1-1-2011

The Impact Of Remedial Coursework On Transfer Student Success

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This research is a product of the graduate program in Counseling and Student Development at Eastern Illinois University. Find out more about the program.

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4/5/2011
The Impact of Remedial Coursework on Transfer Student Success

(TITLE)

BY
Cathy Lee Feely

THESIS
SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
Master of Science in College Student Affairs

IN THE GRADUATE SCHOOL, EASTERN ILLINOIS UNIVERSITY
CHARLESTON, ILLINOIS

2011
YEAR

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ACKNOWLEDGEMENTS

The thesis process is not something that I can take full responsibility for on my own. To my chairman, Dr. Dan Nadler, thank you for your constant feedback and encouragement to finish in a timely manner. Your time is precious and I appreciate you always making time to meet with me or look over my latest additions. Thank you also to my committee members, Ms. Brenda Major and Dr. Angela Yoder. Brenda, you have been a constant source of encouragement throughout this process. Thanks for keeping me on track. Dr. Yoder, thank you for your insight and tips to help me push through the difficult parts of the thesis that I was unsure I could tackle. Also, a big thank you to Mr. Eric Davidson, for your willingness to help me calculate my data in a meaningful and quick way, without you, I would still be trying to figure out SPSS. Thank you to Mr. Josh Norman, you were so helpful in gathering the data that I needed and you were willing to do it so quickly. Each of you has supported me faithfully and for that I am truly thankful.

To my amazing family who has been a constant support through this process- Mom and Dad, thanks for never letting me give up on completing my Master’s degree. I could not have made it this far without you guys. Chet, Misty, Macklin, Marylee, and Macayle- thanks for reminding me to laugh and enjoy the journey. Finally, to my amazing husband, Matt, thank you does not seem quite enough for all your help and support through the thesis journey. You were always there to remind me I needed to make time each week to write and research; you proofread many pages, and let me bounce ideas off of you. Thanks for always believing in me and pushing me to finish. I love you all and could not have done it without your support!
ABSTRACT

This study focuses on the academic achievement and retention of community college transfer students. The research looks at how non-transferrable coursework effects transfer students’ academic success based on grade point average. Gender, ethnicity, and type of community college attended are factors all considered in the study. The sample of students being studied are all undergraduate students a Midwestern four year comprehensive university that transferred from an Illinois community college. The research indicates that students who have completed non-transferrable courses at the community college have greater academic success based on grade point average at the university than those without non-transferrable courses. The discussion of the results includes how the non-transferrable courses may have given students a solid academic foundation to build upon at the university.
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CHAPTER I
INTRODUCTION

Community colleges offer access to higher education that many students would not have the opportunity to obtain otherwise. Transferring from a community college to a four year university or college is common practice. In fact, nearly 50% of all students enrolled at a public institution of higher education attend a community college (National Center for Education Statistics, 1996).

There are many different reasons why this high of a percentage of students decide to attend a community college. Some of the factors may include location or proximity to home, affordability, major, athletics, number of transferrable credits, and academic preparedness. The economy has played a huge factor recently. Students are choosing to attend community college because it is significantly less expensive compared to a four year university. Another trend to take into consideration is that more people are going to college than in previous decades. Many entry level jobs now require a bachelor's degree. This means people who were not attending college before are now almost forced to attend to be able to obtain a job and in turn they are less prepared academically to enter college (Perkins-Gough, 2008).

In considering the transfer process for community college students into a university, it is important to consider academic preparedness. More and more community college students are enrolling in non-transferrable coursework. Non-transferrable courses include remedial, developmental, and orientation/transition classes. These types of courses do not count towards what a student needs to receive a bachelor's degree. Community college students who enroll in these types of courses are not academically prepared in high school to take
college level credit in Mathematics, English, and Reading. These subject areas are where most of the non-transferrable coursework is taken (Blair, 1998).

Statement of Purpose

The purpose of the study was to analyze the academic achievement of community college transfer students at a Midwestern four year comprehensive university. In this study, community college transfer students with non-transferrable credit was defined as remedial, developmental or orientation/transition courses. For all tests of hypotheses, an alpha < .05 was accepted as a meaningful, statistical difference (Schumacher & McMillan, 2005). Data was analyzed through SPSS to test differences of means between two groups (George & Mallory, 2008).

Research Question/Hypothesis

Three general research questions were developed for the purposes of the present study along with statistical hypotheses based on the review of literature related to the research questions. Research questions and associated hypotheses are stated below.

Research Question I

Are transfer students who have non-transferrable coursework as academically successful at a Midwestern four year comprehensive institution as those transfer students who do not have non-transferrable coursework?

H₀₁: There will be no statistically significant difference between grade point average in students with non-transferrable coursework and students without non-transferrable coursework.

H₁: There is a statistically significant difference between grade point average in
students with non-transferrable coursework and students without non-transferrable coursework.

$H_0$: $O = E$

$H_a$: $O \neq E$

The data supplied by a Midwestern four year comprehensive university was analyzed by the SPSS computer software program. The Independent T-Test assesses the difference between two groups to determine if they are statistically significant (Weinbach & Grinnell, 1998). The statistically significant level is .05.

$H_0$: There will be no statistically significant difference between retention rates among students with non-transferrable coursework and students without non-transferrable coursework.

$H_a$: There will be a statistically significant difference between retention rates among students with non-transferrable coursework and students without non-transferrable coursework.

$H_0$: $O = E$

$H_a$: $O \neq E$

The data supplied by a Midwestern four year comprehensive university was analyzed by the SPSS computer software program. The Chi-Square Test of Independence assesses the difference between groups to determine if they are statistically significant (Weinbach & Grinnell, 1998). The statistically significant level is .05.

Research Question II

To what extent do ethnicity, gender, and type of community college (urban, suburban...
or rural) have any difference on academic success among transfer students with and without non-transferrable coursework?

\( H_{03} \): There will be no statistically significant difference in grade point average in students with and without non-transferrable coursework by ethnicity.

\( H_{a3} \): There will be a statistically significant difference in grade point average in students with and without non-transferrable coursework by ethnicity.

\( H_{03}: O = E \)

\( H_{a3}: O \neq E \)

The data supplied by a Midwestern four year comprehensive university was analyzed by the SPSS computer software program. The two-way analysis of variance assesses the difference between two or more means to determine if they are statistically significant and a Post-Hoc test (Weinbach & Grinnell, 1998). The statistically significant level is .05.

\( H_{04} \): There will be no statistically significant difference between retention rates among students with and without non-transferrable coursework by ethnicity.

\( H_{a4} \): There will be a statistically significant difference between retention rates among students with and without non-transferrable coursework by ethnicity.

\( H_{04}: O = E \)

\( H_{a4}: O \neq E \)

The data supplied by a Midwestern four year comprehensive university was analyzed by the SPSS computer software program. The Chi-Square Test of Independence assesses the
difference between groups to determine if they are statistically significant (Weinbach & Grinnell, 1998). The statistically significant level is .05.

H₀₅: There will be no statistically significant difference in grade point average in students with and without non-transferrable coursework by gender.

Hₐ₅: There will be statistically significant difference in grade point average in students with and without non-transferrable coursework by gender.

H₀₆: O = E

Hₐ₆: O ≠ E

The data supplied by a Midwestern four year comprehensive university was analyzed by the SPSS computer software program. The two-way analysis of variance assesses the difference between two groups to determine if they are statistically significant (Weinbach & Grinnell, 1998). The statistically significant level is .05.

H₀₆: There will be no statistically significant difference between retention rates among students with and without non-transferrable coursework by gender.

Hₐ₆: There will be a statistically significant difference between retention rates among students with and without non-transferrable coursework by gender.

H₀₆: O = E

Hₐ₆: O ≠ E

The data supplied by a Midwestern four year comprehensive university was analyzed by the SPSS computer software program. The Chi-Square Test of Independence assesses the
difference between groups to determine if they are statistically significant (Weinbach & Grinnell, 1998). The statistically significant level is .05.

$H_{o7}$: There will be no statistically significant difference in grade point average in students with and without non-transferrable coursework by type of community college.

$H_{a7}$: There will be a statistically significant difference in grade point average in students with and without non-transferrable coursework by type of community college.

$H_{o7}$: $O = E$

$H_{a7}$: $O \neq E$

The data supplied by a Midwestern four year comprehensive university was analyzed by the SPSS computer software program. The two way analysis of variance assesses the difference between two independent variables to determine if they are statistically significant (Weinbach & Grinnell, 1998). The statistically significant level is .05.

$H_{o8}$: There will be no statistically significant difference between retention rates among students with and without non-transferrable coursework by type of community college.

$H_{a8}$: There will be a statistically significant difference between retention rates among students with and without non-transferrable coursework by type of community college.

$H_{o8}$: $O = E$

$H_{a8}$: $O \neq E$

The data supplied by a Midwestern four year comprehensive university was analyzed by the SPSS computer software program. The Chi-Square Test of Independence assesses the
difference between groups to determine if they are statistically significant (Weinbach & Grinnell, 1998). The statistically significant level is .05.

Research Question III

Are transfer students at a four year public Midwestern University as academically successful as freshmen students?

H_{09}: There will be no statistically significant difference in grade point average after the fall semester between first time transfer students and freshmen at a Midwestern four year comprehensive university.

H_{a9}: There will be statistically significant difference in grade point average after the fall semester between first time transfer students and freshmen at a Midwestern four year comprehensive university.

H_{09}: O = E

H_{a9}: O ≠ E

The data supplied by a Midwestern four year comprehensive university was analyzed by the SPSS computer software program. The Independent T-Test assesses the difference between two groups to determine if they are statistically significant and then a Chi-Square Goodness of Fit (Weinbach & Grinnell, 1998). The statistically significant level is .05.

H_{010}: There will be no statistically significant difference in grade point average after the spring semester between first time transfer students and freshmen at a Midwestern four year comprehensive university.

H_{a10}: There will be no statistically significant difference in grade point average after the
spring semester between first time transfer students and freshmen at a Midwestern four year comprehensive university.

\[ H_{010}: O = E \]

\[ H_{a10}: O \neq E \]

The data supplied by a Midwestern four year comprehensive university was analyzed by the SPSS computer software program. The Independent T-Test assesses the difference between two groups to determine if they are statistically significant and then a Chi-Square Goodness of Fit (Weinbach & Grinnell, 1998). The statistically significant level is .05.

Significance of the Study

The significance of this study is that findings from a Midwestern four year comprehensive university suggest that community college students transferring with non-transferrable credit will not be as academically successful as community college students transferring without non-transferrable credit (Brothen & Wambach, 2004). The study will include data from a Midwestern four year comprehensive university that transferred from a community college within the state of Illinois.

Outcomes of the proposed study include recommendations for the specific Midwestern four year comprehensive university. Findings could affect admission requirements and academic support services for transfer students. Also, findings in the study may be utilized by the Admissions Office in the recruitment efforts of future community college transfer students. The outcomes will be used to help university professionals better serve the community college transfer student population.
Limitation of Study

There are a few limitations to this study. There are some community colleges that include non-transferrable credit (remedial) in their students’ grade point average. Perhaps, the most significant limitation is the varying of amount of credits hours transfer students have coming into this Midwestern comprehensive four year university. For example, a student may transfer with a few credit hours or an entire associate’s degree. Also, another possibility is certain community colleges have better educational school districts/systems that feed into them.

Another limitation to this study is that transfer students are all unique in their own ways. For example a transfer student may be a single working parent, laid off, non-traditional student, or a traditional student trying to find a more cost efficient way to pay for college. These unique backgrounds may contribute differences in academic success and struggles.

Definition of Terms

Banner: database system used to pull student information from for this study.

Non-transferrable: to not convey from one person, place, or situation to another.

Onbase: imaging system used to view student transcripts.

Statistical Packages for the Social Sciences (SPSS): a computer program used for statistical analysis.

Transferrable: to convey from one person, place, or situation to another.

Transfer Student: any student with college level credit completed after high school.
2+2 agreements: An agreement between a community college and a four year university where two years at the community college will transfer as two years to the university. The coursework is pre-approved by the administration at the four year university.

Summary

The purpose of this research focuses on community college students’ academic preparedness after completing a year at a Midwestern four year comprehensive university. It compares students who have taken non-transferrable courses verses students who transfer into the university without non-transferrable courses. The literature has suggested that community college transfer students with non-transferable coursework are less prepared for courses at a four year institution than students with only transferable coursework.
CHAPTER II
REVIEW OF LITERATURE

Remediation

The City University of New York (CUNY) system has decided to leave the remedial coursework to its two year community colleges (Cronholm, 1999). This plan took effect back in 1998 and is still highly debated today. This decision was made after a study found how much it was costing universities to teach remedial courses in order to prepare students for college level work. The real debate is whether the long term benefits outweigh the financial and time strain that it puts on university systems (Cronholm, 1999).

The CUNY system has taken a different approach by not only diverting all students who need remedial courses to the community college, but also working with high schools ahead of time to make sure that students are more academically prepared. By helping high school students ahead of time, it is alleviating the need for as many remedial courses. This is a proactive approach to dealing with the overwhelming need for universities to offer remedial courses (Cronholm, 1999).

Illich, Hagan, and McCallister (2004) studied students at a community college in Texas. They placed students in three different groups. The first group was made up of students who were concurrently enrolled in at least one remedial course as well as college level courses and those students passed their remedial course(s). The second group was comprised of students who were concurrently enrolled in at least one remedial course as well as college level courses, but did not successfully pass at least one of their remedial courses. The third group of students were not enrolled any remedial courses, only college level courses.
The researchers found that "about half" of students enrolled in remedial courses did not pass at least one or more of their remedial courses (Illich, Hagan, & McCallister, 2004). Students who did not pass one or more of the remedial courses had substantially lower pass rates in their college level courses in comparison to the other groups. The study illustrates that students concurrently enrolled in remedial courses and college level courses underperformed compared to students who were only enrolled in college level courses. This is limited to only students who did not pass the remedial courses. Those students who did pass their remedial courses and were concurrently enrolled in college level credit performed as well as those only in college level courses.

Hagedorn, Siadat, Fogel, Nora, and Pascarella (1999) studied students from 23 different colleges and universities and split them into two groups: remedial mathematics and college level mathematics. The researchers concluded that students who studied more and took higher levels of mathematics in high school were more prepared for college level mathematics. The need for remedial mathematics is remaining constant because of lack of K-12 preparation.

Perin (2004) studied students at fifteen community colleges located in six states. Urban, suburban, and rural community colleges were all represented in the study. The researcher wanted to see how effective learning assistance centers were in helping students to be more academically prepared. The learning centers provided students with one-on-one tutoring, computer-aided learning, and one hour credit supplemental courses. Many of the professors who taught remedial courses used the services at the centers to enhance what students were learning in the classroom. In some instances students were able to receive more individualized attention at the centers than they were obtaining in the classroom.
Students that were interviewed about the centers spoke about the tutors and how much easier it was for them to grasp concepts when they had someone to explain it to them one-on-one.

Levin and Cacagno (2008) discuss key components to successful remediation. Traditionally educators have used the “drill-and-skill” method in teaching remedial courses. This method repetitively teaches basic information over and over until students master the concepts. This method is flawed because many students consider the information they are learning as abstract and are unable to connect what is being taught to real life situations. The authors suggest implementing three different changes. Institutions should restructure the curriculum for remedial courses, develop new institutional structures, and apply specific instructional strategies to have greater success with students passing remedial courses.

Restructuring the curriculum would package courses or provide supplemental instruction to enable students to build better study skills. New institutional structures would create learning communities where academic and social life connects. Modifying classroom strategies would entail using technology like music and video clips. Other strategies that could be implemented are using group work or small group discussion to help facilitate different styles of learning.

Brothen & Wambach (2004) suggest seven key concepts to help community colleges and universities to offer more effective developmental education. One of the concepts is to refine literary remedial courses. Students need to be equipped with good reading and writing skills in order to be successful and be able to persist to complete a bachelor degree. Another concept they suggest is to integrate different ways of teaching or learning in the classroom. Not all students learn in the same manner and therefore students need the opportunity to learn in a number of different ways. Integrating students taking developmental courses into college
level courses could also help more students to persist. The researchers suggest that
developmental classes would need to be restructured in order to do this, but in the long run it
could be beneficial to students because it would ease the transition from a remedial course to
a college level course.

Gonzalez (2010) analyzed data from a 2009 report by the Community College
Research Center. This report showed that black and Hispanic students did more poorly at
enrolling in remedial courses than white students at Valencia Community College in Florida.
In just four years, Hispanic students in remedial courses started achieving more success in
remedial courses than white students. Valencia Community College provided extra support
during this time to students who tested into remedial level courses. These students enrolled in
an additional course that addressed the transitional needs of high school students attending
college. Despite the completion results from minority students, the college deemed the data
inconclusive to prove the program’s success and this required course has now been
abandoned.

**Academic Achievement**

Glass and Harrington (2002) studied the academic performance of community
college transfer students specifically how transfer shock affected them and the retention and
graduation rates of community college transfer students at a North Carolina University.
Transfer students did experience transfer shock at the end of their first semester when their
grade point average (GPA) was compared to native students’ GPAs within their major
coursework. Community college transfer students had a lower GPA of .44 on average.
However, in the sample population of this study the retention rate of those transfer students
studied was 100%.
Those community college transfer students studied were able to partially recover from the transfer shock after the first semester (.15 grade points). With another group of community college transfers in this study, the mean GPAs were the same after two years at the university. This indicated that the community college students were able to overcome the transfer shock that they experienced their initial semester. With concern about retention and graduation rates, it does appear that it took community college transfer students longer to graduate at this particular university than it did the native students.

Rhine, Milligan, and Nelson (2000) suggest ways to help alleviate transfer shock as community college students transfer to four year institutions. Community colleges tend to offer an environment that aids students in building skills that will be needed to be academically successful at four year institutions and beyond. These skills are fostered in small classes where faculty are student focused and not research driven. The authors encourage four year institutions to offer support networks for students as they make the transition from the community college to help ease the transition. The support network would help introduce them to campus life, academic support services, and how to navigate a larger institution. The authors suggest preparing students ahead of time for what to expect can help curb the typical transfer shock felt by many community college transfer students.

Johnson’s (2005) study concluded transfer students did as well as native students in the Natural Resources and Sciences degrees. When the GPAs of native and transfer student graduates were compared there was no statistical evidence found. Some factors contributing to this outcome is small classroom size or student to teacher ratio and the location of the university studied. Transfer students were able to have a smoother transition academically because they were in a setting where it was easy to get to know their peers and professors
quickly as well as not be distracted by opportunities to do other activities that studying in a larger city might provide.

Community colleges have been scrutinized over the years for providing "watered down" courses to students (McGrath & Spear, 1991). In turn, many feel that community college transfer students are not academically prepared for coursework at the university level. Vaughan and Templin (1987) suggest otherwise. The researchers suggested that community college transfer students, often less prepared academically when beginning their college career, actually compare closely in performance to native university students.

The quality of education students receive at a community college has been very controversial in higher education circles (Brint & Karabel, 1989; Dougherty, 1994; Parnell, 1982; Zwerling, 1976, 1986). Many university professionals say that students are not expected to perform at a high level academically at the community college level. Some would even say that community college professors "water down" the academic requirements because students were not prepared in high school for college level course work (McGrath & Spear, 1991).

Carlan and Byxbe (2000) disagree. These community college advocates are giving students an opportunity to pursue a degree in higher education where they would not have had the opportunity to do so before. There tends to be a little more hand holding at the community college to help students step by step through their educational experience where at a university this would not be the case. This hand holding could be more detrimental to a community college transfer student and could possibly aid in the transfer shock academically after their first year at a university. When making these criticisms it is important to note that
some students would not have made it to the university setting without the hand holding
experience.

A study by Montondon & Eikner (1997) also supported the idea that students do
experience transfer shock. Community college transfer students attending a major Southern
university in the United States showed a decrease in GPA after their first semester at the
university in comparison to their community college GPA. On the other hand, native
students, on average, did not experience the same dip in GPA. This confirmed the theory of
transfer shock.

This study was conducted to see if community college transfer students performed as
well academically as native university students in upper level accounting courses. The
researchers wanted to see if community college courses were as rigorous as lower level
university courses. This can be seen by how well community college students performed in
their upper division courses.

Community college transfer students expected to receive a higher grade in their
intermediate accounting course than native students did. The community college transfer
students in this study did not show the effects of transfer shock within this particular course.
In fact, they had a higher GPA than the native university students. One of the factors that
could have impacted this study was age. Overall, the community college transfer students
were about 4 years older than the native university students. Being older could possibly mean
that those students are more serious and dedicated to their course work.

Hagedorn, Cypers, and Lester (2008) studied community college students from the
Los Angeles Community College District. This was a retrospective study that analyzed
students' transcripts at the community college level after they had completed a bachelor
degree. Students who performed well academically at the community college were much more likely to transfer. Also, students who transferred to the university had completed more transferrable coursework and passed 18% more courses than students who did not transfer on to a university.

The researcher Hagedorn, Cypers, and Lester (2008) concluded that students who had transferred were less likely to have taken remedial or developmental coursework. If those students had taken remedial/developmental coursework, they did not spend as many semesters taking non-transferrable courses. They moved through them quickly and went on to complete college level courses that would transfer to the university level. Another factor the researchers found important was community college students needed to progress through coursework in a timely manner. The more semesters spent at the community college, the less likely a student was to transfer to a university. They concluded that being successful academically and persisting at the community college were the best predictors of a student transferring to a university.

Bahr (2008) studied community college freshmen who needed remediation in mathematics courses with those who did not to see if remedial courses in mathematics do help students achieve academically. The results of the study found that students who completed mathematics remediation successfully are almost undistinguishable from students who did not need mathematics remediation. This outcome proves that remediation is successful when students pass remediation courses. The down side to the study is 3 out of 4 students did not pass mathematics remediation successfully and more than 4 out of 5, who do not pass mathematics remediation successfully, do not complete an associates or go on to transfer to a four year institution.
Retention Rates

Garcia Falconetti’s (2009) study examined 2+2 agreements between community colleges in Florida and Florida public universities. The researcher studied the persistence of community college students in completing their bachelor’s degree. The findings supported the fact that community college students do as well academically as native students. Their grade point averages were very comparable. The study indicated that community college transfer students could benefit from support services and programs that aid in student involvement.

Egemba (1997) concluded that the best indicator of whether a community college transfer student would obtain a degree or not was the students’ overall community college GPA. Ishitani (2008) suggested that transfer students who wait until their sophomore or junior year to transfer are retained at a higher percentage than students who transfer as freshman. Most universities calculate retention rates based on the freshman class. This would include freshman transfer students and could possibly distort the findings based on Ishitani’s research. Another factor that the researcher says effects persistence or retention is the drop in GPA a transfer student’s first semester. If students’ GPAs drop significantly, students will be more likely to drop out. Knowing these outcomes can help facilitate greater retention of transfer students because university personnel can get a student connected to proper support services to help them persist.

Glenn (2005) analyzed the study that was conducted at universities in Ohio. Students within a specific academic high school GPA and SAT range were studied. At some community colleges in Ohio, those students were required to take remedial course work. However, at other community colleges, students in the same GPA and SAT range were not
required to take remedial courses. By doing this, the researchers were able to study students of similar academic ability and get more accurate data.

Bettinger and Long found that students who took remedial courses in mathematics were 9.6% less likely to drop out of college within five years than students from that range that did not take remedial courses. They also found that students who took remedial courses in English were 17.3% more likely to complete a bachelor’s degree within four years than students from the range that did not take remedial courses. One thing that was found was that a significant amount of students who took these remedial courses applied to less academically selective universities than those that did not have remedial courses at their community college.

Poch and Wolverton (2006) studied the graduation rates at three Washington state universities to see how quickly community college transfer students completed bachelor degrees. The Washington state government implemented a graduation efficiency index (GEI) to measure the number of credits taken by students before graduating with a bachelor degree. In this qualitative study, university administrators were interviewed about the support and transitional services offered to community college transfer students at their universities. Most administrators said that they could do a better job in helping community college transfer students transition and persist. One administrator commented on how different transfer students can be and that makes offering support services more difficult. Overall, the GEI mandated by the Washington state government did increase graduation rates at the universities studied.

Hovdhaugen (2009) studied students at three universities in Norway to see what drives students to persist. Many students who persisted had a career goal in mind. Those
students saw education as a means to learn more about and be better prepared for future careers. Also, students who were driven to obtain a bachelor degree persisted. There was no significant difference between the aforementioned mindsets.

The researcher, Hovdhaugen (2009), also suggests that gender, age, parental education, and field of study can have an effect on a student’s ability to obtain a bachelor degree. If a student’s parents have not completed a college degree, then it can be more difficult for a student to complete a degree because of the lack of support and/or knowledge within their family. Age is another factor effecting students ability to persist. Sometimes it can work in a student’s favor to be older or a non-traditional student because one is more focused and mature. It can also work against a student to be older because one can have more responsibilities, a family, a job, etc...that take time away from education.

Woosley, Whitaker, and Knerr (2003) discuss retention and academic achievement tools used at Ball State University (BSU). The original tool used was a survey given to freshman the third week of class during their first semester. The survey was designed to highlight areas where a student might be having trouble by asking about career goals, class attendance, adjustment to campus, etc. Within three days of the survey, the students receive a six to eight page individualized report. The report provides feedback pertaining to students’ overall goals as well as campus resources that might help them better achieve academic and social success. This program has helped BSU retain a higher number of freshmen by addressing issues students face early in their college career. However, BSU transfer students did not have a program similar to the freshman survey to help them make the transition even though transfers were experiencing similar types of transitional barriers. BSU created Making a Successful Transfer (MAST). This program is very similar to the freshman survey
and gives individualized feedback to students with a list of campus resources to help them have a smooth acclimation to campus.

Wang (2009) studied community college transfer students who attended four-year institutions. The research tested the probability of students attaining a bachelor's degree based on gender, socio-economic status, high school curriculum, community college gpa, remediation, and expectation upon entering college. Wang used existing data from the National Education Longitudinal Study of 1988 and the Postsecondary Education Transcript Study. Traditional aged students who eventually transferred to a four-year institution were used in this study. The findings support that female students, higher socio-economic status, solid high school curriculum, and baccalaureate aspiration were all strong indicators that a student would persist to complete a bachelor's degree.

The study revealed that students who completed remedial courses in mathematics were less likely to persist (Wang, 2009). It also showed that reading remediation did not affect students' ability to attain a bachelor's degree. The mathematics remediation outcomes could possibly be explained by a few things. Students may be required to take several remedial mathematics courses which lengthen their time to degree completion. Remedial courses also have a stigma that students can begin to believe and it deters them from finishing their bachelor's degrees because they do not feel academically capable of accomplishing something so great.

Chapter Summary

The literature suggests there has been a lack of research on community college transfer students with non-transferrable credits, their ability to persist, and their overall academic achievement at the university level after transferring. Some universities are not
even offering remedial coursework, but diverting students who need those types of courses to
the community college. The literature has suggested that previous researchers have used
retention rates and grade point averages to measure transfer students’ academic success.
CHAPTER III
METHODOLOGY

Methodology of Data Collection:

The 451 participants in this study were transfer students who have completed non-transferrable work at a community college in the state of Illinois and those who have not completed any non-transferrable courses. This excludes high school students who have earned credit while in high school and also students who graduated high school before the year 2005. These students were enrolled full time at a Midwestern four year comprehensive university. There were 287 students who had completed non-transferrable coursework and 164 students without. On the basis of ethnicity, participants self-reported as one American Indian, two Asian Pacific Islander, 10 Hispanic, 25 Black, 35 unknown and 378 White. By gender respondents consisted of 215 males and 236 females. Types of community colleges were represented by 12 urban, 125 suburban and 313 rural.

Institutional Review Board (IRB) approval was needed in order to gain permission from the Midwestern four year comprehensive university because of FERPA guidelines in dealing with students’ grade point averages. Also, IRB approval followed the university’s and the Counseling and Student Development’s protocol with ethic and professional standards in implementing the study. In addition, cooperation from the Office of Admissions and Office of the Registrar was gained in order to further conduct this study by supplying the data. The data was collected by using the computer programs Banner and Onbase to gather data on the university’s transfer students.

In research question one, the data pulled from Banner was transfer students grade point averages and retention rates. The data was separated into two groups, non-
transferrable credit and those without non-transferrable credit, and assessed the statistical differences.

In research question two, the data pulled from Banner was the demographics of the transfer students grade point averages and retention rates. The data was separated into numerous groups by ethnicity, gender, and type of community college (i.e. urban, rural, and suburban). From there, the data was divided into two groups, students with non-transferrable courses and those without non-transferrable courses.

In research question three, the data pulled from Banner measured transfer shock and freshmen shock differences using students’ grade point averages. The data was divided into two groups transfer students and freshmen students. The data was further divided by fall and spring semester.

Methodology of Data Analysis/Presentation:

The data was supplied by the Midwestern four year comprehensive university’s Registrar’s Office. The data was analyzed through Statistical Package for the Social Sciences (SPSS). This computer software was used to test significance between independent variables. This study used T-test and Analysis of Variances to test for significance of means between the different groups. In addition to non-transferrable coursework, the demographics of the sample population were analyzed (i.e. gender, ethnicity, and type of community college). For the purpose of this study significance was defined as .05. The data is presented through visual data table sets and an oral presentation of the study’s findings.
Chapter Summary

This study used data from the Midwestern four year comprehensive university’s Registrar’s Office. The sample population consisted of transfer students from public community colleges located in the Midwest. The data used T-test and Analysis of Variance to test for significance in the sample population’s grade point average and retention rate. In addition, SPSS tests were done to see if demographics had an impact in transfer students who had non-transferrable coursework.
CHAPTER IV
RESULTS

An analysis of this study consisted of data collected from a four year Midwestern comprehensive university’s records office. The data consisted of 451 Illinois community college transfer students with and without non-transferrable (NTC) credit. Below are the results of the three research questions that examine academic achievement and retention among the sample population.

Research Question I

Are transfer students who have non-transferrable coursework as academically successful at a Midwestern four year comprehensive institution as those transfer students who do not have non-transferrable coursework? Results for research question I are detailed through two hypotheses that were developed for statistical analysis. For all tests of hypotheses an alpha $< .05$ was accepted as a meaningful, statistical difference (Schumacher & MacMillan, 2005).

The first hypothesis measured academic achievement by testing for significance between grade point averages of transfer students with non-transferrable coursework verses transfer students without non-transferrable coursework. The findings indicated a statistically significant difference in grade point averages for both fall and spring semesters. Transfer students with non-transferrable coursework had a significantly higher grade point average than transfer students without non-transferrable coursework. The mean grade point average for transfer students with non-transferrable coursework was 3.0912 for the fall 2009 semester and 3.1634 for the spring 2010 semester. For transfer students without non-transferrable coursewor...
coursework the mean grade point average was 2.8354 for the fall 2009 semester and 2.9289 for the spring 2010 semester (Table 1).

Table 1

Hypothesis 1 Independent T-test for fall and spring GPA: Students without non-transferable coursework (w/out NTC) and students with non-transferable coursework (w/NTC).

<table>
<thead>
<tr>
<th>NTC</th>
<th>N</th>
<th>t</th>
<th>S.D.</th>
<th>Mean</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall gpa w/out NTC</td>
<td>287</td>
<td>-3.503</td>
<td>2.8354</td>
<td>2.8354</td>
<td>.001</td>
</tr>
<tr>
<td>Fall gpa w/NTC</td>
<td>164</td>
<td>.73585</td>
<td>3.0912</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring gpa w/out NTC</td>
<td>287</td>
<td>-2.992</td>
<td>.78395</td>
<td>2.9289</td>
<td>.003</td>
</tr>
<tr>
<td>Spring gpa w/NTC</td>
<td>164</td>
<td>.80999</td>
<td>3.1634</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The second hypothesis measured the retention rate of transfer students with and without non-transferrable coursework. The Pearson Chi Square Test of Independence indicated no statistically significant difference. The significance level was .784 which is greater than the alpha level of .05 (Table 2).

Table 2

Hypothesis 2 Pearson Chi Square Test of Independence for students without non-transferable coursework (w/out NTC) and students with non-transferable coursework (w/NTC) and their retention rates.

<table>
<thead>
<tr>
<th>NTC</th>
<th>N</th>
<th>df</th>
<th>Value</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>W/out NTC</td>
<td>262</td>
<td>1</td>
<td>.075</td>
<td>.784</td>
</tr>
<tr>
<td>W NTC</td>
<td>149</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Research Question II

To what extent do ethnicity, gender, and type of community college (urban, suburban or rural) have any difference on academic success among transfer students? Results for research question II are detailed through six hypotheses that were developed for statistical analysis. For all tests of hypotheses an alpha $< .05$ was accepted as a meaningful, statistical difference (Schumacher & MacMillan, 2005).

The third hypothesis tested to see if ethnicity affected transfer students’ grade point averages with and without non-transferrable coursework. The findings indicated for the two-way ANOVA test no main effect for ethnicity, no main effect for with or without non-transferrable coursework, and no main effect for ethnicity and with or without non-transferrable coursework. The significance level for ethnicity was .338, for with or without non-transferrable coursework was .329, and the significance level for both was .668. All levels are higher than .05 (Table 4).
### Table 3 Variables Ethnicity

<table>
<thead>
<tr>
<th>NTC</th>
<th>Ethnicity</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>W/out NTC</td>
<td>Unknown</td>
<td>2.778</td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>2.328</td>
</tr>
<tr>
<td></td>
<td>Asian Pacific</td>
<td>3.600</td>
</tr>
<tr>
<td></td>
<td>Islander</td>
<td>2.933</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>2.881</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>W/NTC</td>
<td>Unknown</td>
<td>3.269</td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>2.925</td>
</tr>
<tr>
<td></td>
<td>Asian Pacific</td>
<td>3.600</td>
</tr>
<tr>
<td></td>
<td>Islander</td>
<td>2.878</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>3.082</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Unknown</td>
<td>3.023</td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>2.627</td>
</tr>
<tr>
<td></td>
<td>Asian Pacific</td>
<td>3.600</td>
</tr>
<tr>
<td></td>
<td>Islander</td>
<td>2.905</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>2.982</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td></td>
</tr>
</tbody>
</table>

### Table 4 Results of Two Way ANOVA Test Ethnicity and NTC

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Square</th>
<th>DF</th>
<th>Mean Squares</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td>2.555</td>
<td>4</td>
<td>.639</td>
<td>1.138</td>
<td>.338</td>
</tr>
<tr>
<td>NTC</td>
<td>.537</td>
<td>1</td>
<td>.537</td>
<td>.956</td>
<td>.329</td>
</tr>
<tr>
<td>Ethnicity &amp; NTC</td>
<td>1.330</td>
<td>4</td>
<td>.333</td>
<td>.592</td>
<td>.668</td>
</tr>
</tbody>
</table>
Table 5 & 6

Hypothesis 3 Continued Post Hoc Tests Tukey for Ethnicity and GPA W/out NTC and W/NTC

Table 5 Variables

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>N</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall gpa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>35</td>
<td>2.988</td>
</tr>
<tr>
<td>American Indian</td>
<td>1</td>
<td>2.50</td>
</tr>
<tr>
<td>Black</td>
<td>25</td>
<td>2.423</td>
</tr>
<tr>
<td>Asian Pacific Islander</td>
<td>2</td>
<td>3.60</td>
</tr>
<tr>
<td>Hispanic</td>
<td>10</td>
<td>2.90</td>
</tr>
<tr>
<td>White</td>
<td>378</td>
<td>2.954</td>
</tr>
<tr>
<td>Total</td>
<td>451</td>
<td>2.928</td>
</tr>
</tbody>
</table>

Table 6 Post Hoc Tests Tukey

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Ethnicity</th>
<th>Mean Difference</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unknown</td>
<td>Black</td>
<td>.5644</td>
<td>.034*</td>
</tr>
<tr>
<td></td>
<td>Asian Pac. Isl.</td>
<td>-.6120</td>
<td>.794</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>.0880</td>
<td>.998</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>.0333</td>
<td>.999</td>
</tr>
<tr>
<td>Black</td>
<td>Unknown</td>
<td>-.5644</td>
<td>.034*</td>
</tr>
<tr>
<td></td>
<td>Asian Pac. Isl.</td>
<td>-1.1764</td>
<td>.207</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>-.4764</td>
<td>.435</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>-.5311</td>
<td>.006</td>
</tr>
<tr>
<td>Asian Pacific Islander</td>
<td>Unknown</td>
<td>.6120</td>
<td>.794</td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>1.1764</td>
<td>.207</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>.7000</td>
<td>.748</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>.6453</td>
<td>.743</td>
</tr>
<tr>
<td>Hispanic</td>
<td>Unknown</td>
<td>-.0880</td>
<td>.998</td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>.4764</td>
<td>.435</td>
</tr>
<tr>
<td></td>
<td>Asian Pac. Isl.</td>
<td>-.7000</td>
<td>.748</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>-.0547</td>
<td>.999</td>
</tr>
<tr>
<td>White</td>
<td>Unknown</td>
<td>-.0333</td>
<td>.999</td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>.5311</td>
<td>.006*</td>
</tr>
<tr>
<td></td>
<td>Asian Pac. Isl.</td>
<td>-.6453</td>
<td>.743</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>.0547</td>
<td>.999</td>
</tr>
</tbody>
</table>

* The mean difference is significant at the .05 level. Post Hoc test not performed on American Indian since there was only one student representing the sample population.
The fourth hypothesis tested to see if ethnicity affected transfer students’ retention rates with and without non-transferrable coursework. There was no statistically significant difference in retention rates from fall 2009 to fall 2010. The significance level of the Chi-Square Test was .921 for transfer students without non-transferrable coursework which is greater than an alpha .05 (Table 8). The significance level of the Chi-Square Test was .629 for transfer students with non-transferrable coursework which is also greater than an alpha .05 (Table 8).

Table 7 & Table 8
Hypothesis 4 Chi-Square Test of ethnicity and retention rate for fall 2010 W/out NTC and W/NTC

<table>
<thead>
<tr>
<th>NTC</th>
<th>Ethnicity</th>
<th>Enrolled is FA 2010</th>
<th>Not enrolled in FA 2010</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>W/out NTC</td>
<td>Unknown</td>
<td>18</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>20</td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>W/NTC</td>
<td>Unknown</td>
<td>15</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>W/Out NTC</td>
<td>Asian Pac. Isl.</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>W/NTC</td>
<td>Asian Pac. Isl.</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>5</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>W/out NTC</td>
<td>White</td>
<td>219</td>
<td>21</td>
<td>240</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>262</td>
<td>24</td>
<td>286</td>
</tr>
<tr>
<td>W/NTC</td>
<td>White</td>
<td>124</td>
<td>14</td>
<td>138</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>149</td>
<td>15</td>
<td>165</td>
</tr>
</tbody>
</table>
Table 8
Chi-square Test of ethnicity and retention rate for fall 2010 W/out NTC and W/NTC

<table>
<thead>
<tr>
<th>NTC</th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>W/out NTC</td>
<td>.925</td>
<td>4</td>
<td>.921</td>
</tr>
<tr>
<td>W/NTC</td>
<td>2.587</td>
<td>4</td>
<td>.629</td>
</tr>
</tbody>
</table>

The fifth hypothesis tested to see if gender affected grade point averages of transfer students for the fall semester with and without non-transferrable coursework. In a two-way ANOVA, the findings indicated that there was a main effect for students with and without non-transferrable coursework and a main effect for gender, but not a significant effect for the interaction of gender and non-transferrable coursework. The level of significance was .000 for with or without non-transferrable coursework, .002 for gender, and .457 for the relationship of gender and with or without non-transferrable coursework (Table 10).

Table 9 & 10

Hypothesis 5 Two Way ANOVA Test for gender and GPA W/out NTC and W/NTC

Table 9 Variables

<table>
<thead>
<tr>
<th>NTC</th>
<th>Gender</th>
<th>Mean</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>W/out NTC</td>
<td>Male</td>
<td>2.7308</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>2.9164</td>
<td>156</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.8366</td>
<td>286</td>
</tr>
<tr>
<td>W/NTC</td>
<td>Male</td>
<td>2.9523</td>
<td>84</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>3.2371</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3.0912</td>
<td>164</td>
</tr>
<tr>
<td>Total</td>
<td>Male</td>
<td>2.8238</td>
<td>214</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>3.0251</td>
<td>236</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.9294</td>
<td>450</td>
</tr>
</tbody>
</table>
Table 10 Two-way ANOVA Test

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>Df</th>
<th>Mean square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTC</td>
<td>7.353</td>
<td>1</td>
<td>7.353</td>
<td>13.157</td>
<td>.000</td>
</tr>
<tr>
<td>Gender</td>
<td>5.505</td>
<td>1</td>
<td>5.505</td>
<td>9.850</td>
<td>.002</td>
</tr>
<tr>
<td>NTC &amp; Gender</td>
<td>.310</td>
<td>1</td>
<td>.310</td>
<td>.555</td>
<td>.457</td>
</tr>
</tbody>
</table>

The sixth hypothesis tested the effect of gender on the retention rate from fall 2009 to fall 2010 for students with and without non-transferrable coursework. The Pearson Chi-Square Test indicated there was no statistically significant difference in gender and retention rate for students with or without non-transferrable coursework. The level of significance was .640 for students without non-transferrable coursework and .209 for students with non-transferrable coursework which are both greater than the alpha level of .05 (Table 12).

Table 11 & 12

Hypothesis 6 Pearson Chi-Square Test of retention and gender W/out NTC and W/NTC

Table 11 Variables

<table>
<thead>
<tr>
<th>NTC</th>
<th>Gender</th>
<th>Enrolled is fall 2010</th>
<th>Not enrolled in fall 2010</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>W/Out NTC</td>
<td>Male</td>
<td>118</td>
<td>12</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>144</td>
<td>12</td>
<td>156</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>262</td>
<td>24</td>
<td>286</td>
</tr>
<tr>
<td>W/NTC</td>
<td>Male</td>
<td>74</td>
<td>10</td>
<td>84</td>
</tr>
<tr>
<td></td>
<td>Female</td>
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<td>80</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>149</td>
<td>15</td>
<td>164</td>
</tr>
</tbody>
</table>
Table 12 Pearson Chi-square test

<table>
<thead>
<tr>
<th>NTC</th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>W/out NTC</td>
<td>.218</td>
<td>1</td>
<td>.640</td>
</tr>
<tr>
<td>W/NTC</td>
<td>1.577</td>
<td>1</td>
<td>.209</td>
</tr>
</tbody>
</table>

The seventh hypothesis tested the effect of type of community college on grade point average of transfer students with and without non-transferrable coursework. In a two-way ANOVA, the findings indicated that there was no significant interaction between non-transferrable credit and type of community college. Rural community college students do not score significantly higher than students from suburban or urban community colleges. The level of significance was .353 which is greater than the alpha level of .05 (Table 14).
Table 13 & 14

Hypothesis 7 Two Way ANOVA for type of community college and GPA W/out NTC and W/NTC

Table 13 Variables

<table>
<thead>
<tr>
<th>NTC</th>
<th>College Type</th>
<th>Mean</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>W/out NTC</td>
<td>Rural</td>
<td>2.8673</td>
<td>192</td>
</tr>
<tr>
<td></td>
<td>Suburban</td>
<td>2.7972</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>2.4843</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.8366</td>
<td>286</td>
</tr>
<tr>
<td>W/NTC</td>
<td>Rural</td>
<td>3.1581</td>
<td>121</td>
</tr>
<tr>
<td></td>
<td>Suburban</td>
<td>2.8811</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>3.0700</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3.0912</td>
<td>164</td>
</tr>
<tr>
<td>Total</td>
<td>Rural</td>
<td>2.9797</td>
<td>313</td>
</tr>
<tr>
<td></td>
<td>Suburban</td>
<td>2.8227</td>
<td>125</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>2.7283</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.9294</td>
<td>450</td>
</tr>
</tbody>
</table>

Table 14 Results of Two Way ANOVA Test

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Square</th>
<th>DF</th>
<th>Mean Squares</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTC</td>
<td>2.340</td>
<td>1</td>
<td>2.340</td>
<td>4.133</td>
<td>.043</td>
</tr>
<tr>
<td>College type</td>
<td>2.758</td>
<td>2</td>
<td>1.379</td>
<td>2.436</td>
<td>.089</td>
</tr>
<tr>
<td>NTC &amp; college type</td>
<td>1.181</td>
<td>2</td>
<td>.591</td>
<td>1.043</td>
<td>.353</td>
</tr>
</tbody>
</table>

The eighth hypothesis tested the effect of type of community college on retention rates of transfer students with and without non-transferrable coursework from fall 2009 to fall 2010. The Pearson Chi-Square Test indicated there was no statistically significant difference. There is not a significant relationship between retention and community college type. The levels of significance were each over the alpha level of .05 (Table 15).
Table 15

Hypothesis 8 Pearson Chi Square Test of type of community college and retention rate W/out NTC and W/NTC

<table>
<thead>
<tr>
<th>College type</th>
<th>N retention W/out NTC</th>
<th>N retention W/ NTC</th>
<th>N</th>
<th>Df</th>
<th>Value</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enrolled in Fall 2010</td>
<td>176</td>
<td>112</td>
<td>288</td>
<td></td>
<td>.081</td>
<td>.776</td>
</tr>
<tr>
<td>Not enrolled in Fall 2010</td>
<td>16</td>
<td>9</td>
<td>25</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>192</td>
<td>121</td>
<td>313</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suburban</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enrolled in Fall 2010</td>
<td>80</td>
<td>33</td>
<td>113</td>
<td></td>
<td>.796</td>
<td>.372</td>
</tr>
<tr>
<td>Not enrolled in Fall 2010</td>
<td>7</td>
<td>5</td>
<td>12</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>87</td>
<td>38</td>
<td>125</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enrolled in Fall 2010</td>
<td>6</td>
<td>4</td>
<td>10</td>
<td></td>
<td>.069</td>
<td>.793</td>
</tr>
<tr>
<td>Not enrolled in Fall 2010</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>5</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Research Question III

Are transfer students at a four year public Midwestern university as academically successful as freshmen students? Results for research question III are detailed through two hypotheses that were developed for statistical analysis. For all tests of hypotheses an alpha < .05 was accepted as a meaningful, statistical difference (Schumacher & MacMillan, 2005).

Hypotheses nine and ten were tested through the Independent t-test for statistically significant difference between transfer and freshmen grade point averages. There was a statistically significant difference between freshman and transfer students’ grade point averages. The level of significance was .000 for both fall 2009 and spring 2010 semesters (Table 16).
Table 16

Hypothesis 9 and 10 Independent T Test of freshmen and transfer student GPA

<table>
<thead>
<tr>
<th>Status</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall GPA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshmen</td>
<td>1544</td>
<td>2.7722</td>
<td>.77326</td>
<td>-3.788</td>
<td>.000</td>
</tr>
<tr>
<td>Transfer</td>
<td>451</td>
<td>2.9284</td>
<td>.76262</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring GPA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshmen</td>
<td>1544</td>
<td>2.6585</td>
<td>.89699</td>
<td>-8.070</td>
<td>.000</td>
</tr>
<tr>
<td>Transfer</td>
<td>451</td>
<td>3.0142</td>
<td>.80062</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chapter Summary

For research question I, this study indicated that there was a statistically significant difference in both fall 2009 and spring 2010 grade point averages for students with and without non-transferrable coursework. For research question II, there was no statistically significant difference between grade point average and ethnicity for students with or without non-transferrable coursework. There was no statistically significant difference between retention rates and ethnicity for students with or without non-transferrable coursework. There was a statistically significant difference in male and female grade point averages for the fall 2009 semester with and without non-transferrable coursework. There was no significance for college type and grade point average for students with and without non-transferrable coursework. There was no statistical significance in college type and retention rate for students with or without non-transferrable coursework. There was statistical significance in freshmen and transfers student grade point averages in both fall 2009 and fall 2010 semesters.
CHAPTER V
Discussion

The purpose of this study based on data collected from a Midwestern four year comprehensive university was to examine the academic achievement of community college transfer students. In this study, we analyzed how non-transferrable coursework affected grade point average and retention rates and how ethnicity, gender and type of community college play a role.

Research Question I

Research shows, if community college transfer students pass remedial coursework, they are more likely to attain a bachelor’s degree (Bahr, 2008). The results of this study indicated that transfer students with non-transferrable coursework had higher grade point averages than students who did not complete any non-transferrable coursework at the community college. There was a statistically significant difference between the groups because non-transferrable coursework effects transfer students’ academic achievement.

This study indicated the possibility that remedial or non-transferrable coursework better prepares community college transfer students for college level coursework. A factor to consider would be community college transfer students who are on the border line academically, but are not required to enroll in non-transferrable coursework. Advisors and student affairs professionals could consider enrolling borderline students into remedial coursework at the community college level. This is also an avenue that a student success center or tutoring center could consider. Tutoring or study tables could be incorporated into a requirement for remedial coursework to give students extra academic support.
Research Question II

The results of this study indicated that there was no main effect with ethnicity and grade point average on students with or without non-transferrable coursework. Therefore, ethnicity does not have an effect on non-transferrable coursework. Also, there was no statistically significant difference in retention of transfer students based on ethnicity and with or without non-transferrable coursework. Ethnicity and non-transferrable coursework do not affect retention.

The results of this study indicated there is a main effect for students with and without non-transferrable credit and there is a main effect for gender. However, there is not a significant effect for the interaction of gender and students with and without non-transferrable coursework. Therefore, the study does not indicate a significant relationship between gender and whether students have non-transferrable coursework or not. Also, there is no statistically significant difference in retention of students based on gender and non-transferrable coursework. Retention does not appear to be related to non-transferrable coursework and gender.

The results of this study indicated there is no main effect for students with and without non-transferrable coursework and no main effect for community college type. There is no significant interaction between the two. Based on this study, community college type should not be a factor when considering a transfer student’s academic preparedness since there is no relationship between non-transferrable coursework and community college type. Also, there is no statistically significance between retention and type of community college. Rural, urban, and suburban students are retained at similar levels.
Research Question III

Research shows that community college transfer students often experience transfer shock, a decrease in grade point average, during their first semester at four year institutions (Montondon & Eikner, 1997). The study compares freshmen and community college transfer students' grade point averages and found that there was a statistically significant difference in both fall 2009 and spring 2010 semesters. Transfer students had a significantly higher grade point average than freshmen. The results indicate that transfer students are more academically successful overall than freshman students are despite the transfer shock students experience at a four year institution.

There could be a number of possibilities why community college transfer students are more academically successful than freshman students. One, a transfer student could be taking more major courses that are of greater interest, than a freshman who is taking general education courses that are required. Two, community college transfer students have more college experience than a first time freshman. Three, freshman could be experiencing their first time away from home without parental supervision. There would be more opportunities for them to make poor decisions about attending class and studying. Also, community college transfer students could have better college level study skills developed than freshman.

Limitations

The main limitation of this study was the under representation of different ethnic groups. For example, American Indian (1) and Asian Pacific Islander (2) had extremely low representation and some statistical tests, Post-Hoc Tests, could not be implemented. Also,
within the demographics, there were more transfer students with non-transferrable credit than without. Another limitation is there were just 12 transfer students from urban community colleges in comparison to 288 and 113 from rural and suburban schools respectively.

An additional limitation to this study was that transfer students who were enrolled in a four year institution came from a variety of backgrounds. For example some students were single parents, first generation college students, and in this present era, laid off work. All these factors can play a major role in the student's academic success. Many transfer students also try balancing full or part-time employment while pursuing a bachelor degree full-time and this plays an integral part in a student's academic success.

**Future Research/Recommendations to Professionals**

During this study, the literature review indicated a lack of research on transfer students as opposed to first year freshman students. Therefore, further research needs to be conducted on transfer students in general and in specific areas. There was almost no research on the retention of transfer students as a specific population. Most of the research is done in a particular area of study or certain type of student. There could be research on academic success within each major factor such as first generation transfer students, veteran transfer students, dislocated worker transfer students, or non-traditional age transfer students. Also, further research could specialize on how ethnicity, gender and type of community college can or cannot affect academic achievement and retention.

Also, professionals and politicians should advocate for increased funding in remedial coursework. In this era of budget cuts, some Illinois community colleges are reducing or eliminating financial aid towards remedial coursework (Jacobs, 2010). This study shows that remediation at the community college level can and does help prepare students achieve
academic success. Higher education professionals should look at students who are on the border line of remedial coursework and should consider if the stigma of being in remedial coursework effects their academic achievement or better prepares them to finish a bachelor’s degree.

An unexpected outcome of this study was the data indicated there were only 12 transfer students from an urban community college. The Office of Admissions in conjunction with University Marketing and Communications could use this study to figure out how to market more effectively to students in urban areas. This could also help increase the number of minority students enrolled at the four year Midwestern comprehensive university.

To further this research, it would be beneficial to follow the students to see how they achieve academic success and persist at the four year institution. This would include tracking students for at least four years if one wanted to compare the freshman class to the community college transfer students that were both used in this study. Tracking students for this amount of time could show us how likely a student taking non-transferrable course work is to obtain a bachelor degree within a certain time frame. This could help universities develop better academic support services for community college transfer students to help ensure a greater graduation rate.
References


Appendix A

The following is an e-mail from the Institutional Review Board expressing their approval for this study.

“November 22, 2010

Cathy Feely
Counseling and Student Development

Thank you for submitting the research protocol titled, “The Impact of Remedial Coursework on Transfer Student Success” for review by the Eastern Illinois University Institutional Review Board (IRB). The IRB has reviewed this research protocol and effective 11/18/2010, has certified this protocol as Exempt from Further Review. The protocol has been given the IRB number 10-138. You may proceed with your study.

The classification of this protocol as Exempt from Further Review is valid only for the research activities and subjects described in the above named protocol. IRB policy requires that any proposed changes to this protocol must be reported to, and approved by, the IRB before being implemented. You are also required to inform the IRB immediately of any problems encountered that could adversely affect the health or welfare of the subjects in this study. Please contact me, or the Compliance Coordinator at 581-8576, in the event of an emergency. All correspondence should be sent to:

Institutional Review Board
c/o Office of Research and Sponsored Programs
Telephone: 217-581-8576
Fax: 217-581-7181
Email: eiuirb@www.eiu.edu

Thank you for your cooperation, and the best of success with your research.

Robert Chesnut, Chairperson
Institutional Review Board
Telephone: 217-581-2125
Email: rwchesnut@eiu.edu”