two key research questions. Question 1 asked "to what extent does being a traditional or non-traditional student taking remediation courses affect GPA and or retention?" Question 2 asked "how do traditional and non-traditional students differ in terms of demographic variables such as race and sex?" Through past advising experiences with students and after reviewing the limited literature on these topics I hypothesized that a non-traditional student who takes remediation courses would have a lower GPA than that of a traditional student who does not need to take remediation courses and who may not have the additional responsibilities of a non-traditional student. I further hypothesized that any student who needs remediation courses will have a lower retention rate in the Health Science program they chose.

This chapter will be presented in three parts. The first and second parts will present the results answering the two research questions. Part 3 will conclude the chapter. One of the aspects of the data for this study is that the two research questions are answered by two different data sets. Consequently, each of the first two sections will begin with descriptive data on the sample used to answer that specific research question. This will be followed by the statistical analyses.

Research Question # 1

The first research question was: *To what extent does being a traditional or non-traditional student taking remediation courses affect GPA and/or retention?*

The data to answer this question were derived from the institutional research office of the community college used in this research. The Institutional Research office was asked to provide data on all Health Science students taking courses during the fall 2017, spring 2018, fall 2018 and spring 2019 semesters. The data set included the student's age when the student first enrolled in the community college, gender, whether the student had taken a remedial course at some point, the course or courses the student had taken in each of the four semesters, and the student's GPA. Data on the students' gender are contained in Table 4.1.

Table 4.1

Gender of Students in First Data Set

Gender	Frequency	Percent of Sample
Female	2,366	84.4%
Male	436	15.6%

As shown in Table 4.1, a large proportion of the sample is female. This is consistent with national trends in the health care field. Data on the age of the sample are presented in Table 4.2. In this table, the age groups that constitute traditional students are presented in red.

Table 4.2

Age of Students

Age	Frequency	Percent of Sample
Less than 20	508	18.1%
20 – 21	470	16.7%
22 – 23	333	11.9%
24 – 25	261	9.3%
26 – 27	218	7.8%
28-29	198	7.1%
30 – 35	415	14.8%
36 – 40	165	5.9%
41 – 45	92	3.3%
46 – 50	73	2.6%
51 and Over	69	2.5%

The mean age for the sample was 26.81 and the range consisted of students who were self-identified as 16 through 66.

As shown in Tables 4.1 and 4.2, the sample for the first research question was predominantly female with an average age of approximately 27 years. For the purposes of this research a non-traditional student was defined as any student 26 years of age or older. As shown in Table 4.2 approximately 44% of the sample is non-traditional using this definition.

GPA

Table 4.3 presents the means and standard deviations of cumulative GPA for students who took one or more remedial courses compared to those who did not take a remedial course. The table is also divided into those who are traditional students versus those who are non-traditional.

Table 4.3

Means and Standard Deviations for Cumulative GPA

Group and Type	Mean	Standard Deviation	N
No Remedial Course:			
Traditional	2.79	1.06	707
Non-Traditional	2.96	1.19	465
At Least One Remedial Course:			
Traditional	2.41	1.16	871
Non-Traditional	2.82	1.13	759

The ANOVA summary table is presented in Table 4.4

Table 4.4

ANOVA Summary Table for GPA

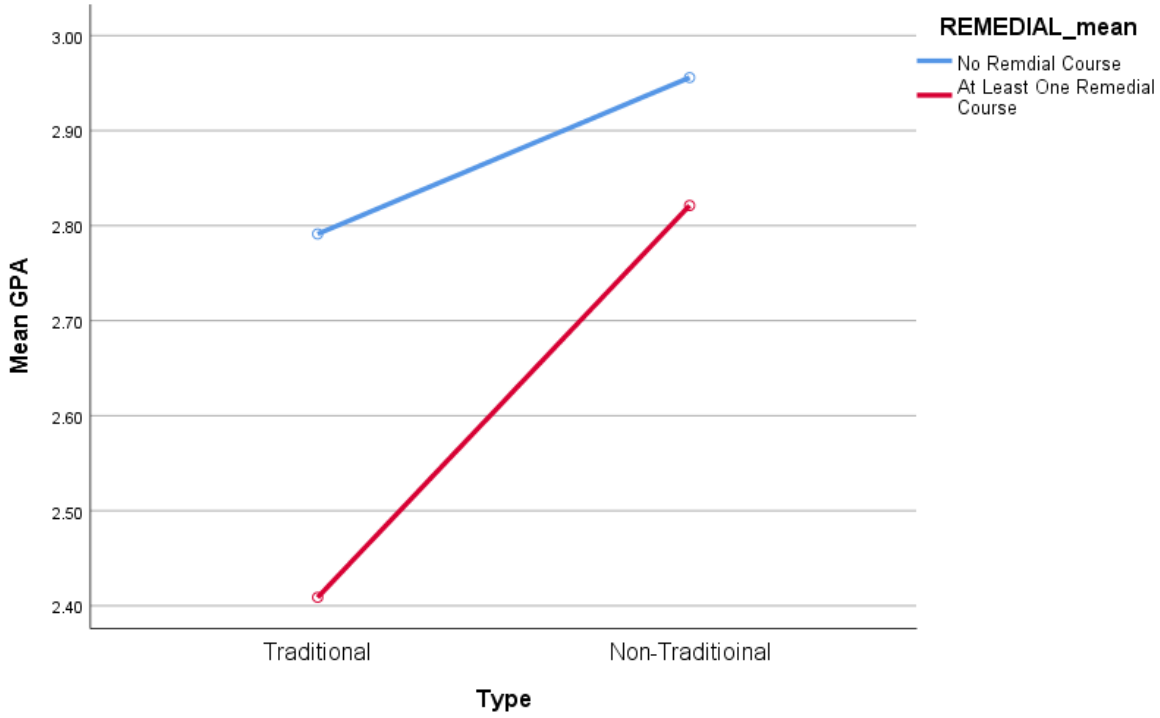
Source	Sum of Squares	Df	Mean Square	F	Sig,	Partial Eta Squared
Remedial/Non-Remedial	44.333	1	44.333	34.433	.000	.012
Traditional/Non-Traditional	55.178	1	55.178	42.856	.000	.015
Interaction	10.187	1	10.187	7.912	.005	.003
Error	3602.499	2798	1.288			

As shown in Table 4.3 and 4.4, students who took at least one remedial course had a significantly lower GPA than students who did not take a remedial course. In addition, traditional

students had a lower GPA than non-traditional students. It should be mentioned that while previous research supports the fact that students taking a remediation course generally have a lower GPA, these data have contradicted previous research by showing that the non-traditional student had a higher GPA then traditional students across both findings. Finally, there is a significant interaction. A graph of the interaction is presented in Figure 4.1

Figure 4.1

Interaction Between Remedial Course and Type of Student



As shown in Figure 4.1, while students who did not take a remedial course have higher GPAs for both traditional and non-traditional students, the difference is much smaller for non-traditional students. It should be mentioned, however, that the effect sizes are small.

Retention

For the purposes of this study, retention was defined as any student who took a course in fall 2017 and returned to take a course in spring 2018. The percentage of each group that was retained or not retained is presented in Table 4.5.

Table 4.5

Means and Standard Deviations for Retention

Group	Mean	Standard Deviation	N
No Remedial Course:	.		
Traditional	.812	.39	383
Non-Traditional	.756	.43	234
At Least One Remedial Course:			
Traditional	.767	.43	234
Non-Traditional	.763	.42	439

The ANOVA summary table is presented in Table 4.6.

Table 4.6

ANOVA Summary Table for Retention

Source	Sum of Squares	Df	Mean Square	F	Sig,	Partial Eta Squared
Remedial/Non-Remedial	.131	1	.131	1.82	.177	.001
Traditional/Non-Traditional	.318	1	.318	.752	.386	.000
Interaction	.239	1	.239	1.37	.242	.001
Error	269.922					

As shown in Table 4.6 there is no difference in retention as a function of either taking a remedial course or being a non-traditional student.

Research Question # 2:

How do traditional and non-traditional students differ in terms of demographic variables such as race and sex?

The data for this question were derived from a questionnaire that was sent to all students who were in one of the programs in Health Sciences. As described in Chapter 3, there were 244 usable surveys available for data analysis. As a reminder, in this set of analyses a non-traditional student is defined as someone who self-identified themselves that way. The specific question asked was: How would you describe your student status at Deer Park Community College, Traditional or Non-Traditional? Descriptive data on these students are presented below. Not all the questions included in the questionnaire are presented below. The complete set of responses is presented in Appendix A. The sample sizes for these tables will not always total 244 since some students left some of the questions blank.

Table 4.7

Gender of Respondents

Gender	Frequency	Percent of Sample
Female	220	90.2%
Male	24	9.8%

Table 4.8

Race of Respondents

Race	Frequency	Percent of Sample
African American	14	5.9%
Asian	9	3.8%
Hispanic	21	8.8%
White	195	81.6%%

Table 4.9

Age of Students

Age	Frequency	Percent of Sample
Less than 20	11	4.49%
20 – 21	38	15.5%
22 – 23	26	10.6%
24 – 25	30	12.2%
26 – 27	20	8.2%
28-29	11	4.5%
30 – 35	52	21.2%
36 – 40	29	11.8%
41 – 45	11	4.5%
46 – 50	10	4.1%
51 and Over	7	2.8%

The mean age for the sample was 29.70 and the range was 19 – 60.

Table 4.10

Education of Students

Education	Frequency	Percent of Sample
GED	8	2.8%
High School Graduate	133	54.5%
Associate Degree	41	16.8%
Certificate	30	12.3%
Bachelor's Degree	25	10.2%
Graduate Degree	4	1.6%
None of the Above	3	1.2%

Table 4.11

Spouse/Parent's Level of Education

Education	Frequency	Percent of Sample
GED	4	1.7%
High School Graduate	74	31.1%
Associate Degree	17	7.1%
Certificate	14	5.9%
Bachelor's Degree	43	18.1%
Graduate Degree	15	6.3%
None of the Above	71	29.8%

Table 4.12

Total Family Income During the Last Year

Income	Frequency	Percent of Sample
Less than 20,000	34	14.2%
20,000 – 39,999	42	17.2%
40,000 – 59,999	36	15.1%
60,000 – 79,999	41	17.2%
80,000 – 99,999	30	12.6%
100,000 – 119,00	24	10.0%
120,000 – 139,000	11	4.6%
140,000 – 159,000	6	2.5%
160,000 – 179,000	7	2.9%
180,000 +	9	3.8%

Table 4.13

First-Generation Status

First Person in Family to Attend College?	Frequency	Percent of Sample
No	160	65.8%
Yes	83	34.2%

Table 4.14

Adults Living in Household

Number of Adults in Household	Frequency	Percent of Sample
1	36	14.9%
2	101	41.7%
3	52	21.5%
4	36	14.9%
5	9	3.7%
6 or more	8	3.2

The mean for the number of adults in the household was 2.65 with a range of 1 to 9.

Table 4.15

Parental Status

Are you a parent	Frequency	Percent of Sample
Yes	99	40.7%
No	144	59.3%

Table 4.16

Children Living in Household

Children in Household	Frequency	Percent of Sample
0	148	60.7%
1	36	14.8%
2	36	14.8%
3	18	7.4%
4	5	2.1%
5	1	.1%

As shown in Tables 4.7 to 4.16, the respondents who returned the questionnaire were primarily white females who are approximately 30 years old. Both the respondents and their parents are mostly high school graduates although there is a fairly large range of educational experiences. Over 60% report that their household income is $80,000 per year or less, with slightly over 14% indicating that family income is $20,000 per year or less. As shown in Table 4.13 almost 66% indicate that they are not the first in their family to attend college.

There were several other questions included in the questionnaire. The complete set of responses to these questions is contained in Appendix A. The following is a brief summary of the more important of these questions:

- Most of the respondents are in either the nursing or radiology program.
- The biggest challenge they perceive about attending the community college was the financial cost, followed by home obligations.
- While there was some negative feedback, in general the students were positive about the results of the placement tests given at admission and agreed with the policy of requiring these tests.

Statistical Analyses for the Second Research Question

As presented above, the second research question asks if there are any demographic differences between traditional and non-traditional students. When answering the first research question, the distinction between traditional and non-traditional was based on the student's age since there was no other way to make this distinction in that data set. As mentioned above, for this question, the distinction was made based on a specific question in the questionnaire which was: Do you consider yourself a traditional or a non-traditional student? There were 197 students who answered this question with 80 indicating that they perceived themselves to be a traditional student and 117 indicating that they were a non-traditional student. All of the analyses in this section of Chapter 4 use that self-perception as the between subject's variable. All of the analyses were either chi squares or t-tests. For significant results, both the probability and the effect size are reported. To simplify the presentation, no data will be presented for non-significant results.

Gender: Not Significant

Age: Significant

Table 4.17

Means and Standard Deviations for Age

Type of Student	Mean	Standard Deviation	t-test	Sig.	Partial Eta Squared
Traditional Student	25.51	6.99	6.62	.000	.108
Non-Traditional	36.63	9.32			

As would be expected, non-traditional students are older with a large effect size.

Table 4.18

Chi Square for Race

Race	Traditional	Non-Traditional
African American	9 (69.2%)	4 (30.8%)
Asian	7 (77.8%	2 (22.2%)
Hispanic	8 (47.1%)	9 (52.9%)
White	59 35.3%	108 (64.7%)

Chi Square = 12.832, p = .003, Cramer's V = .115

As shown in Table 4.18, there is a significant effect for race with Whites and Hispanics describing themselves as non-traditional more than African American or Asian students. It should be mentioned that this analysis is somewhat questionable because of the small number of non-white students.

Table 4.19

Chi Square for English as the Native Language

Is English your native language?	Traditional	Non-Traditional
No	15 (60.0%)	10 (40.0%)
Yes	69 (38.1%)	122 (59.2%)

Chi Square = 4.354, p = .037

As shown in Table 4.19, non-traditional students more typically report that English is their native language.

First person in the family to attend college**:** Not Significant

Education

To make this analysis meaningful, the various categories were recorded into two groups: Less than a bachelor's degree and bachelor's or graduate degree. "None of the Above" was treated as missing since it is not clear what this means.

Table 4.20

Chi Square for Education

Highest level of Education?	Traditional	Non-Traditional
Less than a bachelor's degree	79 (94.0%)	97 (80.8%)
Bachelor's or Graduate Degree	5 6.0%)	23 (19.2%)

Chi Square = 7.286, p = .007, Cramer's V = .189

Non-traditional students have higher levels of education.

Parents' Highest level of education: Not significant

Table 4.20

Chi Square for Spouse's Education

Highest level of Education?	Traditional	Non-Traditional
Less than a bachelor's degree	36 (73.5%)	51 (56.0%)
Bachelor's or Graduate Degree	13 (26.5%)	40 44.0%)

Chi Square = 4.111, p = .043, Cramer's V = .171

As before, the spouses of non-traditional students have higher levels of education.

Family Income

The distribution of family income for traditional and non-traditional students is presented in Table 4.21.

Table 4.21

Means and Standard Deviations for Family Income

	Traditional	Non-Traditional
Less than $20,000	16	12
	(19.0%)	(9.8%)
$20,000 – $39,999	11	21
	(13.1%)	(17.2%)
$40,000 - $59,000	8	20
	(9.5%)	(16.4%)
$60,000 - $79,999	20	19
	(23.8%)	(15.6%)
$80,000 – $99,999	12	15
	(14.3%)	(12.3%)
$100,000 - $119,000	7	12
	(8.3%)	(9.8%)
$120,000 - $139,999	3	8
	(3.6%)	(6.6%)
$140,000 - $159,000	1	3
	(1.2%)	(2.5%)
$160,000 - $179,999	3	2
	(3.6%)	(1.6%)
$180,000 or More	0	9
	(0.0%)	(7.4%)
Missing	3	1
	(3.6%)	(.8%)

Chi square = 20.835, p = .022, Cramer's V = .292

As shown in Table 4.21, non-traditional students report slightly higher levels of family income. More specifically, 27.9% of non-traditional students report family incomes of $100,000 per year or more, while only 16.7% of traditional students report this income. It is also interesting that none of the traditional students report family incomes of more than $180,00 per year.

Adults in the Household

Table 4.22

Means and Standard Deviations for Adults in the Household

Type of Student	Mean	Standard Deviation	t-test	Sig.	Partial Eta Squared
Traditional Student	3.15	1.67	4.37	.000	.078
Non-Traditional	2.33	1.04			

Non-traditional students have fewer adults in their household.

Children in household: Not Significant

Children not in household: Not significant

Dependents: Not significant

Employment Status: Significant

To analyze employment status the variable was changed into three groups: Full-Time; Part-Time and Everything Else.

Table 4.23

Chi Square for Employment Status

Highest level of Employment?	Traditional	Non-Traditional
Full-Time Employment	16 (19.0%)	47 (38.5%)
Part-Time Employment	46 (54.8%)	36 (29.5%)
All Else	22 (26.2%)	39 (29.6%)

Chi Square = 14.702, p = .001, Cramer's V = .267

As shown in Table 4.23, Non-Traditional students are employed full-time more than traditional students but employed less on a part-time basis.

Table 4.24

First In Family to Attend College

	Non-Traditional	Traditional
First in Family	79 (56.8%)	60 (43.2%)
Not First in Family	43 (64.2%)	24 (35.8%)

As shown in Table 4.24, of those who are the first in their family to attend college, 56.8% said they were non-traditional and 43.2% said they were traditional. This is close to a 50-50 split.

Table. 4.25

Expectations from Literature Verse Actual Results

Variable	Expectations from Literature	Actual Results
GPA and Remedial Course(s) Required	Students who are required to take remedial courses will have lower GPAs	Supported- students who were required to take remedial course(s) had significantly lower GPAs
GPA and Traditional/Non-traditional	Non-traditional students should have lower GPAs	Non-traditional students had higher GPAs
Retention and Remedial Course(s) Required	Students who are required to take remedial courses will have lower retention	Not supported- difference is not significant
Retention and Traditional/Nontraditional	Nontraditional students have lower retention	Not-supported- difference is not significant
Race	Nontraditional students are more typically minorities	A higher proportion of nontraditional students are white
Income	Nontraditional students have lower incomes	Nontraditional students have higher incomes.

As shown in Table 4.25 the results from these data varied from some of the literature research. While students who reported taking a remediation course did have a significantly lower GPA, retention rates were not affected. Non-traditional students had higher GPA's than traditional students in two categories which included students who needed to take a remediation course and students who did not need to complete remediation courses. White students self-reported as non-traditional students at a higher rate than minority students. Lasty, non-traditional students reported higher incomes than traditional students.

Questions at End of Survey

There were several questions included at the end of the survey asking the respondents about their experience with and impressions of remedial courses at Deer Park Community College. These questions are:

- In general, how well do you feel that your high school prepared you to do college work?
- How satisfied were you with the results of your Deer Park placement test?
- Did your placement test indicate you need remediation in English or Math?
- How many remediation courses have you taken due to placement test scores?
- How many remediation math courses do you estimate having to complete before you can start program required math?
- How many remediation English or Writing courses do you estimate having to complete before you can start program required English?
- How many ESL courses have you taken at Deer Park?

- Do you agree with the policy of the institution to require completion of remediation course work before you can begin your degree requirements?

- What is the likelihood that you will change your major due to having to take remediation courses at Deer Park?

- What is the likelihood that you will withdraw from Deer Park due to having to take remediation courses at Deer Park?

- How well do you feel remediation and ESL courses prepared you for college level work here at Deer Park?

- Would you recommend any of the remediation credit courses you took at Deer Park to other students?

- How often do you feel in control of your own academic destiny at Deer Park?

. There were no significant differences on any of these questions comparing traditional to non-traditional students. The responses to these questions for the two groups are presented in Appendix D. In general, the respondents are moderately positive about the remediation courses with most of the means for the 5-point Likert evaluative questions in the 3.5 to 4 range. Although there were not significant differences there were some interesting findings from these questions. First both groups were satisfied with their high school preparedness experience. Second both groups were satisfied for the most part with the college's placement test results even if they were used to determine a need for remediation courses. Next both traditional and non-traditional students responded they would not withdraw from the institution based on the need to take remediation courses. This reaffirms Deer Park institutional data which stated that taking remediation courses and being either traditional or non-traditional did not affect retention in the Health Science program. As a minor observation I was intrigued to find that the majority of

students from both groups felt in control of their academic destiny. I see this as an interesting finding although it did not lend to my main research questions. It showed that most students did not feel forced into the courses they took. Although the remediation courses may be recommended, the students responded favorably when asked about them.

Conclusion

Chapter four constitutes the research findings. Two major research questions were focused on in the findings. The research questions were answered using two methods of data collection including a survey and data from the community college. In the next chapter, I discuss the research results, the limitations of the study, recommendations, and conclusions.

CHAPTER 5

DISCUSSION

Purpose of the Study

The purpose of this study was to compare traditional and non-traditional students who are enrolled in a health science program at a community college. As noted in Chapter 2, many incoming community college students are unprepared academically for college level study (Ran & Lin, 2022). Consequently, many students must take one or more remedial courses to prepare them for college-level work. Students who must take these remedial courses often perform less well in subsequent courses and are more likely to not be retained. Chapter 2 also discussed the non-traditional student and noted the barriers that these students sometimes encounter in college. This chapter includes a discussion of major findings related to Adult Learning Theory, Figueroa's Framework, the education gap, the use of remediation courses and numerous student variables that affect enrollment into health sciences programs. These theories were referenced to inform the research questions and lay the foundation to interpret the results shown in Chapter 4.

Adult Learning Theory was a theme that ran through the research in order to establish a broad perspective of both congruence and comparison between the non-traditional and traditional student. The five key concepts that govern Knowles, Adult Learning Theory were, self-concept, adult learner experience, readiness to learn, orientation to learning and lastly internal motivation to learn. The students self-identified in research question #2 which asked How do traditional and non-traditional students differ in terms of demographic variables such as race and sex? Some of the results gathered may be due to the idea of adult learners ability to self-conceptualize and their readiness to learn. They saw themselves as non-traditional because at some point they did not fit the typical traditional college student mold. Their demographics may have been different as well as their motivation to learn which is an adults internal motivation, Knowles discusses this possibility as a link to adult learners success by not being pressured by outside forces such as parents.

Figueroa's framework was also a theory that is constructed over five separate levels, individual, interpersonal, institutional, structural, and cultural. Although Figueroa's framework is not traditionally looked upon as educational theory like Adult Learning Theory, I saw a connection to the Health Science student almost instantly. When the different levels of Figueroa's framework were broken down, I started to see an emerging theme of self and institutional awareness that the non-traditional and traditional student may experience very differently. I compared Figueroa's theory to the various levels of change Health Science students go through before they gain a sense of academic control and feel stable in a program. Health Science students are essentially learning a new language when they start a program such as Radiography. Figueroa talks about the individual as a learner, in Health Science we are testing the individual from day one to see if they will be able to function in a didactic and clinical setting. Figueroa speaks of institutional and structural concepts. These concepts are seen in the clinical learning environment. Students are made to navigate both the college experience quickly as well as program policies and clinical procedure rules. Through the framework of Figueroa, the mindset and structure of what both traditional and non-traditional students go through in a Health Science program is shown.

Culturally the data displayed vast differences in what traditional literature speaks of regarding the non-traditional student in comparison to the traditional student. If we look at this through the lens of both Figueroa's Framework and Knowles Adult Learning Theory, we see a deeper connection of self-reflection and perspective that the non-traditional student has gained, this may have contributed to the fact that the non-traditional students GPA was higher than the traditional student in both areas measured in this study, students who needed to take remediation courses and students who did not need remediation courses.

The instruments used in collection of the data discussed in Chapter 3 and analyzed further below were a survey that was distributed through Survey Monkey used to collect data from the currently enrolled students. In addition, aggregated data from the institutional research office at Deer Park Community College was used to test the theory that less non-traditional remediation

students enrolled in health sciences programs than traditional students who did not need remediation courses. The survey also gives Deer Park a better picture of who the non-traditional student is. The participants were current health science students from Deer Park Community College. Some variables that were explored such as number of remediation courses taken, sex, age, whether or not the student has dependents such as children or elderly parents, and race of student among other variables mentioned in the survey have been analyzed in Chapter 4 and will be summarized through further discussion throughout this chapter. This chapter concludes with a discussion of limitations of the study, areas for future research and a brief summary.

Two major questions were explored throughout the research: (1) To what extent does being a traditional or non-traditional student taking remediation courses affect GPA and/ or retention? and (2) How do traditional and non-traditional students differ in terms of demographic variables such as race and sex?

Summary of Findings Research Question #1

The information used to answer the first research question was derived from archived data located in the institutional research office at the community college. The question asked to what extent does being a traditional or non-traditional student taking remediation courses affect GPA or retention. The data presented in Table 4.3 and 4.4 indicated that students who took at least one remedial course had a significantly lower GPA than students who did not need a remediation course. The results also showed that traditional students had a significantly lower GPA than non-traditional students. What is perhaps most interesting about these results is that they both support and contradict previous research. The finding concerning students who must take a remediation course is consistent with the literature. Chapter 2 presented a series of studies that indicate that students who must take remedial courses have difficulty in subsequent courses and often are not retained. The literature presented in Chapter 2 also demonstrated that the barriers non-traditional students face can have a negative effect on their academic outcomes. This result was not replicated in this study since non-traditional students had a significantly higher

GPA. In addition to the results for GPA, the results indicated that there was no difference in retention for students who did or did not take a remedial course nor was there a difference in retention between traditional and non-traditional students.

The explanation for both of these findings might come from Adult Learning Theory. This theory suggests that the non-traditional student's greater academic success as shown by their higher cumulative GPA might stem from a more developed sense of self-concept. As Knowles points out (1984), the non-traditional student is older, more mature, and more self-directed. According to the previous research done at the National Center for Adult Literacy and Learning, there is a substantial education gap for adult learners due to lack of equity through primary education and high school and the pace at which younger learners absorb information (Strucker & Davidson, 2003). Despite this gap, in this study the non-traditional student did better in two measured categories than the traditional student. The non-traditional student had better academic success when completing remediation courses and had a higher GPA. Figueroa's Framework was referenced for its unique ability to categorize barriers in higher education. Three of these barriers are institutional, cultural, and structural (Figueroa, 2010). The results from this research demonstrate that at this community college the non-traditional student is finding a way to overcome these barriers. This is also demonstrated by the fact that non-traditional students were retained at the same level as traditional students.

Summary of Findings Research Question #2

The second research question was answered using a questionnaire which derived demographic data about the subset of health science students who chose to respond to the survey. Previous research indicates a lack of historical knowledge about these student groups. Allied health programs have been seeking a diverse student body to introduce to the workforce. The question asked how do traditional and non-traditional students differ in terms of demographic variables such as gender or race? The data to answer this research question were collected from an original survey distributed through survey monkey to students in the community college's

health science department. Two hundred forty-four surveys were returned. In general, the respondents were primarily white females approximately 30 years of age with a household income of 80,000 a year or less. As a reminder, the distinction between the traditional and non-traditional student came from the student's self-perception. For those who returned the survey and answered the question, 117 indicated that they were non-traditional while 80 indicated that they perceived themselves to be traditional.

The following is a summary of the findings comparing the traditional and non-traditional students-- non-traditional students compared to traditional students:

- Are white
- Speak English as their native language
- Have less than a bachelor's degree
- Have spouses with less than a bachelor's degree
- Have higher average family incomes
- Have less adults living in the home
- Are less likely to be working part-time

As before, the list above is both consistent and inconsistent with previous research. As defined in Chapter 2, a non-traditional student is defined by one or more of the following characteristics: as a student over the age of 25, a student who completed a GED instead of graduating from high school, a first-generation college student, a student with dependents, a veteran, or a student who has been out of high school for more than five years (National Center for Education Statistics, 2022). With this definition in mind, it is evident that some of the characteristics listed above would be expected (for example, having less than a bachelor's degree), while several would not be expected (higher incomes and less typically a minority). Also, as shown in Table 4.24 and 4.25, some of the students who considered themselves to be non-traditional are 25 years or less and are not the first in their family to attend college.

In my experience I have found that the Health Science students at Deer Park identify as non-traditional based upon age, financial responsibility and working to support a family while in school. I speculate that the main reason for selecting nontraditional as a survey response was age. However, I wanted to give the students a chance to identify themselves as traditional or non-traditional due to the complex nature of what a non-traditional student is. Most students replied that they were over 25. This is a good indicator of why the data found that the average age of the students who self-identified as non-traditional was more than 35 years old. I believe this to be accurate because the Health Science programs generally require up to two years of prerequisite courses before a student may apply to a core specialty such as Radiography or Nursing. This commitment is not taken lightly by students and the programs are extremely competitive. Finances are another reason I found both in speaking with students as an advisor and in the data. The data state that the average non-traditional student's income was 80,000 a year or less. The students also mentioned responsibilities at home with children. The data showed that roughly 40% of students had at least one child living in their household that they claimed parentage of. As an advisor many students have shown interest in Health Science programs because they claimed they were an older student and wanted a career that allowed them to maintain a family life while making a better income. For these reasons listed above, I believe the data showed the responses that were produced.

Limitations

There were limitations to this research which are stated below. First, only one higher education institution was studied. This limits the findings to this institution which reduces the external validity of the study. Secondly, the sample only included students who are in the Health Sciences department. This was the intention of this study. However, if more departments were involved the data may have shown different outcomes. Third, the survey was distributed and collected over one academic semester online and the research was dependent on responses in order to gather data. Any survey depends on the respondents answering honestly so this

limitation is common to all survey research. In this case, the validity of the self-perception of being non-traditional cannot be known and represents one of the major limitations of the research. Readily available data sets were collected from the institutional research office in the same semester.

While I still believe that quantitative research was the right choice for this study, qualitative research tools, such as interviews, and focus groups could be a viable option in furthering research. More revelation could be given to this study if coupled with qualitative research. For example, interviews may have given the research a deeper perspective into how students felt about being made to take remediation courses before they were permitted to register for degree-based courses. These students could have been asked another set of questions to follow up the survey questions through interviews which may have given the research the depth of student perspective. Another question that I could have asked during the interview would be: Why did you choose to categorize yourself as traditional or non-traditional and what does that definition mean to your identity as an academic learner? This would allow an investigation into why the student's self-identification is consistent or inconsistent with what is considered non-traditional.

Recommendations for Future Research

Several areas for future research on targeted demographics could add to the findings if a qualitative study could be developed to understand what role being a remediation student plays in academic success in the classroom. The results of the quantitative study show that the GPA was lower for both non-traditional and traditional remediation students. A qualitative study could follow up on the data this study provided by separating non-traditional and traditional remediation students into two focus groups. Once separated the different strategies these students use could be explored. One explanation provided above for the fact that non-traditional students had higher GPAs was that they had more stable self-concepts. The validity of this argument could be augmented through interviews or focus groups.

Another direction that future research could take is to change the student sample. In this study the students came from the population of Deer Park Community College students, who had declared Health Sciences as a major. Future research could change the program of interest to sample students from the English department instead of Health Science while maintaining the same research questions. The research should produce an interesting result especially when considering English is one of the top categories for remediation.

Another direction that could enhance research would be to change the population. If the data were gathered at a 4-year school instead of a 2-year school this may allow for a greater diversified group of students in age, gender, and race. This could change the responses of the students and expand the literature on remediation and the non-traditional student. One last limitation was available archived data. I was limited by what Institutional Research was able to access and the time by which to complete the research due to dissertation time allowability. A study could be done on a larger scale to encompass five to ten years of research and study if the education gap is being improved upon or getting worse in the county by assessing how many students need remediation before entering Health Science programs.

Recommendations

The data in Table 4.2 showed that 44% of the students at Deer Park Community College were classified as non-traditional since they were more than 25 years old. Since the non-traditional student is older, there are likely to be more obligations that they have due to work and family responsibilities. It follows from this that one of the ways to help these students is to create more courses and credentials that are accessible to them. This may be achieved through the availability of a course at night or online so that students may still be able to work and care for their household while completing their program. Past research suggests that higher education institutions must support non-traditional students with online learning options (Bell, 2022). Another idea is to create health science programs that are completely weekend based. This does not exist at the college in question currently. In the process of my research, many non-traditional

students I advise have asked for this option due to be head of household and working during the week. The data in Table 4.23 suggest that 38.5% of non-traditional students work full time, 29.5% work part time, and 29.6% were either self-employed or unemployed. Creating full degree programs that can be a hybrid weekend-based program would allow more non-traditional students a balanced home, work, school life.

Creating more accessible programs is one way to focus on projects and resources that remake the higher education system into a more adult friendly learning environment. Using the research from my study, the administration can see the percentage of students in just one program that are non-traditional. They can also see how many students identified themselves as non-traditional. According to the data 31.4% of students' total family income was under $39,999 a year. A focus on allocating funds toward both traditional and non-traditional students through scholarships and grants may also take away the need of the student to work as many hours as possible to support themselves and their families.

Retaining these students may be better achieved by changing the way in which the college fulfills remediation requirements. According to the results the students' GPA that was most affected by remediation was the traditional student or student who was 25 and younger who needed one or more remediation courses. Using my data, the college could extend upon my research and gage if an overall change to the remediation courses is necessary to increase GPA.

One option I am particularly interested in is creating corequisite remediation courses. I believe this would change the way the traditional student population achieves success in the course and boost self-esteem as they begin their academic work. In a corequisite remediation course a student registers for their regular college course and then pairs it with an additional 1 to 3 noncredit hours of developmental learning in the course subject they need. This would allow the younger students to dive right into their academic programs and avoid the waiting period of completion of non-credit courses. My prediction is this would help in retention because financial

aid would be available to the credit college courses the student begins to take. Ran (2020) states:

> Our study confirmed earlier research showing that corequisite remediation results in much higher gateway pass rates than traditional prerequisite remediation. For students on the margin of the college readiness threshold, those placed into corequisite remediation were 15 percentage points more likely to pass gateway math and 13 percentage points more likely to pass gateway English within one year of enrollment than similar students placed into prerequisite remediation. That is nearly a 50% improvement for math and more than a 20% improvement for English. (p2)

Corequisite courses may offer better support to students through smaller class sizes and alleviating the student's fear of a stigma that they are not as capable as their peers. These courses would also offer opportunities for student centered and peer learning opportunities. These methods of education become particularly valuable in health science programs where students are often asked to cooperate with multiple people including instructors, clinical peers, clinical administrators, and classmates just to name a few.

A Personal Reflection of the Research

Health Science students are unique. Health Science students often have clinical and didactic courses intersecting throughout academic programs. These students are chosen for their programs based primarily on their prerequisite academic GPA. Once the students are accepted to a program such as Radiography, Ultrasound or Nursing the students must maintain a B average throughout the duration of their specific course track. In the Radiography program we offer just 23 seats a year and we receive on average 100 applicants. The knowledge of completing prerequisite courses quickly and successfully adds stress to an already vigorous first two years.

It is this fact that made me so curious about remediation, GPA, retention, the education gap and who demographically our students are. I wanted to know do we have the traditional under 25-year-old student or do our students tend to be more non-traditional. I distinctly remember sitting in a faculty development meeting at the beginning of the fall semester in 2016. We had a speaker who was talking about diversifying programs and recruiting students of various backgrounds. I remember multiple faculty members explaining that there is no recruitment

budget, and we cannot offer these potential students' scholarships that compare to universities. While there may have been some truth to this, it sounded like a set of excuses rather than a plan of action. I just sat there listening and wondering how many of these professors even know who their students are. I decided on that day that I would be different and that I wanted to know who was in my program, who was behind the academic curve and needed help of some form. I wanted to know the demographic composition of my students' background. It all started to come together when I began faculty advising.

I had a variety of students come in for advising appointments; some were Health Science students already accepted into the programs they wanted. The majority of the students, however, were students who were trying to gain acceptance into these programs. Some had applied and had not gotten in while others were getting ready to apply; some were at the beginning of the journey taking remedial courses or prerequisite courses. I started to think about the small differences between students when it came to their Health Science GPA. I am a faculty advisor so I am able to view the students' academic record in order to see which classes they have completed and which they need to finish before they can apply to a Health Science program. Throughout this research I was able to take a closer look at the differences between the Health Science students at Deer Park Community College. I started to notice a pattern and knew I needed to research deeper in order to confirm what I was perceiving. The students who were in remediation courses had lower grades than those who started in college credit courses. It was surprising since the remedial courses were supposed to help student's close gaps in their education usually in Math and English. Here was the birthplace of my first research question. I wanted to take it a step further and not only look at the connection between remediation and GPA but also if the student was traditional or non-traditional. I started to notice a change in the age of students I would see in my own classes. I noticed that there was an increasing number of students who were 25 and over or who were working adults or career changers. This was interesting to me because I felt like the college wasn't noticing this change in its student

population. I went to more faculty development and heard speech after speech on recruitment and retention which excluded the non-traditional student. I knew further research was needed and I am so glad I did it. Remediation and its effects on GPA weren't being looked at by the institutional research office. The students who took at least one remediation course had a lower GPA in both the traditional and non-traditional groups. However, a surprising finding was that the non-traditional students who did need to take a remediation course had a higher GPA than traditional students who needed to take a remedial course. The non-traditional students outscored the traditional students in the category of no remedial course as well. Retention was not affected by either student group needing to take a remediation course.

Once my results showed me about GPA, I wanted to know more about these students and if they saw themselves as traditional or non-traditional. I wanted to find out who our health science student population was comprised of. It was difficult to judge this based on my own classroom, so a survey was the best way to go. The school was very supportive in my search for this information and is eager for me to share my results.

The survey found that most respondents who returned the questionnaire were primarily white females who were 30 years old on average. This is a clear picture of the main demographic group in Health Science and that population falls under the non-traditional student based on age. Out of 244 respondents, 220 were female and 24 were male. When it came to race and whether the student saw themselves as traditional or non-traditional, White, and Hispanic students were more likely to see themselves as non-traditional while African American and Asian students were more than likely to see themselves as traditional. It should be mentioned that more than half of the students that responded to the survey identified as White.

As I have shown in the results, non-traditional students have significantly higher GPAs than traditional students at the institution where these data were collected. While this is encouraging, it is still the fact that non-traditional students face many barriers. In my opinion a

greater support system for non-traditional students should be implemented at Deer Park Community College. There are many things that the administration could do to help ease some of the burdens non-traditional students face. One example of this is nursing pods. Last semester a radiography student had nowhere to pump. She came to the faculty and explained this problem. I immediately offered her my office because it was secure with a locked door. I asked the administration: where is the nursing room or pumping room for mothers? They responded by telling me that the student can use the bathroom, or we can try to find them an unused office. The Administrator and I both decided that the bathroom wasn't going to work because, in order for the student to use a bathroom she would have to pump standing up at the counter so that she could plug her machine in. This would be uncomfortable and offer her little privacy because the bathroom had multiple stalls. I was told they would look into nursing pods and that this is the first time they have had a request. I found this encouraging because it shows signs of possible change regarding the non-traditional student.

Administration could help these students financially by offering them scholarships and grant opportunities that do not discriminate against their age or financial status. Brody (2018) states that often non-traditional students are forced to take out loans in order to pay for student bills due to the lack of other financial aid options available to them.

Lastly, administration could help these students by offering a more flexible schedule to balance their work, their school, and their home life. The data showed that 38.5% of non-traditional students work full-time. The Health Science programs require a minimum of 15 credits a semester and include a non-paid clinical rotation anywhere from two to four days per week. Barrington (2023) states that non-traditional students face many struggles; among them is managing finances and family life during full time academic programs.

There are many ways this research can be used to make improvements at the college and for the Health Science students. Remediation, GPA, retention, and the education gap will

always be concerns of faculty and students. However, as long as there is research like mine and others to shine a light on student populations more solutions to these concerns will follow.

REFERENCES

American Council on Education. (2006). ACE maintains a Center for Lifelong Learning and conducts a project on Improving Lives: Ensuring the Academic Success of Low-Income Adults, Retrieved from: acenet.edu.

Arendale, D.R. (2011) Then and Now: The early years of developmental education. *Research and Teaching in Development Education,* 58-76.

Ansell, S. (2011,). Achievement Gap. Education Week. Retrieved Month Day, Year from http://www.edweek.org/ew/issues/achievement-gap/

Astin, A., & Oseguera., L. (2004). Project Muse: The Declining Equity of American Higher Education. The Review of Higher Education, 27(3), 321-341.

Attewell, P., Lavin, D., Domina, T., & Levey, T. (2006). New Evidence on College Remediation. The Journal of Higher Education, 77(5), 886–924. http://www.jstor.org/stable/3838791

Barnett, R., & Jackson, N., (2019). Ecologies for Learning and Practice: Emerging Ideas, Sightings, and Possibilities Published by: Routledge, Nov 6, 2019

Barrington, K., (2023). The Top Challenges for Non-Traditional Students in Community College. Retrieved from: https://www.communitycollegereview.com/blog/the-top-challenges-for-non-traditional-students-in-community-college

Barshay, J., (2018, February). How to help students avoid the remedial Ed trap. Column, Retrieved from: https://hechingerreport.org/help-students-avoid-remedial-ed-trap/

Batiste, H., Denby, R., & Brinson, J. (2022). Cross-cultural mentoring in higher education: the use of a cultural identity development model. *Mentoring & Tutoring: Partnership in*

Learning, *30*(4), 409-433.

Bell, A., (2022) 3 ways to improve the non-traditional student experience: Higher-ed leaders. must continue to find ways to support online learners and non-traditional students--a crucial demographic of learners, September 23, 2022

Bensimon, E. M. (2005). Closing the achievement gap in higher education: An organizational learning perspective. New Directions in Higher Education, 131, 99-111.

Bensimon, E. M. & Malcolm, L. (2012). Confronting Equity Issues on Campus: Implementing the Equity Scorecard in Theory and Practice. Retrieved from https://eric.ed.gov/?id=ED530596

Bettinger, E. & Long, B. (2004), Shape Up or Ship Out: The Effects of Remediation on Students at Four-Year Colleges, No 10369, NBER Working Papers, National Bureau of Economic Research, Inc

Chen, J. C. (2014). Teaching nontraditional adult students: Adult learning theories in practice. Teaching in Higher Education, 19, 406-418.

Chen, J. C. (2017). Nontraditional Adult Learners: The Neglected Diversity in Postsecondary Education. *SAGE Open*, *7*(1). https://doi.org/10.1177/2158244017697161

Choy, S. (2002). Non-traditional undergraduates. National Center for Educational Statistics. Washington D.C. U.S. Department of Education. Retrieved from http://nces.ed.gov/pubs2002/2002012.pdf

Clowes, D. (1980). More than a Definitional Problem: Remedial, Compensatory, and Developmental Education. Journal of Developmental & Remedial Education, v4 n1 p8-10 Fall 1980. Retrieved from: https://eric.ed.gov/?id=EJ244401

Coleman L. (2008). Experiences of African American students in a predominantly white, two-year

nursing program. Journal of the National Black Nurses Association. 2008;19(1):8–13.

Complete College America (2012). http://www.completecollege.org

Contreras, F.E., & Malcom, L.E., & Bensimon, E.M. (2008). Hispanic-serving institutions. Closeted Identity and the Production of Equitable Outcomes for Latino/a Students, 11, 90-111.

Creswell, J. W., & Creswell, J. D. (2018). Research design (5th ed.). SAGE Publications.

Cross, K.F. (1982). Adults as learners. Washington, D. C: Jossey-Bass.

Cruce, T. M., & Hillman, N. W. (2012). Preparing for the silver tsunami: The demand for higher education among older adults. Research in Higher Education, 53, 593-613.

Eckel, P. D. (2008). Mission diversity and the tension between prestige and effectiveness: An overview of US higher education. Higher Education Policy, (21), 175-192.

Eppler, M.A. & Carsen-Plentl, C. & Harju, B.L.. (2000). Achievement Goals, Failure Attributions, and Academic Performance in Nontraditional and Traditional College Students. Journal of Social Behavior and Personality. 15. 353-372.

Erikson, E. H. (1968). Identity: Youth and crisis. New York, NY: W.W. Norton.

Erisman,W., & Steele, P. (2012). From Contact to Completion: Supporting Returning Adult Students in Obtaining a College Credential. Washington, DC: Higher Ed Insight. Accessed February 2, 2015, at https://higheredinsight. files.wordpress.com/2014/01/redesign_lumina-brief-oct2012.pdf.

Evelyn, J. (2003). The Silent Killer of Minority Enrollments: The Michigan court cases getting all the attention, but the bigger threat to campus diversity is state budget cuts.

The Chronicle of Higher Education, 1-10.

Figueroa's Framework. (2010). 1st ed. [ebook] Cambridge: Cambridge University, pp.234-254. Available at: http://tamrich.wikispaces.com/file/view/ch11.pdf [Accessed 10 Jun. 2015].

Gasman, M. (2013). The Changing Face of Historically Black Colleges and Universities. University of Pennsylvania. Retrieved from http://repository.upenn.edu/cgi/viewcontent.cgi?article=1396&context=gse_pubs

Grabowski, C., Et. Al. (2016). "Today's Non-Traditional Student: Challenges to Academic Success and Degree Completion." *Inquiries Journal/Student Pulse*, *8*(03). Retrieved from http://www.inquiriesjournal.com/a?id=1377

Gehringer,T., Folberg, A. & Ryan, C. (2022) The Relationships of Belonging and Task Socialization to GPA and Intentions to Re-Enroll as a Function of Race/Ethnicity and First-Generation College Student Status: Journal of Diversity in Higher Education National Association of Diversity Officers in Higher Education2022, Vol. 15, No. 6, 744–754

Greenbank, P. (2003). The role of values in educational research: the case for reflexivity: British Educational Research Journal, vol.29, no.6

Harper, S.R., & Hurtado, S. (2011). Nine themes in campus racial climates and implications for institutional transformation: Racial and Ethnic Diversity in Higher Education, (3),204-216.

Hegji, A. (2023). Institutional Eligibility for Participation in Title IV Student Financial Aid Programs. Retrieved from https://sgp.fas.org/crs/misc/R43159.pdf

Holdsworth, C. & Quinn, J. (2011). The Epistemological Challenge of Higher Education Student Volunteering: “Reproductive” or “Deconstructive” Volunteering?. Antipode. 44. 386 –

405. 10.1111/j.1467-8330.2011.00844.x.

Kearsley, G. (2010). Andragogy M.Knowles. The theory Into practice database. Retrieved from http://tip.psychology.org

Knowles, M. S. (1984). The adult learner: A neglected species (3rd ed.). Houston, TX: Gulf Publishing.

Kolodner.M. (2015) The financial aid policy that shuts out millions of students. The Hechinger Report, Retrieved from; http://hechingerreport.org/the-financial-aid-policy-that-shuts-out-millions-of-students/.

Lakin, M. B., Mullane, L., & Robinson, S. (2008). Mapping new directions: Higher education for older adults. Reinvesting in the third age: Older adults and higher education—Second report. Washington, DC: American Council on Education.

Lareau, A. (2011). Unequal childhoods: Class, race, and family life (2nd ed.). Berkeley, CA: University of California Press.

Markowitz, T. (2017). The Barriers To Success and Upward Mobility For First Generation Students and How To Fix The Problem. Retrieved from https://www.forbes.com/sites/troymarkowitz/2017/08/08/the-barriers-to-success-and-upward-mobility-for-first-generation-students-and-how-to-fix-the-problem/?sh=631967151cb3

Mercer, C., & Stedman, J. (2008). Minority-serving institutions: Selected Institutional and Student Characteristics, 42-53.

National Center for Education Statistics (NCES). (2016, May). Undergraduate enrollment. Retrieved from https://nces.ed.gov/programs/coe/indicator_cha.asp

National Center for Education Statistics (NCES). (2022, May). Conditions of Education Retrieved from https://nces.ed.gov/pubs2022/2022144.pdf

Perna, L. W., & Jones, A. (2013). The state of college access and completion: Improving College Success for Students from Underrepresented Groups. Routledge.

Pitre, C. C., & Pitre, P. (2009). Increasing underrepresented high school students' college transitions and achievements. NASSP Bulletin, 93(2), 96-110.

Ran, F.X., (2020). Corequisite Remediation Is Shown to Improve Gateway Course Outcomes. Now What? Retrieved from https://ccrc.tc.columbia.edu/easyblog/future-of-corequisite-remediation.html

Ran, F. X., & Lin, Y. (2019). The effects of corequisite remediation: Evidence from a statewide reform in Tennessee. *Educational Evaluation and Policy Analysis*, *44*(3), 458–484. https://doi.org/10.3102/01623737211070836

Ran, F.X., & Lin, Y. (2022). Rethinking remedial programs to promote college student success. Retrieved from https://www.brookings.edu/blog/brown-center-chalkboard/2022/02/15/rethinking-remedial-programs-to-promote-college-student-success/

Ratcliff, J (1993). Seven Streams in the Development of the Modern Community College: A Handbook in the Community College of America.Westbrook

Rhoades, G. (2012). Closing the door, increasing the gap: University of Arizona, Center for the Future of Higher Education. Who's Not Going to (Community) College, Policy Report #1. https://www.insidehighered.com/sites/default/server_files/files/ClosingTheDoor_Embargoed.pdf

Ruark, P. (2014). State Financial Aid Leaves Adult Learners Behind. Michigan League for

Public Policy, 2014. http://www.mlpp.org/wp-content/uploads/2014/08/state-financial-aid-2.pdf.

Ryan, R. M. & Deci, E. L. (2000) 'Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being.' American Psychologist, 55(1), 68-78.

Sanabria, T., Penner A., & Domina, T. (2020). Failing at Remediation? College Remedial Course taking, Failure and Long-Term Student Outcomes. Research In Higher Education 61 (4), 459-484.

Schneider, M., & Yin, L. M. (2012). Completion matters: the high cost of low community college graduation rates. In AEI Outlook Series (p. 1+). Washington, DC: American Enterprise Institute. Retrieved from http://link.galegroup.com.libproxy.temple.edu/apps/doc/A290066874/AONE?u=temple_main&sid=AONE&xid=9f51e5dd

Shedd, C. (1932). Higher education in the United States. In W. M. Kotschnig (ed.). The university in a changing world. London: Oxford University Press.

Smith, D. G. (1996). Achieving faculty diversity: Debunking the myths. Washington, DC: Association of American Colleges and Universities.

Smith, E., & Reeves, R., (2020) Up Front: SAT math scores mirror and maintain racial inequity. Retrieved from https://www.brookings.edu/blog/up-front/2020/12/01/sat-math-scores-mirror-and-maintain-racial-inequity/

Startz, D., (2022) First-generation college students face unique challenges. Retrieved from https://www.brookings.edu/blog/brown-center-chalkboard/2022/04/25/first-generation-college-students-face-unique-challenges/

Strayhorn, T. L. (2013). Modeling the determinants of college readiness for historically

underrepresented students at 4-year colleges and universities: A national investigation. American Behavioral Scientist, 58 (8), 972-973. doi:10.1177/0002764213515230

Strucker,J, & Davidson, R. (2003). Adult reading components study. Boston: NCSALL.

Sullivan,L.W. (2004) Missing persons: minorities in the health professions, a report of the Sullivan Commission on Diversity in the Healthcare Workforce. Retrieved from https://www.sciencedirect.com/science/article/abs/pii/S073646791630261X#preview-section-references

Swail, W. S., & Perna, L. W. (2002). Precollege outreach programs: A national perspective.

Taniguchi, H., & Kaufman, G. (2005, December). Degree completion among nontraditional college students. Social Science Quarterly, 86(4), 913-927

The Chronicle of Higher Education (2017). When Students Aren't as Prepared as They Look on Paper. The Chronicle Of Higher Education, 1-5.

The National Center for Fair College Testing. (2023) Retrieved from https://fairtest.org/

Tyszko, J. (2018). Reimagining the Triad: What Role for Business in Higher Education Quality Assurance? https://higherlearningadvocates.org/2018/10/30/reimagining-the-triad/

U.S. Department of Education, National Center for Education Statistics (2016). Digest of Education Statistics, 2014 (NCES 2016-006), Chapter 3. Available at http://nces.ed.gov/programs/digest/d14/ch_3.asp.

U.S. Department of Education, National Center for Education Statistics (2021). Digest of Education Statistics, Department of Education Announces Action to Advance Equity in Education. Retrieved from: https://www.ed.gov/news/press-releases/department-education-announces-actions-advance-equity-education

U.S. Department of Labor. (2015). Labor force projections to 2024: The labor force is growing, but slowly, Monthly Labor Review, Retrieved from; http://www.bls.gov/opub/mlr/2015/article/labor-force-projections-to-2024.htm.

Ward, N. L. (2006). Improving Equity and Access for Low-Income and Minority Youth into Institutions of Higher Education. Urban Education, 41(1), 50-70. doi:10.1177/0042085905282

Wellman, M. (2017). Report: The race gap in higher education is very real. Retrieved from https://www.usatoday.com/story/college/2017/03/07/report-the-race-gap-in-higher-education-is-very-real/37428635/

Witham, K., & Bensimon., E. M. (2012). Creating a culture of inquiry and equity around student success: Creating campus cultures. Fostering Success Among Racially Diverse Student Populations, 46-67.

Yolak, B. B., Kiziltepe, Z., & Seggie, F. N. (2019). The Contribution of Remedial Courses on the Academic and Social Lives of Secondary School Students. Journal of Education, 199(1), 24–34. https://doi.org/10.1177/0022057419836434

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APPENDIX A

SURVEY FOR ONLINE DISTRIBUTION TO HEALTH SCIENCE STUDENTS

Survey for online distribution to Health Sciences Students

Perceptions of Traditional and Non-traditional Students in the Health Sciences Department

I am requesting that you voluntarily participate in this research by reading the instructions and completing the survey. Please do NOT write your name. This is in partial fulfillment of a Doctoral Program at Temple University.

1. Please select your choice below. Clicking on "agree" below indicates that:

   • you have read the above information

   • you voluntarily agree to participate

   • you are at least 18 years of age

   If you do not wish to participate in the research study, please decline participation by clicking on "disagree".

   ○ Agree
   ○ Disagree

2. What year were you born?

   [ ]

3. What is your gender?

   ○ Male ○ Female

4. Is English your native language?

   yes ○ no

5. What is your race select all that apply?

   ○ African American or Black ○ Asian ○ Hawaiian or Pacific Islander ○ American Indian or Alaskan Native ○ White ○ Hispanic, Latinex or of Spanish origin ○ Other Please Specify

   [ ]

6. When did you start at Deer Park? Please provide the month and year.

   [ ]

7. Are you the first person in your immediate family to attend college?
   yes ○ no ○

8. What is your highest level of education?
   ○ high school graduate ○ GED ○ Certificate ○ Associate Degree ○ Bachelor's Degree ○ Graduate Degree ○ None of the Above

9. What is your parents highest level of education?
   ○ high school graduate ○ GED ○ Certificate ○ Associate Degree ○ Bachelor's Degree ○ Graduate Degree ○ None of the Above

10. What is your spouse/partners highest level of education?
    ○ high school graduate ○ GED ○ Certificate ○ Associate Degree ○ Bachelor's Degree ○ Graduate Degree ○ None of the Above

11. Do you identify as having military or veteran status?
    ○ yes ○ no ○ other Please specify. [ ]

12. What is your best estimate of the total income of your household during the past year?
    ○ Less than $20,000 ○ $20,000 to $39,999 ○ $40,000 to $59,999 ○ $60,000 to $79,999 ○ $80,000 to $99,999 ○ $100,000 to $124,999 ○ $125,000 to $149,999 ○ $150,000+

13. How many adults live in your household?
    1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10 ○ more than 10

14. Please describe your relation to the adults in your household.
    [ ]

15. Are you a parent?
    ○ yes ○ no

16. How many children live in your household?
    ○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10 ○ more than 10

17. How many children do you have that do not live in your household?
    ○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10 ○ more than 1

18 Please describe your relation to the children in your household.
   [ ]

19 How many dependents do you help support?
0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ more than 5 ○

20 What is your employment status as a student?
○ Self-employed ○ Employed Full-Time ○ Employed Part-Time Self-employed ○ Not employed, but looking for work ○ Not employed and not looking for work ○ Homemaker ○ Retired ○ Student ○ Other

21 Did you file the FAFSA to be considered for financial aid at Deer Park for the upcoming year?
○ Yes, and I received a financial aid award ○ Yes, but I did not receive a financial aid award ○ Yes, but I have yet to hear about a financial aid award ○ No, but I intend to apply ○ No, I will not need financial aid to attend Deer Park Community College

If you answered No, please explain why.

22 Do you have any concern about your ability to finance your college education? ○ None (I am confident that I will have sufficient funds) ○ Some concern (but I will probably have enough funds) ○ Major concern (not sure I will have enough funds to complete college)

23 How would you classify your student status at Deer Park?
○ Traditional college student ○ Nontraditional college student

Why did you choose to classify yourself in this way?

24 What would you classify as your biggest access challenge entering Deer Park ? Use the table below to rank in order of importance with 1 being most important and 6 being least important.

Financial Cost	
Home Obligations	
College Readiness and Preparedness	
Family Support	

Employment Obligations	
Language Barriers	

25 Which Health Science program are you most interested in? Please rank the 8 programs below with 1 being the most interested and 2 being the least interested.

Radiography (X-ray, Ultrasound, CT, MRI)	
Nursing	
Medical Lab Tech	
Medical Assistant	
Health Information Technology	
Medical Coding	
Phlebotomy	
Health Sciences Transfer Degree	

26 What is your current major?

27 What is the reason you chose Health Sciences as a prospective field? Please rank the 5 choices in importance to you with 1 being most important and 5 being least important.

Interest in the subject matter	
Job security	
Family or Friend recommendation	
Career Change	
Salary	

28 In general, how well do you feel that your high school prepared you to do college work?
Very well Fairly well Uncertain Poorly Very poorly

29 How satisfied were you with the results of your Deer Park placement test?
Very Satisfied Satisfied Neutral Unsatisfied Very Unsatisfied

30 Did your placement test indicate you need remediation in English or Math
yes no

31 How many remediation courses have you taken due to placement test scores?
0 1 2 3 more than 3

32 How many remediation math courses do you estimate having to complete before you can start program required math?
0 1 2 3 more than 3

33 How many remediation English or Writing courses do you estimate having to complete before you can start program required English?

0 1 2 3 more than 3

34 How many ESL courses have you taken at Deer Park?

0 1 2 3 more than 3

35 Do you agree with the policy of the institution to require completion of remediation course work before you can begin your degree requirements?

Strongly Agree Agree Neutral Disagree Strongly Disagree

Please explain why.

36 What is the likelihood that you will change your major due to having to take remediation courses at Deer Park?

Highly likely Likely Not sure Unlikely Definitely Not

37 What is the likelihood that you will withdraw from Deer Park due to having to take remediation courses at Deer Park?

Highly Likely Likely Not Sure Unlikely Highly unlikely

38 How well do you feel your remediation and ESL courses prepared you for college level course work here at Deer Park?

Very well Fairly well Uncertain Poorly Very poorly

39 Would you recommend any of the remediation credit courses you took at Deer Park to other students?

Definitely Probably Not Sure Probably Not Definitely Not

40 How often do you feel in control of your own academic destiny at Deer Park?

Everyday Once a week 2 to 3 times a month Once a month Less than once a month Never

APPENDIX B

HEALTH SCIENCES STUDENTS PARTICIPANTS CONSENT LETTER

Date:

Dear Student,

I am writing to you to request your participation in a research study, which is critical to My completing of the Doctor of Education Degree at Temple University.

The purpose of this quantitative research is to investigate the relationship between traditional and non-traditional Health Sciences students who may or may not be taking remediation courses at Deer Park Community College. A remediation course is defined as any course that you may have to take in order to better prepare you for your program required courses. In agreeing to participate you will be required to complete a survey with various questions given in an online setting. Your name must not be written on the questionnaire. It is important to know that your participation is voluntary; and everything possible will be done to protect the human rights of all participants. It is my intention that your identity will be kept anonymous and that you will be supplied with information regarding the study that you may require. It is also my intention to adhere to all ethical principles of APA in my questioning IRC, IRB and FERPA laws at both Deer Park Community College and Temple University.

Should you have any questions about participating in the study, please feel free to contact me @tug36509@temple.edu

Thank you for consenting to participate in the study.

Yours truly,

Stephanie Moffo

APPENDIX C

IRC GUIDELINES FOR DEER PARK COUNTY COMMUNITY COLLEGE

Guidelines for Conducting Research at Deer Park Community College

For the purpose of these guidelines, ***research*** is defined as gathering information used for assessment, evaluation, theses, dissertations, coursework, scholarship, publication, or any other use other than Deer Park classroom or instructional purposes. Research procedures include surveying, observing, interviewing, conducting focus groups, and compiling Deer Park archival data (either hard copy or computerized).

Researcher Responsibilities:

Researchers who intend to conduct research at Deer Park should contact the Deer Park Office of Institutional Research and Assessment (IR) at least 30 days prior to the commencement of their project. The IR Office will consult with the researcher to ensure that research participants (human subjects) and/or archival data about them are treated with the respect and care outlined by the American Psychological Association and the Association for Institutional Research ethics guidelines. In addition, the IR Office can provide advice on research methodology.

General obligations of the researcher are detailed below, followed by specific guidelines for conducting survey research.

General Guidelines for Research:

In conducting their research, researchers will be expected to fulfill the following obligations:

1. All research activities shall be in accordance with all federal, state, and local guidelines for research involving human subjects. Federal Policy for the Protection of Human Subjects can be found on-line at http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm

2. All projects involving Deer Park students, faculty, and staff as potential participants must adhere to the following ethical principles:
    a. Researchers must provide and follow an informed consent procedure that:
        i. describes the purpose of the research and who is primarily responsible for the project
        ii. makes clear the voluntary nature of participation and that the subject may discontinue participation at any time without penalty of loss of benefits to which the subject is otherwise entitled
        iii. outlines the researcher's strategy for maintaining confidentiality.
        iv. describes any potential risks or discomfort to the subjects
        v. details exactly what is expected of the research participants in terms of time and tasks
        vi. provides details on how to contact the researcher(s) for further information regarding the study
    b. Researchers must establish procedures for retaining data and documentation of informed consent in a secure location that maintains confidentiality. It is recommended that data and documentation be held for a minimum period of 5

years from the completion of the project or 5 years from the date of publication of research results, whichever period is longer.

3. The use of Deer Park resources to support research activities must be justified in terms of the research informing or enhancing the mission of Deer Park Community College.

4. One copy of all measurement instruments used should be provided for the files of the Office of Institutional Research and Assessment.

5. Any adverse events associated with the project should be reported immediately to the Office of Institutional Research and Assessment.

6. A report detailing the research findings should be submitted by the end of the following semester to the Office of Institutional Research and Assessment.

Specific Guidelines for Dissertation Research:

Doctoral students who wish to conduct research involving Deer Park Community College students, faculty or staff should forward an electronic copy of the final research proposal approved by the doctoral candidate's committee and the complete and approved Institutional Review Board submission. Deer Park will not consider any research unless these two documents have been submitted. Once submitted, these documents will be reviewed by a committee. The decision to approve will be based on the impact on our students or staff as research subjects and whether the research involves direct use of college human, information technology, or physical resources. Research that provides a benefit to Deer Park will be given priority consideration.

Specific Guidelines for Survey Research:

To assist in conducting survey research, and to ensure that surveys avoid duplicative efforts across the college; are designed in a way that elicits the desired information; and follow ethical guidelines, the Office of Institutional Research and Assessment will serve as the clearinghouse for all college administered surveys.

Procedures:

- The researcher should contact the Office of Institutional Research and Assessment (IR) to advise the IR staff of their survey plans.
- The researcher should submit a summary of their survey research plan to the Office of Institutional Research and Assessment that includes:
    - The purpose of the survey (the knowledge you hope to have generated).
    - A description of the intended sample and sampling method.
    - The timetable for the survey project.
    - A description of how the survey will be administered.
    - The survey instructions that will be given to participants.
    - The survey questions.
    - Plans for dissemination of results.
    - If applicable, how confidentiality will be maintained.
    - If applicable, an explanation of potential harm to research subjects.

- IR will review the survey research plan and, as appropriate, advise the researcher regarding any modifications that should be made (if modifications are necessary, the survey should be submitted for final review).
- Upon completion of the survey research, the researcher should submit a copy of the research report to IR for their files.

Resources:

Additional information regarding informed consent issues, research ethics, and research methodology can be obtained by contacting IR. Other resources can be accessed on-line through the following links:

Federal Policy for the Protection of Human Subjects:
http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm

American Psychological Association Ethical Principles of Psychologists and Code of Conduct:
http://www.apa.org/ethics/code2002.html

Association for Institutional Research Code of Ethics:
http://www.airweb.org/page.asp?page=140

Social Psychology Network Research Methods & Statistics Links:
http://www.socialpsychology.org/methods.htm

The American Statistical Association Survey Research Methods Brochures:
http://www.amstat.org/sections/srms/whatsurvey.html

APPENDIX D

DESCRIPTIVE DATA ON QUESTIONS 28 THROUGH 40 ON THE SURVEY

Q28: In general, how well do you feel that your high school prepared you to do college work?

	Very well	Fairly Well	Uncertain	Poorly	Very Poorly	Mean
Traditional	19	33	21	10	1	3.70
Nontraditional	26	37	35	17	4	3.54

Q29. How satisfied were you with the results of your Deer Park placement test?

	Very Satisfied	Satisfied	Neutral	Unsatisfied	Very Unsatisfied	Mean
Traditional	17	21	38	6	1	3.57
Nontraditional	23	36	48	9	4	3.54

Q30. Did your placement test indicate you need remediation in English or math?

	Yes	No
Traditional	29	52
Nontraditional	44	76

Q31. How many remediation course have you taken due to placement test scores?

	0	1	2	3	More than 3
Traditional	4	8	9	8	2
Nontraditional	6	13	7	6	9

Q32. May many remediation math courses do you estimate having to complete before you can start program required math?

	0	1	2	3	More than 3
Traditional	7	14	7	2	0
Nontraditional	14	11	10	2	3

Q33.How many remediation English or Writing courses do you estimate having to complete before you can start program required English?

	0	1	2	3	More than 3
Traditional	9	10	4	5	0
Nontraditional	20	11	6	3	0

Q34.How many ESL courses have you taken at Deer Park?

	0	1	2	3	More than 3
Traditional	25	1	2	1	0
Nontraditional	34	2	2	1	0

Q35. Do you agree with the policy of the institution to require completion of remediation course work before you can begin your degree requirements?

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean
Traditional	2	11	13	2	1	3.38
Nontraditional	8	11	10	7	4	3.30

Q36. What is the likelihood that you will change our major due to having to take remediation courses at Deer Park?

	Highly Likely	Likely	Not Sure	Unlikely	Definitely Not	Mean
Traditional	1	1	8	9	10	2.10
Nontraditional	0	2	3	12	23	1.60

Q37. What is the likelihood that you will withdraw from Deer Park due to having to take remediation courses at Deer Park?

	Highly Likely	Likely	Not Sure	Unlikely	Highly Unlikely	Mean
Traditional	1	1	6	10	11	2.61
Nontraditional	0	1	7	12	19	2.45

Q38. How well do you feel your remediation and ESL courses prepared you for college level course work here at Deer Park?

	Very Well	Fairly Well	Uncertain	Poorly	Very Poorly	Mean
Traditional	3	9	14	2	1	3.38
Nontraditional	11	10	14	1	2	3.71

Q39. Would you recommend any of the remediation credit courses you took at Deer Park to other students?

	Definitely	Probably	Not Sure	Probably Not	Definitely Not	Mean
Traditional	6	10	5	6	2	3.41
Nontraditional	9	12	12	5	2	3.53

Q40. How often do you feel in control of your own academic destiny at Deer Park?

	Everyday	Once a	2 to 3	Once a	Less	Never	Mean

		week	times a month	month	than once a month		
Traditional	42	12	15	6	2	3	4.96
Nontraditional	63	17	13	7	10	6	4.84