

# Predicting the Success of First-Year Students in Learning Communities

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In 2010, the national retention rate for first-year students was **77.1%** at four-year institutions (NCHEMS, 2013).

## What do we know about first-year student retention and success?

- Student **academic performance** is the greatest predictor of retention and ultimate graduation (Astin, 1975; Hall, 2007)
- Student success in the **first semester of college** has a significant impact on persistence (Hosch, 2008; Tharp, 1998).
- Kuh (2008) identified ten High Impacts Practices (HIPs) that were found to be most effective at increasing retention and student engagement – one of which was the implementation of **learning communities**.

## What do we know about learning communities?

- Learning communities have repeatedly demonstrated **significant rewards** for both students and faculty (Hill, 1985; Huerta, 2004; Lardner & Malnarich, 2008; Smith, MacGregor, Matthews, & Gabelnick, 2004; Tinto, 2000).
- Andrade's (2008) meta-analysis of first-year learning community program studies indicated that learning communities contribute to **increased GPA** and **higher persistence rates** for first-year students.

**Research Question:** Are there variables that we know about students *prior to the start of classes* that can predict whether a student in a learning community will be retained or land on probation?

**METHOD:** Univariate and multivariate analyses (using logistic regression) were employed to determine relationships between pre-college variables and the dependent variables of **retention** and **probation status** for three consecutive cohorts of first-year students in learning communities (N=4,215).

**RESULTS:** Univariate analyses showed that college-ready females who were non-Hispanic, ineligible for Pell Grants, and regularly admitted were **more likely to be retained**. Non-college-ready males who were Hispanic, first-generation, alternatively admitted, and eligible for Pell Grants were **more likely to be on probation**. Successful students had higher SAT scores, took more hours in their first semester, were admitted and attended orientation earlier, and brought in more transfer hours.

Predictors of Retention in Various Logistic Regression Models							
Predictor	M1	M2	M3	M4	M5	M6	M7
High School Percentile	✓		✓	✓	✓		
Transferred Hours			✓				
SAT Score	✓						✓
Pell Grant Eligibility	✓		✓	✓			
Days since Admission	✓			✓			✓
Days since Orientation	✓	✓			✓		

M1 = Model for predicting retention independent of learning community, M2 = Sociology Learning Community, M3 = History Learning Community, M4 = Political Science Learning Community, M5 = Science Learning Community, M6 = Developmental History Learning Community, M7 = Other Learning Communities

Predictors of Probation Status in Various Logistic Regression Models							
Predictor	M1	M2	M3	M4	M5	M6	M7
High School Percentile	✓		✓	✓	✓		
Transferred Hours	✓		✓		✓		
SAT Score	✓			✓	✓		✓
Gender	✓						
Ethnicity	✓						
Pell Grant Eligibility	✓		✓				
Days since Admission	✓						
Days since Orientation	✓	✓	✓	✓	✓		

M1 = Model for predicting probation status independent of learning community, M2 = Sociology Learning Community, M3 = History Learning Community, M4 = Political Science Learning Community, M5 = Science Learning Community, M6 = Developmental History Learning Community, M7 = Other Learning Communities

**CONCLUSION:** Logistic regression models using pre-college variables can be used to **predict** future student performance, **target** interventions, and **assess** the effectiveness of individual learning communities.

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