



How Learning Communities Affect Retention

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Introduction

The SEEC project has focused on increasing engineering student success through Iowa State’s established learning communities as part of a collaborative, connection-based strategy. The project has helped increase the number of engineering learning communities among the College of Engineering departments and has helped establish learning communities specifically for transfer students, including the Engineering Admissions Partnership Program (E-APP). Retention data clearly indicates that a student’s participation in a learning community increases the likelihood that he or she will be retained through the first year.

The Project

Data for this project were collected from Iowa State University’s Institutional Research and Engineering Career Services. It includes semester-by-semester transcript data for approximately 13,400 students who were admitted to the College of Engineering from fall of 1999 through fall of 2009. Details about these data are described in the *SEEC Data Brief: Data Collection and Analysis Project—Retention*.

Figure 1

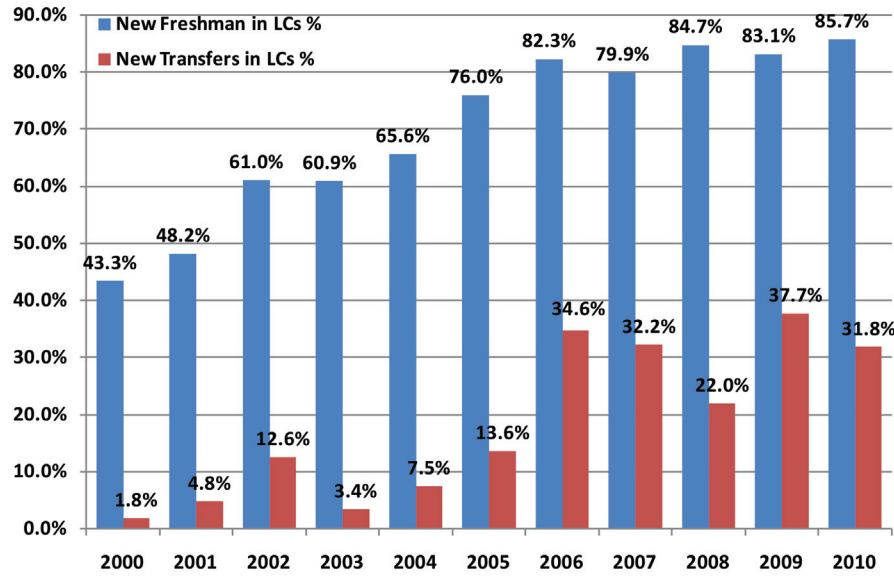
One Year, Two Year, and Three Year Differences in Retention Rates by Admission Type and Learning Community Participation

Period	Grouped By:	Admit Type		
		DFHS*	All Transfers	IA CC Transfers
One Year	Engineers in a LC	76.3%	70.8%	70.5%
	Engineers Not in a LC	68.4%	69.5%	64.9%
Two Year	Engineers in a LC	63.0%	59.7%	55.0%
	Engineers Not in a LC	55.0%	57.5%	54.9%
Three Year	Engineers in a LC	58.0%	51.2%	47.1%
	Engineers Not in a LC	50.1%	39.9%	43.9%

Admitted to the College of Engineering during Summer and Fall Semesters
 Measured as enrolled in engineering as of Fall Semester of the Years 2000-2010
 DFHS indicates admitted directly from High School
 All Transfers indicates transfer from any institution
 IA CC Transfers indicates transfer from any Iowa Community College

Figure 2

Percent in Learning Communities by Admit Status to Engineering



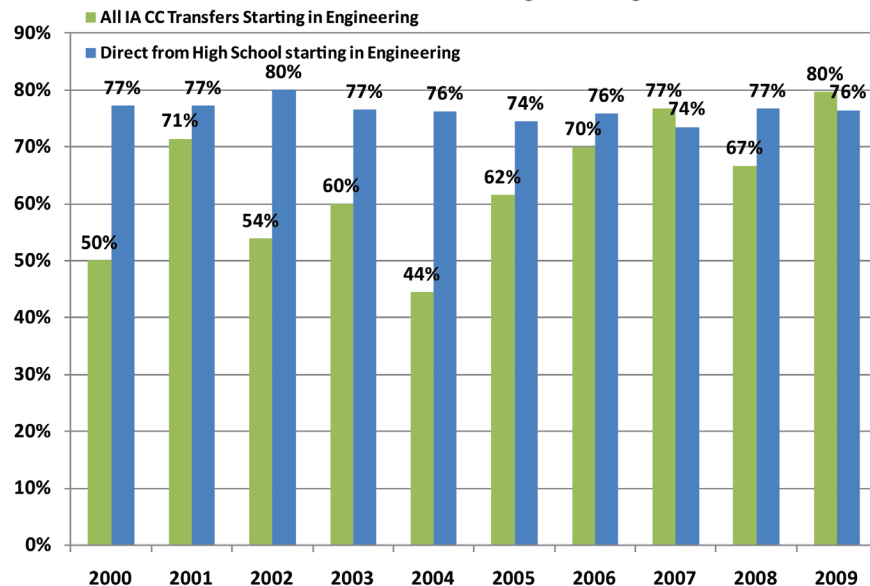
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Learning communities specifically for transfer students in the College of Engineering were not available until 2005, when a general college learning community for transfers was established. Engineering transfer students participating in learning communities prior to 2005 joined existing communities, such as major-specific groups. The Engineering Admissions Partnership Program (E-APP) was introduced for engineering transfer students in 2008 to specialize and expand on Iowa State's Admissions Partnership Program (APP). It was designated as an official

learning community in 2010. In 2009, the Department of Electrical and Computer Engineering designed a learning community specifically for transfer students and in 2010 the Department of Industrial Engineering followed suit. The Department of Mechanical Engineering has included a transfer team as part of their general learning community, and other departments have done so as well. The data shows that as specific transfer communities became available, transfer participation in learning communities increased.

Figure 3

Learning Community Participants' One-Year Retention Rates in Engineering



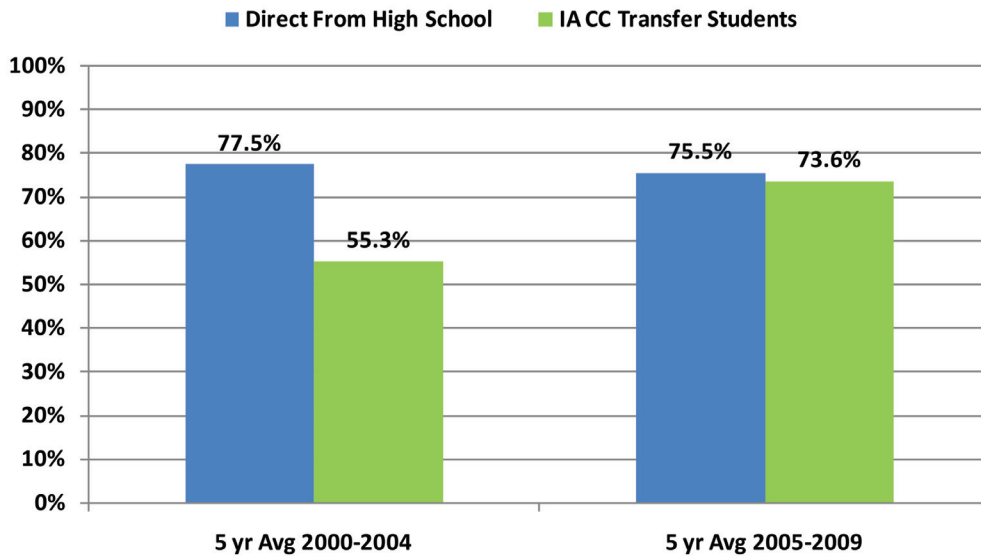
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Although participation in transfer learning communities is low compared to DFHS participation, it is clear that the impact on first-year retention of transfer students who do participate is positive. First-year retention of transfer

students in learning communities nears the first-year retention of DFHS students in learning communities and surpasses retention of all students who do not participate in learning communities.

Figure 4

Five-Year Average Retention in Engineering for Learning Community Participants



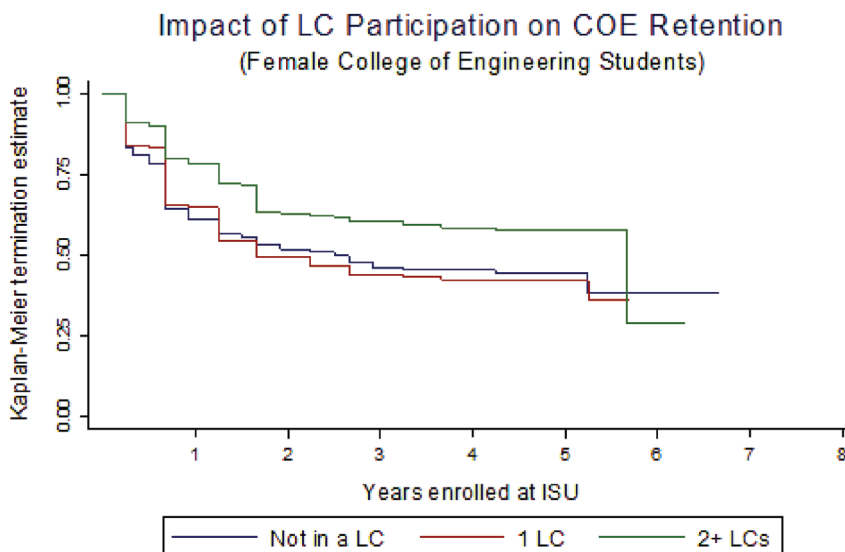
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The data show that the addition of specific transfer learning communities beginning in 2005 significantly increased the average retention rate of transfer students

over the previous five years when no specific transfer learning communities were offered.

Figure 5

Multiple Learning Community Effect on Retention of Women in Engineering



Source: 2011 SEEC Grant College of Engineering Retention Analysis

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The SEEC project goals include increasing recruitment and retention of women in engineering at Iowa State. A separate study of the data shows that, overall, if a female engineering student participates in more than one learning community, the likelihood that she will be retained at one year increases significantly over no participation or participation in just one learning community. Women have the option of participating in the Women in Science and Engineering (WiSE) learning community as well as their own departmental learning community.

Conclusion and Recommendations

The data clearly show that regardless of admit status, Iowa State engineering students are more likely to be retained at one year if they participate in a learning community. Further analysis shows that transfer students who participate in a learning community will be retained at a level near DFHS students in learning communities and will surpass all those who do not participate. Women who participate in a learning community will be retained at a higher level than those who do not participate. It was also discovered that women who participate in two or more learning communities are retained at an even higher level. The data confirm that participation in engineering learning communities at Iowa State positively impacts one-year retention rates.

Therefore it is recommended that Iowa State's College of Engineering promote learning communities to all incoming engineering students and encourage them to participate. Additional efforts should be made to reach transfer students since their overall participation is low compared to DFHS participants. Increasing the number of transfer-specific learning communities is also recommended, as this has helped boost transfer participation over the past five years. Community college students should be encouraged to join E-APP prior to transfer, as this is a transfer-specific learning community that connects transfer students to Iowa State while they are attending community college. (Learn more about *E-APP in SEEC Data Brief: Engineering Admissions Partnership Program (E-APP) and SEEC Data Brief: How E-APP Affects Retention.*) Learning communities increase students' connections to the College of Engineering at Iowa State and, as a result, increase one-year retention.

About the SEEC project

The Student Enrollment and Engagement through Connections (SEEC) project is collaboration between Iowa State University and Des Moines Area Community College (DMACC) funded by the National Science Foundation's STEM Talent Expansion Program. The goal of the project is to increase the number of engineering graduates at Iowa State University by approximately 100 per year. The percentage of women and minority graduates will approach 20% and 10%, respectively. One of the strategies used to meet this goal is to build upon Iowa State's established learning community infrastructure.

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