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Early Engagement and Academic Outcomes of First-Year Students at UNC Charlotte

Sandra L. Dika,
Mark M. D'Amico
Theodore W. Elling
Bob Algozzine
Krystal Foxx
Dia Harden

RICHARD LAMBERT
CHUANG WANG
MARK D'AMICO
SERIES EDITORS

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CEME
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UNC CHARLOTTE

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Introduction

Most colleges and universities are interested in increasing student success and implementing strategies to do so (Tinto, 1999). In recent years, this focus and related efforts have also translated to the higher education policy environment (see, e.g., Lee et al., 2011; Reyna, 2010; Shapiro et al., 2012). From 1995 to 2009, first-time, first-year student enrollment in U.S. higher education increased by approximately 48%, and an additional 11% increase is projected by 2020 (Hussar & Bailey, 2011). While greater enrollment is a move in the right direction, some of the established completion goals such as the College Board's "55 by 25," which seeks to have at least 55% of those aged 25-34 with a college degree by 2025 (Lee et al., 2011), cannot be realized through increased enrollment alone. At this time, approximately 22% of first-year college students do not return for their sophomore year at public Ph.D. granting institutions (ACT, 2011). Certainly, efforts must include expanding access, gaining a better understanding of student attrition, and enacting data-driven efforts for student success.

While there are many important college student sub-populations (e.g., freshmen, transfers, adult students), this study focuses exclusively on first-year students entering higher education. Much has been published on this population regarding pre-entry characteristics that are potential barriers to their success, including race/ethnicity, family background, and previous academic preparation and achievement (Bowen, Kurzweil, & Tobin, 2005; Horn, 1998; Ishitani, 2003, 2006; Lotkowski, Robbins, & Noeth, 2004; Nuñez & Cuccaro-Alamin, 1998; Riehl, 1994; Tinto, 2006; Walpole, 2008). Our understanding of student learning and development in college has been informed largely over the past two decades by research that demonstrates the predictive power of time spent engaged in educationally purposeful activities, that is, student engagement (e.g., Astin, 1993; Carini, Kuh, & Klein, 2006; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008; Pascarella & Terenzini, 1991).

Purpose and Conceptual Framework

The purpose of this study was to identify how pre-entry attributes, goals, and institutional experiences related to the early integration of first-year students attending the UNC Charlotte. This exploration of early integration and academic outcomes of first-year students uses Tinto's (1993) Longitudinal Model of Institutional Departure as the theory upon which to select and categorize relevant variables according to the key elements (pre-entry attributes, goals, experiences, and integration). Furthermore, pre-entry attributes, goals, institutional experiences, and perceived early academic and social fit/integration were used to predict multiple student outcomes (see Figure 1).

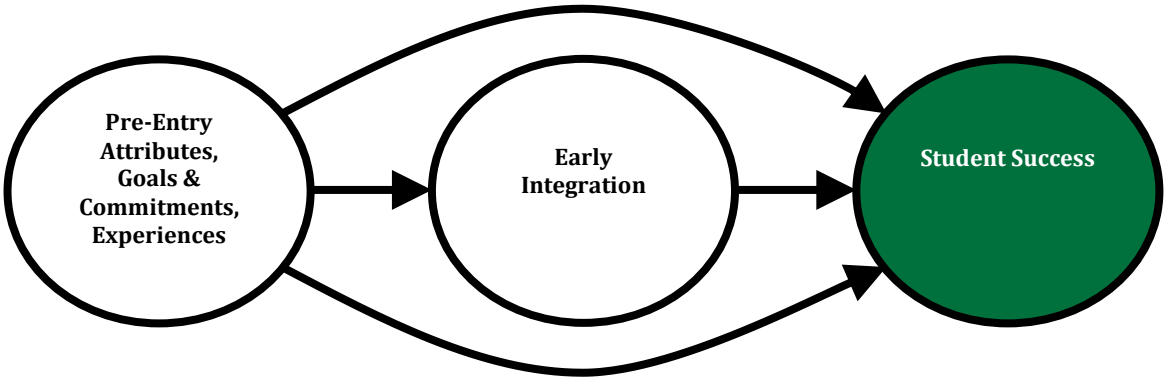

Figure 1: Conceptual Framework

Method

Research Questions

The following research questions guided this study:

1. To what extent are elements from Tinto's (1993) Longitudinal Model of Institutional Departure related to indicators of early academic and social fit for first-year students at UNC Charlotte?
2. To what extent are elements from Tinto's (1993) Longitudinal Model of Institutional Departure, including early academic and social integration, predicting student outcomes measured by second- and third-semester enrollment, first- and second-semester GPA, and first- and second-semester earned-hours ratios of first-year students at UNC Charlotte?

Sample and Variables

The UNC Charlotte's Division of Student Affairs administered the Evaluating Academic Success Effectively (EASE) survey, which provided data on first-year students six weeks after arriving at the University for their initial college experience. The locally-developed 50+ item instrument measures early academic and social integration to aid in targeting interventions and includes topics based on retention research such as academic preparedness, peer group interactions, interactions with faculty/staff, involvement in first-year programs, academic goals, self-appraisal of academic performance, social integration, employment, family support, and financial resources (see e.g., Tinto, 1993; Astin, 1996). Survey data were matched with student records to capture first-year outcomes. The specific variables selected for inclusion can be viewed in Table 1.

The sample consisted of 1,992 first-year students who completed the EASE survey in the fall semesters of 2008, 2009, and 2010. The first-year sample consisted almost entirely of students under 24 years of age (98%). The majority of participants were women (62%) of Caucasian American descent (68%), with the largest underrepresented group being African American (14%). 62% of students lived on campus or within one mile of campus in adjacent housing, and 71% indicated they did not work at the time of the survey, with only 11% working more than 20 hours per week.

Data Analysis

All variables were examined using both descriptive statistics and frequencies. Then, multiple regression analyses were used to predict early academic and social fit based on the pre-entry attributes, goals and commitments, and institutional experiences. Both multiple linear (GPA) and logistic (earned hours, reenrollment) regression analyses were utilized to predict the student success outcomes at the end of the first semester, second semester, and at the one-year enrollment period. Statistical tests were assessed at the α=.05, .01, and .001 levels.

Results

Early Integration

Table 1 displays the statistically significant predictors for early academic and social fit. Perceived preparation in writing papers, perceived family support, participation in class, first-generation status, and participation in a club or sport are significant positive predictors for both types of fit. Additionally, math preparation was significant for academic fit, and studying with peers outside of class was significant for social fit.

Student Outcomes

Table 1 also displays the statistically significant predictors for student success outcomes. Predicted GPA (a measure used in the admission process at UNC Charlotte), perceived preparation in math, family support, participation in a club or support, perceived academic fit, and perceived social fit were all positive predictors for multiple outcome measures. Being male, first-

generation, and social fit were all negative predictors for multiple outcomes. The social fit finding is negative for GPA, but positive for the likelihood of returning to college.

Table 1

Prediction models on early integration and academic outcomes

		First Six Weeks		First Semester		Second Semester			Third Semester
		Early Academic Fit	Early Social Fit	Fall GPA	Fall Earned Hours	Spring Enrollment	Spring GPA	Spring Earned Hours	Second Fall Enrollment
	Model R^2	0.09	0.13	0.17	0.13[1]	0.07[1]	0.16	0.08[1]	0.05[1]
Pre-entry Attributes	Predicted GPA			+++	+++		+++	+++	+++
	24 or older								
	African American								
	Male		+	---	-		--	-	-
	First generation	+	+				--	-	-
	Distance from campus							-	
	Preparation in math	+++		+	+		++	+	
	Preparation in writing	++	++						
	Work more than 15 hours								
	Family support	+++	+++	+++	+++		+	+++	
Institutional Experiences	Participation in class	+++	+++						
	Ever met with faculty member			+					
	Ever talked with academic advisor						+		
	Participation in club or sport	++	+++	+++					+++
	Study with peers outside class		+++						
Integration	Early academic fit			+++	++	++	++		+++
	Early social fit			--		+++	--		+++

[1]Nagelkerke R^2 + or -, p<.05 ++ or --, p<.01 +++ or ---, p<.001

Discussion

Guided by Tinto's (1993) theory, the analysis included discrete, but categorized, independent variables that included pre-entry attributes, goals/commitments, institutional experiences, and integration. Within each of these categories, at least one of the variables displayed statistical significance in one or more models. Among the pre-entry attributes, academic preparation was clearly a positive indicator of the student outcomes. With predicted GPA (the Predicted Grade Index used in admissions decisions) being significant in predicting five of the six outcome variables, this finding validates the first-year admission process. In addition, student perceptions of their academic preparation, especially in math, demonstrated significance in predicting success. When considering demographics, age and ethnicity were not significant, but being male and first-generation were negative predictors of several outcomes. Perhaps what is most concerning is that they were both negative predictors of students' return for the second year of college. While a withdrawal does not necessarily mean a complete departure from higher education, it does indicate some academic or elective reason for leaving UNC Charlotte.

When considering the two variables representing commitments to college, work had no influence on any of the variables, but family support was positive for academic and social fit and several of the outcomes. The family support variable may demonstrate a connection between feeling supported and feeling connected, and although it was a significant predictor of some outcomes, it had no effect on retention in either the second or third semester.

Institutional experiences are particularly important to this study, since it is these experiences that have the greatest potential to be influenced by colleges and universities. While class participation and studying with peers aid first-year students in experiencing perceived social fit, they had no influence on student outcomes; however, participation in a club or sport did have a positive effect on first-semester GPA and second-year retention. In other words, the academic activities did not influence success, while clubs/sports did. The findings showed only limited positive findings with meeting with faculty and advisors; however, the timing of the survey and the actual questions asked may have influenced the results. First, the survey question on faculty involves meeting with a faculty member "about an academic difficulty or other issue." This question may not have captured data related to all faculty meetings. Second, at only six weeks into the semester, many students would not have met with an academic advisor, since second semester registration had not yet begun.

Finally, perceived academic fit was predictive of most outcome variables, but the influence of perceived social fit was perhaps more interesting and revealing. Social fit was positively associated with retention, which fits Tinto's model that emphasizes the social aspect of college in addition to the academic. Social fit also predicts lower first- and second-semester GPAs. So, those who perceive a good social fit after six weeks may not do as well in terms of grades, but they are more likely to stay at UNC Charlotte. Therefore, the primary recommendation following this analysis is to consider activities and interventions that may contribute to both social and academic fit for first-time students. While their prior academic performance measured by the predicted GPA may demonstrate the most consistent effect among the pre-entry attributes, their perceptions of social and academic fit may influence their decision to persist at UNC Charlotte.

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