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Kristyn Muller

Emily Feuer

Meghan Nyman

Karen Sokolowski

Leah Rotella

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Examining Predictors of First Year College Student Retention

Kristyn Muller
University at Albany
kmuller@albany.edu

Emily Feuer
University at Albany

Meghan Nyman
University at Albany

Karen Sokolowski
University at Albany

Judy Squadere
University at Albany

Leah Rotella
University at Albany

Abstract

The researchers developed a mixed-methods study to determine what characteristics of the student experience are associated with college student retention. The study used the College Persistence Questionnaire (CPQ) as the primary tool to evaluate students' likeliness to persist at their university and then conducted individual interviews with students to gain a greater understanding of their academic and social habits. The findings suggest that efforts to improve student retention must impact student experiences both in and out of the classroom.

Keywords: college student, retention, persistence, student affairs, mixed-methods, College Persistence Questionnaire (CPQ)

College student retention is a primary concern for higher education institutions in the United States. Economic challenges of the early 2000s have led to declining enrollment at colleges and, paradoxically, a job market that requires a college degree in more fields than ever

before. Colleges are striving to retain students at higher rates to improve outcomes for both the student and the institution. This study sought to identify the key predictors of retention for students at a large public research university in the Northeast. Retention, for the purposes of this study, was defined as continued enrollment from the second semester of the first (freshman) year to the first semester of the second (sophomore) year.

Literature Review

Theories regarding retention have been prolific since Tinto introduced his student integration model in the 1970s (Berger & Lyon, 2005). Tinto provided a better understanding of the complex nature of student departure and persistence by describing issues associated with becoming a new member of a college community. He explained that students' sense of belonging influenced their decision to stay at or leave an institution (Tinto, 1988). In the years immediately following Tinto's landmark study, most research studied retention through a psychological lens (e.g., Bean & Eaton, 2001). While this perspective is useful for understanding a student's mindset, it does not provide a clear framework for institutional improvement aimed at enhancing retention. Researchers more recently have focused on trying to pinpoint tangible reasons for student departure, developing ways to identify students at risk during their freshman year, and providing recommendations for institutional actions to improve student retention.

Reasons for Student Departure

Multiple studies have focused on identifying the primary reasons why students depart from an institution. Three factors are often found in the literature: institutional commitment, academic self-efficacy, and sense of belonging/involvement. Davidson, Beck, and Milligan (2009) found institutional commitment (a student's confidence in the choice of their college or university) to be highly correlated with retention. Robbins et al. (2004) found academic self-efficacy (a belief in one's ability to succeed academically) to be one of the strongest predictors of college retention and GPA. The third factor found to be prevalent in the retention literature was a student's sense of belonging to the college or university, which can be facilitated by their involvement in campus activities. Students who participated in common activities with peers were more likely to be retained to the second year (Goguen, Hiester, & Nordstrom, 2010).

Identifying At-Risk Students

Recent research has focused on developing ways to identify students who are at-risk of leaving an institution. Some strategies to do this included analyzing college entry data, administering persistence-focused surveys, and implementing early warning systems. Instead of broadly reaching out to the entire student population, colleges and universities can target their retention efforts to the students most in need of interventions.

Recommendations for Institutional Action

Tinto's (2012) newer framework outlined four conditions necessary for student success: expectations, support, assessment and feedback, and involvement. He asserted that institutions should focus on improvements within these areas to enhance student retention. Tinto (2012) claimed that students must set high self-expectations and faculty must set high expectations of students; students must have academic, social, and financial support; students need continual feedback so they can positively adjust their behaviors; and students will benefit from being academically and socially involved in campus activities. Some conditions may be more important than others depending on the student; overall, students are more likely to stay in college when all four conditions are met. Tinto (2012) offered advice for institutions and examples of best practices, but he acknowledged that every college or university would need to address these conditions in their own ways based on their current practices and campus culture.

The Current Study

Based on the literature, the researchers developed a mixed-methods study to gain a better understanding of student retention at a large research university in the Northeast. The researchers, who are primarily student affairs practitioners, had a specific interest in the extent to which involvement impacts retention, while also acknowledging involvement is one of many factors that may determine retention. The study addressed the question: What characteristics of the student experience are associated with retention?

The study was designed to both contribute to the research on student retention and provide feedback to the institution about how to craft meaningful interventions to increase retention.

Method

Part 1: Survey

Participants. A random sample of 992 freshman students were surveyed at a large public research institution in the Northeast U.S. All the students matriculated in fall 2015 and were retained in spring 2016. The survey had 146 respondents, which was a 14.7% response rate. Of the respondents, 64% identified themselves as women, 34% identified themselves as men, and 83% identified themselves as straight. The racial breakdown was 51% White, 18% Black/African American, 13% Asian, 15% Hispanic/Latino, and 3% other races. In addition, 4% of respondents identified themselves as international students, 25% as first-generation students, and 6% as Educational Opportunity Program (EOP) students.

Instrument. The study used the College Persistence Questionnaire (CPQ) (Davidson, Beck, & Grisaffe, 2015) as the primary tool to evaluate students' likeliness to persist at the university. The CPQ is comprised of 60 questions, which are rated on a 5-point Likert scale. The wording of the individual questions varied according to the nature of the question (i.e., to ask about satisfaction, frequency, etc.), but all the responses were coded based on 5-point favorability scores (-2 to +2) dependent on whether the response corresponded to a negative or positive college experience (Davidson et al., 2015). The questions measured 10 scales: institutional commitment, academic integration, financial strain, social integration, scholastic conscientiousness, motivation to learn, degree commitment, collegiate stress, advising effectiveness, and academic efficacy. In prior studies, the CPQ scales were found to be valid and reliable (Davidson et al., 2009; Davidson et al., 2015). Permission to use the instrument for this study was obtained from Davidson.

The survey included additional questions to determine whether students participated in any special programs such as a living-learning community (L-LC), first-year seminars, and EOP. The students were asked to identify the types of co-curricular events/activities/groups they had participated in during the preceding semester as well as key demographic information. The final survey contained 79 questions; all questions were optional.

Institutional data. Because the survey was not anonymous, the researchers were able to connect the respondents with other personal data collected by the institution, which included housing assignments, course registration status, and GPA.

Procedure. The survey was administered via email using Campus Lab's Baseline platform in the beginning of February 2016. Three reminder emails were sent to students who had not yet participated, and the survey closed after 18 days. As an incentive to take the survey, participants were entered in a raffle for one of five $25 gift cards to the campus bookstore.

The CPQ scaled scores were calculated using SPSS based on the construct models discussed in Davidson et al. (2015). In addition, bivariate and multivariate analyses were conducted using SPSS to explore any differences based on students' level of involvement, CPQ scores, and demographics.

Part 2: Interviews

Participants. The second part of the study recruited participants from the sample of students who completed the survey. Interviews were conducted with 20 students, but due to technical difficulties, there were only 16 recorded interviews to analyze. Of the 16 students, eight identified as women and eight as men, 15 identified as straight, and eight identified as White, three as Hispanic/Latino, two as Black/African American, and one identified as Asian. Three students identified as first-generation, three were EOP students, and none were international.

Interview protocol. The interview questions were based on Tinto's (2012) model of institutional action for college student persistence. The interview questions for this study were intentionally designed to gather data about each of Tinto's (2012) conditions for success. The protocol contained 14 questions that were asked to all students, and three questions that were asked depending on the student's reported level of involvement in co-curricular activities.

Procedure. Participants who completed the survey were invited via email to participate in an in-person interview. As an incentive, interview participants were each given a $10 gift card for the campus bookstore. The interviews occurred in mid-March of the student's first year. The interviewers were the members of the research team who were involved with the development of the research protocol. When participants arrived, they were asked to sign an informed consent form to acknowledge that their participation was voluntary and that the interview would be recorded. The interviews took 10-15 minutes to conduct.

A coding scheme was developed based on Tinto's (2012) framework and the common responses given by students. Three research team members separately coded each interview

directly from the interview recordings. The three coders combined their findings and came to a consensus on any codes that were not aligned.

Part 3: Follow Up

The current study was designed based on prior research findings and student retention theories to explore the factors that may predict retention. The participants were first year students enrolled in spring 2016, so it was important to also follow up in fall 2016 to determine which participants were retained and what factors were associated with those who were not retained. In the third week of the fall 2016 semester, a list of students enrolled was pulled from institutional records and a new variable was created to indicate which students were retained and which students were not.

Findings

Part 1: Survey

Given the role of the institutional commitment factor in predicting persistence in prior research, specific attention was paid to those correlations with other factor scores. Institutional commitment was significantly correlated with several other factors (see Table 1).

Table 1

Correlations between Institutional Commitment and Other CPQ Factors

	Academic Integration	Social Integration	Scholastic Conscientiousness	Motivation to Learn	Degree Commitment	Advising Effectiveness	Academic Efficacy
Institutional Commitment	.63***	.60***	.212*	.48***	.37***	.40***	.34***

** = $p < .05$; *** = $p < .001$*

Analyses of variance (ANOVAs) were used to test for differences in CPQ factor scores based on demographic variables (see Table 2). Race was the only demographic variable on which significant differences in CPQ scores were found. Hispanic/Latino (M = -1.17, SD = .59), Black or African American (M = -1.03, SD = .72) students scored lower than the other racial groups on financial strain ($F(4,111) = 3.75$, $p < .01$). Asian (M = 1.14, SD = .801) students scored lower than the other racial groups on degree commitment ($F(4, 120) = 6.60$, $p < .001$). The findings indicated that EOP students score higher on three of the CPQ factors.

Table 2

Statistically Significant Differences in CPQ Factors by EOP Status

		EOP	Not EOP
Institutional Commitment	*M*	**1.39**	.63
	SD	.54	1.00
	t	1.83	
	df	107	
Social Integration	*M*	**.88**	.32
	SD	.69	.87
	t	1.69	
	df	124	
Advising Effectiveness	*M*	**1.09**	.62
	SD	.50	.78
	t	1.68	
	df	122	

Note: Numbers in boldface indicate the higher mean score. Differences are significant at $p < .10$.

A significant difference was found for scholastic conscientiousness based on first generation status. Students who identified themselves as first generation students scored lower ($M = .70$, $SD = .72$) than students who did not identify themselves as first generation students ($M = 1.13$, $SD = .71$; $t(113) = -2.71$, $p < .01$). In addition, scholastic conscientiousness scores were significantly correlated with numbers of hours spent working off campus ($r(114) = -.20$, $p < .05$), such that students who worked more hours off campus scored lower on scholastic conscientiousness.

Students who were involved in any of the activities events or groups were labeled as involved, and those who selected "I am not involved on campus" were labeled as not involved. Significant differences were found for social integration based on students' involvement. The involved group scored higher ($M = .45$, $SD = .77$) than the not involved group ($M = -.33$, $SD = 1.10$) on social integration ($t(17) = 2.74$, $p < .05$).

For all survey participants, the verified mean cumulative GPA in spring 2016 was 2.94. Students with higher GPAs scored significantly higher on the CPQ factors as noted in Table 3.

Table 3

Correlation between GPA and CPQ Factors

	Financial Strain	Scholastic Conscientiousness	Degree Commitment	Academic Efficacy
Spring CUM GPA	.20*	.42**	.31**	.29**

** = p < .05; ** = p < .01*

At the beginning of May 2016, 12% of the sample were not yet registered for classes for the following semester, and 7% were not yet assigned to campus housing for the following

Table 4

Statistically Significant Differences in CPQ Factors by Housing Assignment

		Housing Assignment	**No Housing Assignment**
Institutional Commitment	*M*	**.81**	-.81
	SD	.80	1.36
	t	3.31**	
	df	7	
Academic Integration	*M*	**.69**	.19
	SD	.51	.54
	t	2.52**	
	df	101	
Social Integration	*M*	**.41**	-.09
	SD	.83	.80
	t	1.74*	
	df	109	
Motivation to Learn	*M*	**.32**	-.41
	SD	.56	.81
	t	2.46*	
	df	70	

Note: Numbers in boldface indicate the higher mean score.

** = p < .05; ** = p < .01*

semester (which is required). There were no significant differences between CPQ scores of students who were or were not registered for classes in May. However, there were significant differences for students who were or were not assigned to campus housing (see Table 4).

Part 2: Interviews

When analyzing the interview data, the research team categorized the interviewees into three groups based on their institutional commitment scores from the survey to explore differences in responses based on the participants reported likeliness to persist at the institution. The low group was more than one standard deviation beneath the mean, the middle group was less than one standard deviation from the mean, and the high group was more than one standard deviation above the mean (M = .674, SD = .996). There were three participants in the low group, nine in the middle group, and four in the high group. These groupings enabled the research team to explore the impact of different aspects of Tinto's (2012) framework as well as to further examine the quantitative findings.

Students in the high category seemed to be less impacted by financial strain and exhibited a greater sense of belonging than students in the middle or low categories. In the quantitative data, institutional commitment was not significantly correlated with financial strain; however, a potential relationship between the two variables appeared for some students. One of the students in the high category stated, "I'm kind of ignoring how much debt I'm going to be in when I graduate."

The students' interview responses for the questions asked about expectations, support, and involvement, as suggested by Tinto's (2012) framework, did not align with their institutional commitment groupings. For example, nine of the interviewees expressed that college was harder than they expected, three said that it was easier, and four expressed that their expectations were met; however, these responses were scattered throughout the three institutional commitment groups. All participants indicated that they could seek personal support from their peers, family, or professionals.

All interviewees were somewhat or very involved with activities on campus, except for two who identified themselves as commuter students. Students' level of involvement or their reason for getting involved did not correspond with their institutional commitment groupings;

however, students who were members of EOP or an L-LC did mention that those programs had a positive impact on their sense of belonging and commitment to the institution.

Part 3: Follow Up

Student retention was related to four of the CPQ factors as presented in Table 5.

Table 5

Statistically Significant Differences in CPQ Factors by Actual Retention

		Retained to Fall Semester	**Not Retained**
Institutional Commitment	*M*	**.84**	-.63
	SD	.86	1.12
	t	5.37***	
	df	107	
Social Integration	*M*	**.44**	-.49
	SD	.82	.74
	t	3.74***	
	df	101	
Motivation to Learn	*M*	**.36**	-.31
	SD	.57	.74
	t	2.73**	
	df	86	
Collegiate Stress	*M*	**-.39**	-.75
	SD	.65	.38
	t	2.91**	
	df	18.84	

Note: Numbers in boldface indicate the higher mean score.

*** = p < .05, *** = p < .001*

The factor with the strongest difference based on actual retention was institutional commitment, followed by social integration. These findings were like differences found based on

housing assignment, which means that spring semester housing assignment could be a good predictor of retention.

GPA was also found to be associated with actual retention (see Table 6).

Table 6

Statistically Significant Differences in GPA by Actual Retention

		Retained to Fall Semester	**Not Retained**
Spring Cumulative GPA	*M*	**3.00**	2.31
	SD	.63	1.16
	t	2.41*	

Note: Number in boldface indicates the higher mean score.

* = $p < .05$

Discussion

Findings from this study suggested that no singular condition was the most predictive of retention across all groups of students based on Tinto's (2012) framework. There were potential relationships with several areas including sense of belonging, financial strain, and institutional commitment. The results supported the value of using more than one method in retention research because some variables were found to be significant in one method, but not in the other. For instance, special attention was paid to institutional commitment, which was found to correlate significantly with several other factors in the survey, but the interview data did not demonstrate all the same relationships. Conversely, financial strain showed a relationship with institutional commitment in the survey data, but not in the qualitative data. Using both methods allows for a more complete, but also more complex, understanding of student retention.

The researchers found that structured communities such as EOP and L-LCs made an impact on students' attitudes toward their education and the institution even though general level of involvement was not significantly related to sense of belonging. Among students who participated in the interviews, their involvement in an L-LC or EOP was described as a key factor contributing to their high sense of belonging to the institution. It was clear that these

communities provided both academic and social support for the students. These findings encourage the institution to expand these programs and provide similar supports for the most vulnerable student populations.

This study supported the notion that institutions can and should try to identify students at risk to provide targeted interventions. The CPQ, one example of a predictive survey, contained factors that were significantly associated with actual retention. Institutional commitment and social integration may be especially important to measure when predicting students' likeliness to persist. This study concluded that, given the varied results across several different characteristics, no single area on campus can address the problem of attrition. The findings demonstrated that factors such as involvement in campus activities or grade point average cannot alone be improved by one or a few departments. Rather, retention strategies need to be collaborative across student affairs and academic affairs in order to make the greatest impact. Such cross-cutting strategies have the potential to address the entirety of a student's collegiate experience and ultimately lead to an increase in retention for an institution.

One major limitation of this study was the relatively small sample size of both the survey (146) and the interviews (16). Partly because of this sample size, this study did not capture the perspectives of many students who did not return to the institution. This study was not able to obtain information about other factors that may have impacted retention, including physical/mental health history, disability financial issues, or pre-college characteristics. Opportunities for future research include replicating and enhancing the study by adding more opportunities for in-depth responses from the participants in the interviews, and purposefully targeting students who may not be retained.

Conclusion

In seeking to identify the key predictors of retention for freshman students unique to the institution of study, the researchers concluded that attrition cannot be ascribed to any singular factor. Future research with a larger sample size may better address which characteristics of the student experience are association with retention. It is recommended that divisions of student affairs and academic affairs consider and implement retention strategies collaboratively; it was

the initiatives that positively impact both students' social and academic integration which yielded the most telling results in this mixed-method study.

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