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An Examination of Core Course Admission Deficiencies and their Impact on Six-Year
Graduation Rates for Transfer Students at the University of Nebraska-Lincoln.

By

David S. Belieu

A THESIS

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An Examination of Core Course Admission Deficiencies and their Impact on Six-Year
Graduation Rates for Transfer Students at the University of Nebraska-Lincoln.

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University of Nebraska, 2010

Adviser: James V. Griesen

The purpose of this study was to examine the six-year graduation rate of transfer students who enter the University of Nebraska-Lincoln with a deficiency in a core course admission requirement. The study explored the odds of a transfer student graduating in a six-year period if he/she were admitted with a deficiency. Specifically, the study examined graduation rates for transfer students who entered UNL with a core course deficiency in mathematics and foreign language. The study also examined graduated transfer students admitted with one or more core course deficiencies GPAs versus graduated transfer students who were admitted without a deficiency. After utilizing a logistic regression analysis to test the hypothesis, the research found that having a core course admission requirement deficiency significantly decreases the odds a transfer student will graduate in a six-year period. However, if the transfer students admitted with one or more deficiencies persist to graduation, there is no difference in the final GPA versus graduated transfer students admitted without a deficiency. The results illustrate the need for strong support programs for transfer students admitted with admission deficiencies in order to improve persistence and graduation rates.

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Chapter I

Introduction

The Final Report of the University of Nebraska-Lincoln (UNL) Admissions Policy Advisory Committee (1992) was a significant study for the University of Nebraska-Lincoln. The report led to massive changes in the undergraduate admissions policy at the University. At that time, UNL ranked near the bottom of its designated institutions and other Big Eight conference schools on indicators of admissions selectivity. For the 1990-1991 academic year, the university ranked last in both comparison groups in terms of the percentage of first year students who graduated in the top 10% of their high school class (p. 11). UNL ranked sixth in the Big Eight conference, and last among their Midwest peer institutions, in the percentage of students returning for their sophomore year (p. 12). Finally, UNL ranked seventh in the Big Eight and second to last among to their Midwest peer institutions in five-year graduation rates (p. 13).

To address these issues, the University of Nebraska-Lincoln established the Admissions Policy Advisory Committee charged with, among other things, improving the quality of education for all UNL undergraduates, improving student retention and graduation rates, and identifying and communicating the elements of preparation which are essential for success at UNL (Final Report, 1992, p.16).

One of the committee's major recommendations was to improve the current admission standards for undergraduate students. The following core course admission requirements were adopted as a result of the committee's recommendations, beginning with the class admitted for the 1997-1998 academic years:

- English (4 Units) Units: including intensive reading and writing experiences
- Mathematics (4 Units) Units: including Algebra I and II, Geometry, and an additional units that builds on the knowledge of algebra
- Social Studies (3 Units) Units: Including history, American government, geography, psychology, sociology, economics or anthropology; at least two of the units must be chosen from history, American government, and geography
- Natural Sciences (3 Units): Of the units, one must include one laboratory instruction, and at least two of the units must be selected from the following disciplines: biology, chemistry, physics, and earth science.
- Foreign Language (2 Units) Unit from the same language, with an additional unit recommended

Although the majority of the committee's report focused on preparation for admission as a freshman, these standards apply to all undergraduate students applying for admission to the University of Nebraska-Lincoln. However, in the reports concluding remarks, requirements for transfer students were included as noted below:

the student who needs additional academic preparation prior to attending UNL (admissions deferred), is encouraged to attend a community college or another four-year college and then transfer to UNL after successfully completing twelve or more hours of coursework in areas of academic deficiency and other areas of academic study. Every student who is willing and able to complete the requirements for admission to UNL (either in high school or in another institution of higher education) can be assured of admission. (Final Report, 1992, p. 32)

Although the report clearly states that students who are academically deficient in a core course should resolve the issue before transferring to UNL, some transfer students are currently conditionally admitted with core course deficiencies.

Context of the Problem

The purpose for the Final Report of the UNL Admissions Policy Advisory Committee (1992) was to address concerns regarding UNL's low retention and graduation rates in comparison to its peer institutions. Additionally, the report addressed growing concerns among faculty members and others about writing abilities of entering students, concerns among faculty and others about the mathematic preparedness of entering students, and UNL's inability to attract a high percentage of top high school scholars (pp. 8-10). Since the adoption of the admissions policy, little research has been completed regarding the effect of the admission standards regarding transfer students, and most importantly, how well transfer students succeed when they enter the university with a core course deficiency.

Purpose Statement

The purpose of this study was to examine the six-year graduation rate of transfer students who enter the University of Nebraska-Lincoln with a deficiency in a core course admission requirement.

Graduation Rate

A measure of success must be defined to properly assess how transfer students perform after enrolling at UNL. In the extensive literature addressing issues related to college students and their success, success was defined in a variety of ways, from cognitive growth, to psychosocial growth, to persistence in college; additionally, the factors studied varied from academic involvement (Free, Prolman, & Thomas, 2009). For this study however, success will be defined as graduation from the University of

Nebraska-Lincoln. According to the National Institute for Education Statistics (n.d.), students who begin their academic career at a two-year institution took about six years to graduate from the four year institution. The National Institute notes that:

Students who begin at public 2-year institutions must transfer to another institution in order to complete a 4-year degree. Students who did so took about a year and one-half longer to complete a bachelor's degree than students who began at public 4-year institutions (71 vs. 55 months), and almost 2 years longer than those who began at private not-for-profit 4-year institutions (50 months). The type of institution from which graduates received a degree was also related to time to degree completion: graduates of public institutions averaged about 6 months longer to complete a degree than graduates of private not-for-profit institutions 57 vs. 51 months (<http://nces.ed.gov>).

Based on these statistics, success in this study will be defined as graduation, in the allotted six year period after enrolling at UNL.

Research Questions

1. Does having one or more deficiencies in a core course admission requirement upon entering UNL result in a lower six-year graduation rate than students who enter with all core courses admission requirements completed?
2. Does having a specific deficiency in core mathematics courses upon entering UNL result in a lower six-year graduation rate than students who enter with all core mathematics courses admission requirements completed?
3. Does having a specific deficiency in a core foreign language course upon entering UNL result in a lower six-year graduation rate than students who enter with all core foreign language course admission requirements completed?

4. Do graduated transfer students admitted with one or more core course deficiencies have lower cumulative GPAs transfer students who were admitted without a deficiency?

In the data sets studied, there was not a significant amount of students admitted with deficiencies in other course areas such as natural science or English. Therefore, the research focused on deficiencies that would produce statistical significance.

Additionally, the researcher did not have access to data that would allow for an examination of GPA after each semester to test students recovery from transfer shock.

Populations Studied

To address the research questions the population of transfer students admitted with deficiencies between 2002-2003, 2003-2004, and 2004-2005 was matched with a group a students admitted without deficiencies on the basis of high school graduation and cumulative transfer GPA. These matching variables were selected on the basis of prior research studies.

Definition of Terms

Transfer Student. UNL uses the following criteria for the definition of transfer students.

1. The student has graduated from high school or passed the General Educational Development exam (GED).
2. The student is currently taking or has attempted more than 12 semester credits of college or university-level coursework since high school graduation or passing the GED exam (admissions.unl.edu).

Core Course Admission Requirements. There are 16 units of specified academic courses required for undergraduate admission to UNL. A unit is described as a Carnegie unit—one year of high school study or a semester or quarter of college coursework. The 16 units required for admission to UNL are:

- Four units of English
- Four units of mathematics (one unit of geometry, two units of algebra, and one unit must build upon knowledge of algebra),
- Three units of natural science (one must include laboratory instruction)
- Three units of social sciences
- Two units of foreign language (in the same language) (admissions.unl.edu)

Six-Year Graduation Rate. The time a transfer student has to complete his or her bachelor's degree after enrolling at UNL under the parameters established for this study. This time period is based on research done by the National Institute for Education Statistics.

Cumulative GPA. For the purpose of this study, cumulative GPA is the GPA a student has when he or she graduates from UNL. The university uses a 4.0 scale, where an A= 4 points a B= 3 points a C= 2 points a D= 1 point and an F=0 points. To find the cumulative GPA the points are multiplied by the number of credit hours taken for each class. The total points are then divided by the total number of credit hours.

Cumulative Transfer GPA. For the purposes of this study, cumulative transfer GPA is the GPA a transfer student has when he or she is admitted to UNL.

Course Articulation

“The growth in the number and type of articulation agreements and transfer arrangements between two- and four-year institutions during the past 100 years could be described as a work in progress” (O’Meara, Hall, & Carmichael, 2007, p. 9). Students benefit the most from these agreements as they are given more academic opportunity upon their completion of study at the community college level (p. 9). At UNL, specific articulation agreements exist in order for students to make up deficiencies at another institution. The UNL policy regarding transferability of credits is:

the college within the University of Nebraska-Lincoln in which a student enrolls (the degree college) has ultimate responsibility for determining how all credit, including transfer credit, will apply to a specific degree program. Evaluation of transfer credit is based on a review of the comparability of the nature, content and level of the learning experience and its appropriateness to the student’s degree program. The acceptance and use of transfer credit are subject to limitations in accordance with the educational policies of The University of Nebraska-Lincoln (admissions.unl.edu/transfer/credit). (UNL Admissions website, n.d.)

Course equivalents have been identified between UNL and most public and private Nebraska post-secondary institutions. The UNL admissions page lists specific course titles at other institutions that are equivalent to courses at UNL. The courses are cross listed for transfer students to clearly understand what courses will transfer to UNL. For example, if a student at Southeast Community College needed to make up a fourth-year mathematics deficiency, he or she would note that the course MATH 1150-College Algebra offered at Southeast Community College would transfer to UNL as MATH 101-College Algebra and eliminate his or her deficiency. Although UNL accepts transfer credit from all accredited institutions some transfer equivalents may not apply toward a specific degree.

Delimitations

A large amount of data exists that is collected by the office of admission regarding transfer students. At the time of this study, data were available for the 2002-2007 cohorts of students entering UNL. As a result, only three entering classes: (2002-2003, 2003-2004, 2004-2005) had the capability to graduate within the six-year graduation rate. Additionally, this study only used information regarding students who graduated from UNL, although a student might not have graduated from UNL, he or she could have graduated from another four-year institution. Finally, factors other than academic preparations could have contributed to failure to graduate within the six-year graduation rate. These factors may include: circumstance variables (e.g., being a first generation student attending college; socioeconomic status, which may contribute to financial and family issues; and personal variables including, study skills and decision-making abilities; psychosocial variables including, homesickness, and stress and depression management (Eunhee, Newton, Downey, & Benton, 2010, p. 113).

Limitations

Transfer students who entered the University of Nebraska-Lincoln with a deficiency were matched with transfer students who entered UNL without a deficiency. Students were matched on only two criteria: date of high school graduation, and cumulative transfer GPA upon entering UNL. Matching could have been improved by adding an additional measure that reflects number of total hours transferred to the UNL, which Ishitani (2008) noted was a strong predictor of academic success in transfer student. However, total hours transferred were not available in the study data set and

thus, students were only matched on the two criteria Data for the study were only current as of the Fall 2009 semester; students from the 2004-2005 cohort could have graduated in the current semester that is still in session, Spring of 2010, and still have graduated within the allotted six-year period. Because these data were unavailable, some students who were counted as “failed to graduate,” may have graduated in the spring semester of 2010. A large enough sample of students existed for the researcher to include the 2004-2005 cohort without including any students who might graduate in the spring semester of 2010. Finally, data used in the study was obtained from the UNL office of admissions. The data is entered by the processing staff and therefore there could be subject to a small amount of human error when the data is entered.

Chapter II

Literature Review

Deficiencies and College Readiness

Literature regarding deficiencies and success among transfer students is limited. Much of the research done on community college transfer students involves the notion of “transfer shock,” comparisons with native students and personal and demographic or environmental characteristics (Graham & Hughes, 1994, as cited in Laanan, 2001, p. 8). One possible reason for such limited literature on transfer students success related to academic deficiencies is the wide variety of admissions requirements for transfer students wishing to move to a four-year institution. A review of admissions policies posted on the websites Big XII conference institutions revealed that the only University of Nebraska-Lincoln and the University of Missouri-Columbia required a fourth-year high school mathematics course or equivalent for all students. While the great majority of students who transfer to UNL are admitted without any deficiencies, having either completed the high school core course requirements prior to their first college course or satisfied the requirement a previous college (UNL Admissions Web Site, n.d.).

While there is a lack of literature addressing of transfer students academic success and completion of high school core courses admissions requirements. There is considerable literature on college readiness of high school students wishing to attend postsecondary institutions.

Adelman (2006) published an extensive study for the U.S. Department of Education regarding student readiness for post secondary education. The following is a summary of the report:

The Toolbox Revisited is a data essay that follows a nationally representative cohort of students from high school into postsecondary education, and asks what aspects of their formal schooling contribute to completing a bachelor's degree by their mid-20s. The universe of students is confined to those who attended a four-year college at any time, thus including students who started out in other types of institutions, particularly community colleges. (p. xv)

According to the report, academic curriculum intensity in high school is one factor that predicts whether students will finish their degree in their mid-20s. Students who enroll in the highest level of academic intensity are more likely to meet this goal than students who do not (Adelman, 2006, p. xviii). The report defines the highest level of academic intensity as students from 9th to 12th grade who take:

- 3.75 or more Carnegie units of English
- 3.75 or more Carnegie units of mathematics; calculus, precalculus, or trigonometry as their highest level of mathematics
- 2.5 or more Carnegie units of science *or* more than 2.0 Carnegie units of core laboratory science (biology, chemistry, and physics)
- 2.0 or more Carnegie units of foreign languages
- 2.0 or more Carnegie units of history and/or social studies
- 1 Advanced Placement course or more; and no remedial English; no remedial mathematics. (p.27)

When the Adelman (2006) report was completed, the most important variable identified for degree completion was the intensity of a student's high school curriculum. The report also concluded that students who finished at least one course past Algebra II, were two times as likely to complete their bachelor's degree (p. 30).

Barry (2003) used Adelman's (1999) report to test the importance of mathematics beyond Algebra II at the community college level. She tracked 623 students for three

years that entered her community college. She found that over the three year period, students who completed a course more advanced than Algebra II were more likely than others to pass their first math course at the community college (Barry, 2003, p. 400). The report also found that 156 students of the 623 had completed more than Algebra II, and 114 of those students tested into a college level math course. Additionally, 78% of students that completed a course higher than Algebra II and later enrolled in a math course offered by the community college successfully completed the course (p. 400). This finding indicates less time and money spent to repeat courses, and higher likelihood of achieving this goal in college. The report concludes that students who take a rigorous math curriculum, beyond Algebra II, are more likely to succeed in college math, than those who do not (p. 406).

Trusty and Niles (2003) also conducted a study to test the importance of course work beyond Algebra II. Their study examined the effects of background variables and students' high school mathematics curricula on completion versus noncompletion of bachelor's degrees. The results revealed that of all high school curricular areas and courses, credits in intensive mathematics courses were most strongly related to degree completion (¶ 20). The study concludes by stating that the greater the number of intensive mathematics courses taken, the greater the chance of degree completion. These results are also important because they confirm the work of Adelman.

Other literature notes the need for students to become more college ready. Conley (2008) observes that “the likelihood that students will make a successful transition to the college environment is often a function of their readiness—the degree to which previous

educational and personal experiences have equipped them for the expectations and demands they will encounter in college” (p. 3). He defines readiness as:

the level of preparation a student needs in order to enroll and succeed, without remediation, in a credit-bearing general education course at a postsecondary institution that offers a baccalaureate degree or transfer to a baccalaureate program. Succeed is defined as completing entry-level courses at a level of understanding and proficiency that makes it possible for the student to consider taking the next course in the sequence or the next level of course in the subject area. The college-ready student envisioned by this definition is able to understand what is expected in a college course, can cope with the content knowledge that is presented, and can develop the key intellectual lessons and dispositions the course is designed to convey. (p. 4)

Conley (2008) continues his definition with a detailed look at course requirements for student to become college ready:

- English. The knowledge and skills developed in entry-level English courses enable students to engage texts critically and create well-written, well-organized, and well-supported products, both oral and written. The foundations of English include reading comprehension, literature, writing, editing, Information gathering, analysis, critiques, and connections. To be ready to succeed in such courses, students need to build vocabulary and word analysis skills. (p. 8)
- Mathematics. Students with a thorough understanding of the basic concepts, principles, and techniques of algebra are more likely to succeed in an entry level college mathematics course. College-ready students possess more than a formulaic understanding of mathematics. They have the ability to apply conceptual understandings in order to extract a problem from a context, solve the problem, and interpret the solution back into the context. (p. 8)
- Science. College science courses emphasize scientific thinking in all its facets. In addition to using all the steps in the scientific method, students learn what it means to think like a scientist. Laboratory settings are the environments where content knowledge and scientific thinking strategies converge to help students comprehend content knowledge fully. (p. 9)
- Social Studies. The social sciences entail a range of subject areas, each with its own content base, analytical techniques, and conventions. The analytical methods that are common across the social studies emphasize the skills of

interpreting sources, evaluating evidence and competing claims, and understanding themes and events within larger framework. (p. 9)

- World Languages. The goal of second-language study is to communicate effectively with and receive communication from speakers of another language in authentic cultural contexts. Learning another language involves much more than memorizing a system of grammatical rules. It requires the learner to understand the cultures from which the language arises and in which it resides, use the language to communicate accurately, and use the learner's first language and culture as a model for comparison with the second language. (p. 9)

The American College Test (ACT, 2005) found that too many students taking their exam were underprepared to attend postsecondary institution. They note that taking specific courses in English, biology, physics, and mathematics (beyond Algebra II) greatly increase a student's chance at succeeding in college. ACT established "benchmarks" that represent the level of achievement required for students to have a high probability of success in college courses such as English composition, algebra and biology (p. 1). With specific regard to mathematics, 74% of students who took trigonometry and calculus in addition to Algebra I & II and geometry met the benchmark for College Algebra (p. 12). While 55% who took those three course plus trigonometry and one additional mathematics course hit the benchmark.

The California State University system also saw a need to better prepare students to attend four-year institutions. A report authored by Knudson, Zitzer-Comfort, Quirk, and Alexander (2008) assessing student proficiencies in reading writing observed that:

as the percentage of students pursuing a four-year college degree continually increases, the demands placed on high schools to adequately prepare these students for college-level reading and writing also continually increase. A lack of preparedness is evident at the university level as a growing number of incoming freshmen arrive ill-equipped for college-level reading and writing. (p. 227)

Additionally, the report notes the increase in the number of students required to take remedial courses before they are able to take courses that count towards their major. The need to address remediation is a burden for both students and faculty at these institutions. The state system is now implementing a program that will identify students that would need remedial English and writing courses before they enroll at a state university. Student are able to take a course that is designed to prepare students to meet the demands of college-level reading and writing (Knudson et al., 2008, p. 228). The report also suggests that students are able to make up this remediation at the community college level, but should be proficient before transferring to a four-year institution. Finally, Knudson et al. (2008) conclude their report by explaining the role community colleges can play in helping students reach college readiness:

finally, because community colleges are also involved in placement testing and advisement, working with them to integrate developmental English, language arts, and math instruction into the high school curriculum for those students who need help is integral to improving students' readiness for college-level work. Community colleges play a vital role in K–16 partnerships and should be included as experts in developmental curriculum and instruction. (p. 231)

The literature clearly suggests that for a student to succeed at a four-year institution, a rigorous set of courses is required at the high school, and if not obtained there should be compensated for a community college prior to transferring.

The University of Nebraska-Lincoln's Admissions Policy Advisory Committee agreed, and in 1992 adopted an admissions policy charged with improving the quality of education for all UNL undergraduates, preparing them to be productive workers/citizens in our changing society (n.d., p. 16). The new academic requirements closely mirror those of Adelman (2006), and Conley (2008). They are: 4 units of English; 4 units of

mathematics (algebra and beyond); 3 units of natural science including one laboratory course; 3 units of social science; and 2 units of foreign language (p. 20).

Remediation

If students desiring to attend UNL are unable to meet the core course admission standards in high school, they are encouraged to make up these deficiencies at another institution prior to attending UNL (Final Report, 1992, p. 32). Courses that address high school deficiencies are often categorized as remedial or development courses. Most commonly students look to community colleges to fulfill these deficiencies. Community colleges play an important role in remediation; over 40% of first-year students at public two-year colleges take remedial courses (Betteringer & Long, 2005, p. 17). The purpose of remedial education is to provide underprepared students with the skills necessary to succeed in college and gain employment (p. 17). Course remediation is a controversial issue in higher education. Opponents of remediation argue that offering remediation courses in college works against efforts to motivate students to do well in high school, and that it detracts from the education of college prepared students by forcing instructors of other beginning courses to “dumb down” their content. Additionally, taxpayers and state boards wonder why funding is being provided to teach what should have been taught in high school (Oudenhoven, 2002, p. 35-36). Four-year institutions argue that remediation is not their responsibility, because the course work is not college level. Although there is much debate over remediation, almost all community college leaders agree that that serving underprepared students is an important part of the community college mission. Open-door admissions policies, affordable tuition, convenient locations,

an emphasis on teaching and learning, and a welcoming attitude make community colleges a logical starting place for many of these students (p. 37).

The community college is frequently the first post-secondary education students receive. By the late 1970's 40% of all first-time-in-college, full-time freshman were in a two-year institution (Cohen & Brawer, 2008, p. 23). "One of the roles the community college plays is to relieve universities from having to deal with underprepared freshman and sophomores. Therefore, community colleges make it possible for universities to enforce selective admissions requirements" (p. 23).

Solomon (2001) also notes the importance the community college plays in the transfer process: "The community college, through its college transfer program, provides an avenue to opportunity, bridging the distance from the junior to senior college and providing a pathway from one institution to another" (p. 50).

Additional Predictors of Success for Transfer Students

Transfer students have distinctive needs for information and advice, both at the "sending and "receiving" institutions. They often need special advising to help them mesh their previous academic work with the requirements of their new school. They are likely to encounter initial difficulties with a new environment that may not be addressed in orientation (Komvies, Woodward, & Associates, 2003, p. 56). Specifically, issues facing transfer students include: the college or university's negative attitude toward them; learning the new institutions admissions, registration, academic advising, housing and financial aid processes, and difficulties with involvement in student activities (Eggleston

& Laanan, 2001, p. 90). When these issues are not addressed, students' academic performance can suffer.

Transfer Shock

Students who transfer from a community college to a four-year institution are bound to meet challenges that can influence their performance at their new institution. This issue has been attributed, in part, to institutional differences in size, location academic rigor and competition among students (Laanan, 2001, p. 5). A term used in the literature to describe this struggle is "transfer shock," or the temporary dip in transfer students academic performance (or grade point average) in the first or second semester after transferring (p. 6). Additionally, Berger and Malaney (2003) describe transfer shock as a major reason why some students who do not make a successful transition from two-year to four- year colleges. In his early studies of success of among transfer students, Hills (1965) as cited in Laanan (2001) established three main conclusions about transfer students: transfer students should expect to suffer an appreciable drop in grades in the first semester; transfer student's grades tend to improve in direct relation to the length of their schooling; native students (students who began their academic careers at the four-year institution) as a group are shown to perform better than transfer students. Hills also noted that transfer students should be warned about the probability of transfer shock, and should expect to take longer to graduate than native students (p. 7). A meta-analysis done by Diaz (1992) identified all studies that tested the effects of transfer on academic performance and attempted to determine the magnitude of effect of transferring on academic performance (p. 280). The analysis reported 62 studies that met the

conditions for inclusion. Of the 62 reports, 13 showed that transfer students did not experience poor academic performance. The studies showed either a positive GPA change, zero GPA change, or no significant difference after transfer (p. 282). Forty-nine studies did indicate that transfer students suffered from transfer shock at least their first semester at the new institution. Of those 49 studies, 33 found that transfer students were able to recover portions of their lost GPA, 12 of these 33 studies showed that recovery of the GPA was completed at graduation. No study reported that students with transfer shock failed to experience some degree of GPA recovery (p. 282). The report also noted that the 62 studies offered numerous reasons for transfer shock, ranging from change in grading practices to adjustment to life at a large institution (p. 286).

New Environment

Transfer students are unique when they enter a new school, as they already have some time spent in the postsecondary environment. A study done by Townsend (2008) noted that:

Just as transfer students are experienced in the application process, they are also experienced as college students. Despite having these experiences, students still “feel like a freshman” in their lack of knowledge of how their new school works (for example where a student can park and under what conditions, where to go for student advising). However, these students were explicit about not being first-year students and did not want to be treated like them. (p. 73)

Additionally, students coming from a small campus, or particularly a community college, found the size of the campus and impersonal nature of the faculty daunting. Some community college students indicated they were not used to an apparent lack of faculty knowing who their students were or whether they came to class. Community college students were also more likely to indicate they had to stretch to meet the university’s

academic expectations (Townsend, 2008, p.73). Some students did have family and friends at the new institution to help ease the social adjustment; however, students were faced with making new friends at a place where most friendships were made during freshman year (p. 74).

Additionally, Cohen and Brawer (2008) also describe reasons that transfer students might have difficulty when making the transition to the four-year school. One possibility includes the idea that native students were tied into the formal network that advised them on which professors and courses to take to yield favorable results. Another concern is that transfer students may have completed their general education at the community college, but did not do as well when they entered more specialized courses at the universities. In addition, students may have passed courses at the community college that they would have potentially failed at a senior institution (p. 72).

Other factors such as age, gender and attainment of an associated degree also became factors in how transfer students recover from transfer shock. Keely and House (1993) noted in a study comparing transfer students and native students that transfer students who persist actually outperformed native students in regards to GPA. The study also noted that transfer students who earned their associates degree, seemed to perform better than those students who did not. By the fourth semester after transferring, transfer students who had earned their associates degree, had an average GPA of 3.042 versus 2.885 of students who did not complete their associates degree (p. 6). Women also earned higher GPAs than men, reporting an average GPA of 3.137 by the fourth semester, compared an average 2.829 for men (p. 6). Finally, the study found that

students 25 and older experienced very little transfer shock, and had an average GPA of 3.322 by their fourth semester (p. 7).

Is Transfer Shock Real?

Research exists that questions the validity of transfer shock and the notion of transfer ecstasy or the temporary rise in GPA of transfer students (Nickens, 1972). Cejda, Kaylor, and Rewey (1998) performed a study designed to measure the effect of transfer shock and transfer ecstasy within academic disciplines. Their results found that while students in the math and science disciplines saw their GPA drop, the drop was not statistically significant thus questioning the notion of transfer shock. While students in liberal arts and social sciences saw their GPA rise, the rise was not statistically significant questioning the idea of transfer ecstasy. The study suggests that definition of transfer shock and transfer ecstasy be used for only significant increases or decreases in transfer students GPAs (§20). The study also suggests that instead of transfer shock contributing to academic success among transfer students, specific majors may be a better way to predict success after transferring to a four-year institution (§ 21).

Conclusion

Most of the literature presented on the success of transfer students in the classroom revolves around a student becoming college ready. Although the literature regarding transfer student readiness is limited, a comparison of the research regarding the readiness of high school graduates for postsecondary study provides considerable insights. Based upon this literature, the likelihood that students will make a successful transition to the college environment is often a function of their readiness, in other words,

the degree to which previous educational and personal experiences have equipped them for the expectations and demands they will encounter in college (Conley, 2008, p. 3).

Such factors that may affect college readiness include: the completion of certain academic coursework prior to beginning at the four-year institution, most notably, math beyond Algebra II. Additionally, this review of the literature suggests that other non-academic factors such as “transfer shock” can be contributing factors as to why transfer students struggle at their new institution.

Chapter III

Research Design

This quantitative study could best be characterized as nonexperimental research, because the researcher has no direct influence on what has been selected to be studied, because it has already occurred and cannot be influenced (McMillan, 2008, p. 11).

Additionally, the study could be described as a comparative study, because it examines the differences between two groups based on a variable of interest (p. 11).

Purpose Statement

The purpose of this study was to examine the six-year graduation rate of transfer students who enter the University of Nebraska-Lincoln with a deficiency in a core course admission requirement. The research questions were:

1. Does having one or more deficiencies in a core course admission requirement upon entering UNL result in a lower six-year graduation rate than students who enter with all core courses admission requirements completed?
2. Does having a specific deficiency in a fourth year mathematics courses upon entering UNL result in a lower six-year graduation rate than students who enter with all core mathematics courses admission requirements completed?
3. Does having a specific deficiency in a core foreign language course upon entering UNL result in a lower six-year graduation rate than students who enter with all core foreign language course admission requirements completed?

4. Do graduating transfer students admitted with one or more core course deficiencies have lower cumulative GPAs transfer students who were admitted without a deficiency?

Hypothesizes

Based on the research questions the following hypothesizes were developed:

- H1: The six-year graduation rate among transfer students entering UNL with core course admission requirement deficiencies is significantly lower than the rate for transfer students who enter UNL with all core course admission requirements completed.
- H2: The six-year graduation rate among transfer students entering UNL with specific deficiency in a fourth year mathematics course is significantly lower than transfer students who enter UNL with all core course admission requirements completed.
- H3: The six-year graduation rate among transfer students entering UNL with a specific deficiency in foreign language is significantly lower than transfer students who enter UNL with all core course admission requirements completed.
- H4: Transfer students who entered UNL with one or more core course admission requirement deficiencies and then graduated have lower cumulative GPAs than graduates who enter UNL with all core course admission requirements completed.

The following are the null form hypothesizes that will be tested and reported in chapter IV:

HO1: There is no significant difference in the six-year graduation rate for transfer students entering UNL with core course admission requirement deficiencies, versus transfer students who enter UNL with all core course admission requirements completed.

HO2: There is no significant difference in the six-year graduation rate for transfer students entering UNL with a specific deficiency in mathematics versus transfer students who enter UNL with all core course admission requirements completed.

HO3: There is no significant difference in the six-year graduation rate among transfer students entering UNL with a specific deficiency in foreign language versus transfer students who enter UNL with all core course admission requirements completed.

HO4: There is no significant difference between the average cumulative GPAs of graduated transfer students who entered UNL with core course admission requirement deficiencies versus graduated transfer students who enter UNL with all core course admission requirements completed.

Data Collection

Before a complete analysis of transfer students could begin, there was a need for a large data set of transfer students that included important academic demographics about the students. These demographics included: student processing type (freshman, transfer

or international), admit status (admitted fully, or with a deficiency), type and number of deficiencies a student had, the student's transfer GPA upon entering UNL, the last enrolled term (when the student last enrolled, to track persistence), number of hours the student completed at UNL, student's GPA at UNL, and finally how the student exited UNL (graduated, dismissed, withdrew).

This data were tracked in the office of admissions at UNL. An initial letter was sent to the dean of admission, requesting the information, as well as a request to the Institutional Review Board. After both of their approvals, the data were released to the researcher.

Population

The population used in the study was drawn from previously collected admissions data at UNL. The data sets were separated for each of five years of admissions decisions: 2002-2003, 2003-2004, 2004-2005, 2005-2006, and 2006-2007. Each year contained a approximately 6,500 students who applied for admission to the university. After determining that success would be defined as graduation in a six-year period, the 2005-2006 and 2006-2007 data sets were dropped, because the students in those cohorts would not have the proper time needed to graduate from UNL. The data were then sorted to include only transfer students, which reduced the study population to approximately 750 students per year. Students who were indicated to be transfer international students were also dropped from the population, due to the complexity of comparing high school requirements outside of the United States. The data for each year were then further sorted into transfer students admitted with a deficiency (approximately 150 students) and

transfer students admitted without a deficiency (approximately 550 students). Table 1 illustrates the population of the study.

Table 1

Total Number of Transfer Students

Year	Total Transfer Students Admitted (Excluding International Transfers)	Transfer Students Admitted without a Deficiency (Excluding International Transfers)	Transfer Students Admitted with a Deficiency (Excluding International Transfers)
2002-2003	711	560	149
2003-2004	726	579	147
2004-2005	738	611	127

Table 2 illustrates how transfer students used in the logistic regression admitted with a deficiency were classified into the specific types of course deficiencies relevant to this study.

Table 2

Deficiency Classification

Year	Number of Students Admitted with Deficiencies	Students Admitted with Fourth-Year Math Def.	Students Admitted with Foreign Language Def.
2002-2003	139	91	49
2003-2004	145	77	66
2004-2005	96	51	47
Totals	380	219	162

Data Matching

Previous studies have documented that both the age of student and the GPA for all prior college-level course significantly predict the graduation rate of transfer students (Adelman, 2006; Berger & Malaney, 2003; Ishitani, 2008; Townsend, 2008). To assure that like students were being compared in this study, a matching design was selected. As Ishitanti (2008) notes:

transfer students between 21 and 25 years of age were 1.9 and 2.6 times more likely to depart than traditional aged transfer students in the first and third semesters, respectively. Transfer students who were 26 years old or older encountered even higher risks of departure over their first four semesters than those who were 21 years old or younger. These older students appeared to be most vulnerable to departure in the third semester where they are over 3.8 times more likely to leave the institution than traditional aged transfer students enrolled in the same semester. (p. 412)

In addition, Ishitani (2008) explains the rationale for matching on GPA:

unlike first-time native freshman students who submit their high school GPA or SAT scores as a part of the admission process, aptitude scores are not required for admission to the study institution for transfer students. Thus, in order to address the effect of transfer shock on student departure more correctly, overall transfer GPAs of transfer students were used as a proxy for academic aptitude. (p. 410)

For the academic years 2002-2003, 2003-2004, 2004-2005, 380 transfer students admitted with deficiency were chosen for the study. Those students were matched with 380 transfer students admitted without a deficiency, based on the following criteria; year in which student graduated from high school to indicate the students' age and cumulative transfer GPA.

The matching process was rather simple. For example, if from the data set of 2002-2003 transfer student A was admitted with a deficiency, graduated in 1999 and transferred with a GPA of 3.1, the student was matched with transfer student B admitted

without a deficiency who also graduated in 1999 and had a GPA $\pm .2$ of 3.1. Care was taken to make sure if there was no perfect match, and it was necessary to match above the GPA (3.0 matched with a 3.1) the next time a perfect match could not be found, the match was made lower (3.0 matched with a 2.9) If a transfer student with a deficiency could not be matched with a transfer student without a deficiency he/she was dropped from the data set. The purpose of matching the data was to ensure the comparison groups were comparable on the two best indicators of persistence to graduation.

Statistical Tests

The dependent variable in the study was graduating or not graduating in a six-year period. Much research and literature suggests that logistic regression be used in this type of study. According to Adelman (1999) in Trusty and Niles (2003):

logistic regression is the most appropriate form of analysis for studying bachelor's degree completion. Logistic regression models produce odds ratios for independent variables; these odds reflect the increase or decrease in the likelihood of the outcome (i.e., degree completion) for every one-unit increase in the independent variable.

For the final research question comparing the GPA's of graduating transfer students, a t-test was used. The t-test assesses whether the means of two groups are statistically different from each other. This analysis is appropriate whenever you want to compare the means of two groups (http://www.socialresearchmethods.net/kb/stat_t.php). These tests and outcomes will be discussed in Chapter IV.

Chapter IV

Results

The goal of this study was to determine if transfer students who entered UNL with one or more core course admissions deficiencies: (a) Had the same likelihood of graduating within a six-year period compared to transfer students who entered UNL with all core course requirements completed; (b) If having a deficiency in a fourth year mathematics course had a negative effect on the six-year graduation rate of transfer student; (c) If having a core course admissions deficiency in a foreign language had a negative effect on the six-year graduation rate of transfer students; (d) How the GPAs of transfer students who entered UNL with a core course deficiency and graduated compared with the GPAs of transfer students who entered UNL with all core courses completed and graduated within six-years. As was noted in Chapter III, students from the academic years 2002-2003, 2003-2004, 2004-2005 were matched based on year graduated from high school and cumulative transfer GPA. Tables 3-5 will illustrate the effectiveness of the matching process for each year.

Table 3

2002-2003 Matched Group

Student Type	Number of Students	Mean Cumulative Transfer GPA	Standard Deviation Cum Transfer GPA
With a Deficiency	139	2.988	.443
Without a Deficiency	139	2.996	.439

Table 4

2003-2004 Matched Group

Student Type	Number of Students	Mean Cumulative Transfer GPA	Standard Deviation Cum Transfer GPA
With a Deficiency	145	3.071	.493
Without a Deficiency	145	3.082	.490

Table 5

2004-2005 Matched Group

Student Type	Number of Students	Mean Cumulative Transfer GPA	Standard Deviation Cum Transfer GPA
With a Deficiency	96	2.938	.466
Without a Deficiency	96	2.921	.483

For the purposes of this study, the two groups were identically matched in regards to high school graduation year.

The goal of this study was to examine how core course deficiencies affect the six-year graduation rate of transfer students at UNL. A logistic regression analysis was utilized to address the first three research questions. To better understand the findings, an understanding of logistic regression is needed:

$\text{Exp}(b)$ is the ratio of odds for two groups where each group has a values of X_j which are one unit apart from the values of X_j in the other group. An $\text{Exp}(b) > 1$ means the independent variable increases the logit and therefore increases odds(event). If $\text{Exp}(b) = 1.0$, the independent variable has no effect. If $\text{Exp}(b)$ is less than 1.0, then the independent variable decreases the logit and decreases odds(event). For instance, if $b_1 = 2.303$, then the corresponding odds ratio (the exponential function, e^b) is 10, then we may say that when the independent

variable increases one unit, the odds that the dependent = 1 increase by a factor of 10, when other variables are controlled. (Garson, 2009)

The following tables illustrate the results of the logistic regression analyses.

HO1: There is no significant difference in the six-year graduation rate for transfer students entering UNL with core course admission requirement deficiencies, versus transfer students who enter UNL with all core course admission requirements completed.

Table 6

Students Admitted Without a Deficiency

Admit Status	B	S.E.	Df	Sig.	Exp(B)
No Deficiency	.712	.156	1	.000	2.038
Constant	-1.020	.116	1	.000	.361

The logistic regression analysis reveals that the Exp (B) is 2.038 which predict that the odds of a graduating are 2.038 times higher for those admitted without deficiencies than those admitted with deficiencies. Therefore the logical regression rejects the null hypothesis, indicating there is a significantly lower six-year graduation rate for students entering UNL with a core course admissions requirement deficiency.

Table 7 illustrates the logistic regression analysis for the second hypotheses presented in null form below.

HO2: There is no significant difference in the six-year graduation rate for transfer students entering UNL with a specific deficiency in mathematics versus transfer students who enter UNL with all core course admission requirements completed.

Table 7

Students with a Fourth-year Mathematics Deficiency

Admit Status	B	S.E.	Df	Sig.	Exp(B)
4YRMATH DEF	-.362	.185	1	.050	.696
Constant	-.462	.096	1	.000	.630

The logistic regression analysis shows that the Exp (B) is .696 which predicts that the odds of transfer students graduating after entering UNL with a mathematics deficiency are .696 lower than students who enter UNL without a mathematics deficiency. Therefore, the null hypothesis is rejected, indicating that there is significantly lower six-year graduation rate for students with a mathematics deficiency.

Table 8 illustrates the logistic regression analysis for the third hypothesis presented in null form below.

HO3: There is no significant difference in the six-year graduation rate among transfer students entering UNL with a specific deficiency in foreign language versus transfer students who enter UNL with all core course admission requirements completed.

Table 8

Students with a Foreign Language Deficiency

Admit Status	B	S.E.	Df	Sig.	Exp(B)
LANGDEF	-.338	.140	1	.016	.713
Constant	-.462	.096	1	.000	.630

The logistic regression analysis shows that the Exp (B) equals .713 which predicts that the odds of transfer students who enter UNL with a deficiency are .713 lower than students who enter UNL without a foreign language deficiency. Therefore null hypothesis is rejected indicating that there is significantly lower six-year graduation rate for students with a foreign language deficiency.

Finally a t-test was used to measure the cumulative GPA of transfer students who did graduate, but were admitted with a deficiency, compared with transfer students who graduated, and were admitted without a deficiency.

HO4: There is no significant difference between the average cumulative GPAs of graduated transfer students who entered UNL with core course admission requirement deficiencies versus graduated transfer students who enter UNL with all core course admission requirements completed.

Table 9

GPAs of Six-Year Graduates

Admit Status	N	GPA	Std. Deviation	Std. Error Mean
One or More DEF	101	2.98258	.537747	.053508
No DEF	161	3.06337	.618686	.048759

The t-test indicated that there was no significant difference between the GPAs of transfer students who entered UNL with a deficiency versus those who entered with no deficiencies. Therefore, the null hypothesis cannot be rejected.

Summary

The results illustrated in Tables 6-9 indicate that:

1. Not having a deficiency in a core course admission requirement greatly increases the odds (2.038) that students will graduate within six years of admission.
2. If a transfer student has a core course mathematics deficiency, the odds of graduating decrease significantly (.696).
3. If a transfer student has a core course deficiency in a foreign language course, the odds of graduating decrease significantly (.713).
4. The difference in graduating GPAs among transfer students who are admitted with a deficiency compared to transfer students admitted without a deficiency is not statistically significant.

Chapter V

Discussion

The purpose of this study was to examine the six-year graduation rate of transfer students who enter the University of Nebraska-Lincoln with a deficiency in a high school core course admissions requirement. Data from the office of admissions were used to evaluate the transfer students admitted in 2002-2003, 2003-2004, and 2004-2005 years. Students admitted with core course deficiencies were matched to students admitted without admission deficiencies on the bases of high school graduation year and cumulative transfer GPA. The study examined two specific admission deficiencies; mathematics and foreign language. The study also compared the graduating GPAs of transfer students admitted with a deficiency versus graduating students admitted without a deficiency. A logistic regression analysis was utilized to assess graduation rate differences, and a t-test was utilized to assess differences in graduating GPAs for the two groups.

Summary of Findings

1. There is a significant difference (2.038) in the six-year graduation rate for transfer students who enter UNL with a core course admissions requirement deficiency.
2. There is a significant difference (.696) in the six-year graduation rate for transfer students who enter UNL with a core course admissions requirement deficiency in mathematics.

3. There is a significant difference (.713) on the six-year graduation rate for transfer students who enter UNL with a core course admission requirement deficiency in foreign language.
4. There is no significant difference in graduating GPAs among transfer students who enter UNL with a core course admission deficiency, compared with transfer students who enter UNL with all core course admission requirements complete.

Implications

Six-Year Graduation Rates

Students who do not take an intense level of coursework or become college ready before entering a four-year institution are more likely to struggle academically once they enroll at the institution (Adelman, 2006; Berger & Malaney, 2003; Conley, 2008; Trusty & Niles, 2003). Most of this research was conducted with regard to high school students preparing for college; however, as the data from this study demonstrates, becoming college ready and completing a high level of coursework before transferring to another institution is as important to transfer students as it is to high school students. A fourth-year mathematics course, in particular, seems to be the biggest indicator of graduation among transfer students. Students who complete four years of mathematics (algebra and beyond) more than double their odds of completing their bachelor's degree (Adelman, 2006; Barry, 2003).

The Final Report of the UNL Admissions Policy Advisory Committee (n.d.) recommended a high intensity level of course study before students could be admitted.

The report emphasized that the new admissions requirements were not to close the doors to students; instead, the goal was to give students more opportunity to succeed while at UNL. As the report noted: the intent of these proposed admission requirements is not to keep students out of UNL, but rather, to ensure that new students have an adequate base of prior academic work upon which to build a successful college career on this campus (p. 32). The report also noted that students who did not meet these academic requirements could make them up at another four-year institution, or at a community college (p. 32). Nowhere did the report conclude that transfer students could be conditionally admitted with one or more deficiencies as long as they made them up in their course work at UNL. However, approximately 150 transfer students with deficiencies are admitted to UNL every year. There are a number of reasons why the transfer students may be admitted with a deficiency, including: a high GPA at the institute they are transferring from; high ACT score in high school; or the student may be deficient in an area not as important to students' majors. For example, an engineering student deficient in a foreign language is not as crucially impaired as if he/she were deficient in math; however, the literature, research, and data from this study all indicate that entering a four-year institution with a deficiency, of any kind (especially mathematics), has an adverse effect on the odds of graduation in six years.

Retention

Although this study defined success as graduating with a bachelor's degree in a six-year span, the lower odds for a number six-year graduation rate among deficient transfer students would indicate low retention, as well. Allen, Robbins, Casillas, and Oh

(2008) also draw similar conclusions noting that these shockingly low six-year graduation rates suggest that persistence toward degree attainment remains a significant problem needing remediation. As a result, institutions are directing substantial resources towards intervention programs, hoping to improve persistence (p. 647). The Final Report of the UNL Admissions Policy Advisory Committee (n.d.) also implemented the new admissions policies with the improvement of retention in mind, as the report concluded, “it is expected that implementing these new standards will be a very positive step in UNL’s effort to increase the percent of student retention to the sophomore year and beyond” (p. 32). Therefore, it can be assumed that based on the low six-year graduation rate, students enrolling at UNL with a deficiency have a more difficult time persisting than those who do not.

Graduating GPAs

An interesting finding of the study was the similarity in graduating GPAs among transfer students who enter UNL with a core course admission deficiency compared with transfer students who enter UNL with all core course admission requirements complete. The data suggests that if a transfer student admitted with a deficiency persists to graduation, they perform as well academically as transfer students who enter UNL with all courses complete.

Support Programs

If UNL continues to admit students with core course admission requirement deficiencies, plans must be implemented to foster student success. Eggleston and Laanan (2001) also suggest that programs are needed to support transfer students:

Support programs have proven to be an essential element in the success of native students in the academic performance and baccalaureate degree attainment, and such successes have often been used as a recruitment tool for various colleges and universities. Support programs tailored to assist transfer students would have the same effect. (p. 87)

Additionally, the authors note that, although students continue to experience problems adjusting to these campus environments, senior-level institutions are failing in their responsibility to meet the needs of transfer students, as support programs specifically for transfer students do not formally exist in most of those institutions (Eggleston & Laanan, 2001, p. 92).

Silverman, Aliabadi, and Stiles (2009) suggest that could be transfer student orientation could be helpful in assisting the transfer students in their transition to a new four-year institution:

Transfer Student Orientation. Develop mandatory new student orientation programs specifically designed for transfer students. Topics covered in the orientation should include general information about campus, such as the location of specific offices needed by transfer students, information about financial aid, parking, transportation, food services, student advising, campus childcare, student organizations, and tutoring. Some unstructured time in the orientation should be allowed for students to meet students like themselves. (p. 236)

At the University of Nebraska-Lincoln, all transfer students are required to attend a Transfer New Student Enrollment day, which covers many of the topics described above. Based upon that program, UNL does work to welcome and prepare new transfer students through orientation.

Academic Advising

Flaga (2006) also noted that transfer student orientation, campus involvement, mentor programs and on-campus living were keys to success for transfer students

(pp. 13-15). Additionally, she commented on the importance of students meeting with an academic advisor at the institution before they transfer:

meeting with a university advisor before transferring will help to confirm or deny a student's interest in a major. If students find they are not interested in a major, they can negotiate the environment by changing their major sooner- which will assist in a timely graduation. Overall, the more information students have, the easier the transition will be. (p. 12)

Equally important to the transfer students' success is academic advising once the student reaches campus. "Successful academic advising efforts have consistently resulted in increased student persistence, better faculty-student interaction, and improved social and intellectual development among students" (Grites, 1998, p. 29). In order to increase graduation rates and retention, transfer students who enter UNL with a core course deficiency should be required to meet with a special academic advisor until that deficiency is removed. Data and literature about the importance of removing the deficiency should be explained to the student. Finally, the student should be given a specific allotment of time to remove the deficiency.

Finally, students at UNL should be held accountable to make up their core course academic deficiencies. If a student is admitted with a deficiency he or she should have a set period of time to make of the deficiency. The student should report to an academic advisor until the deficiency is removed in the first year he or she is attending UNL.

Future Research

1. Although the data used in this research consisted of a relatively large population (380 students), it only included three cohorts of years 2002-2003,

2003-2004, 2004-2005. Similar studies could be done to see how classes from 2005-2006, 2006-2007 etc. might fare in comparison.

2. Graduation within six-years was the only variable defining success; students may have left UNL for a time and then returned and graduated beyond this six-year period. More in-depth tracking of transfer students could give researchers a better idea of the effects core course admission requirement deficiencies have on the six-year graduation rate.
3. The study was limited to transfer students at the University of Nebraska-Lincoln. Conducting research that involves the cooperation of multiple institutions complicates the research process and can lengthen the time of completion, but it can also increase the value of the data (Kozeracki, 2001, p. 61). Similar research done with peer institutions may provide a better understanding of the material.
4. The research presented did not include other factors that go into student success, such as transfer shock. Qualitative studies might provide a better prospective on why transfer students fail to graduate in a six-year period.
5. Additional research could also be done at UNL examining a number of factors including the transfer students' gender, racial identity, number of hours transferred in, to determine if these factors also play a role in persistence.
6. Research could be done tracking transfer students admitted with a core course high school deficiency and their major to provide valuable insight into the role core course academic deficiencies play in certain academic disciplines. For

example, do students majoring in engineering really need a foreign language to be academically successful?

Final Conclusions

The purpose of this study was to examine the six-year graduation rate of transfer students who enter the University of Nebraska-Lincoln with a deficiency in a core course admissions requirement. The study examined two specific deficiencies; fourth-year mathematics and foreign language. The study also compared the graduating GPA's of transfer students admitted with a deficiency and graduating students admitted without a deficiency.

1. There is a significant difference (2.038) in the six-year graduation rate for transfer students who enter UNL with a core course admissions requirement deficiency.
2. There is a significant difference (.696) in the six-year graduation rate for transfer students who enter UNL with a core course admissions requirement deficiency in mathematics.
3. There is a significant difference (.713) on the six-year graduation rate for transfer students who enter UNL with a core course admission requirement deficiency in foreign language.
4. There is no significant difference in graduating GPAs among transfer students who enter UNL with a core course admission deficiency, compared with transfer students who enter UNL with all core course admission requirements complete.

The results are congruent with previous literature and research regarding student readiness and the six-year graduation rate. College readiness, particularly with regard to a four-year mathematics curriculum, greatly improves a transfer student's odds of graduating within a six-year period. As previously noted in The Final Report of the UNL Admissions Policy Advisory Committee (n.d.), the goal of requiring students to become more college ready is not to make UNL an elitist school, or close the doors on anyone. The goal is to give students the tools needed to be successful while attending the university (p. 32).

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Appendix

February 9, 2010

David Belieu
Department of Educational Administration

James Griesen
Department of Educational Administration
125 TEAC UNL 68588-0360

IRB Number: 20100210568 EX

Project ID: 10568

Project Title: Does having a core course deficiency predict academic success among transfer student at UNL.

Dear David:

This letter is to officially notify you of the approval of your project by the Institutional Review Board (IRB) for the Protection of Human Subjects. It is the Board's opinion that you have provided adequate safeguards for the rights and welfare of the participants in this study based on the information provided. Your proposal is in compliance with this institution's Federal Wide Assurance 00002258 and the DHHS Regulations for the Protection of Human Subjects (45 CFR 46) and has been classified as exempt category 4.

You are authorized to implement this study as of the Date of Final Approval: 02/09/2010. This approval is Valid Until: 09/01/2010.

We wish to remind you that the principal investigator is responsible for reporting to this Board any of the following events within 48 hours of the event:

- Any serious event (including on-site and off-site adverse events, injuries, side effects, deaths, or other problems) which in the opinion of the local investigator was unanticipated, involved risk to subjects or others, and was possibly related to the research procedures;
- Any serious accidental or unintentional change to the IRB-approved protocol that involves risk or has the potential to recur;
- Any publication in the literature, safety monitoring report, interim result or other finding that indicates an unexpected change to the risk/benefit ratio of the research;
- Any breach in confidentiality or compromise in data privacy related to the subject or others; or
- Any complaint of a subject that indicates an unanticipated risk or that cannot be resolved by the research staff.

This project should be conducted in full accordance with all applicable sections of the IRB Guidelines and you should notify the IRB immediately of any proposed changes that may affect the exempt status of your research project. You should report any unanticipated problems involving risks to the participants or others to the Board.

If you have any questions, please contact the IRB office at 472-6965.

Sincerely,

Becky R. Freeman, CIP
for the IRB

Becky,

David Belieu has been granted access to our data for his research project.

If you have any questions, just let me know.

Take care,

Alan

Alan L. Cerveny
Dean of Admissions
The University of Nebraska-Lincoln
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acerveny2@unl.edu