FIRST-YEAR LEARNING COMMUNITIES

Impact on First to Second Year Retention
Fall 2009 Cohort

UCR

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Undergraduate Education Institutional Research Report
David Fairris, Vice Provost for Undergraduate Education
Junelyn Peeples, Director of Institutional Research
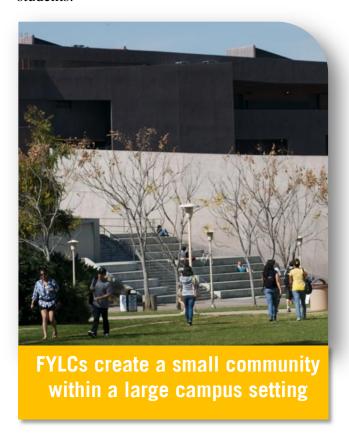Melba Castro, Director of Academic Success Initiatives

Overview

First-Year Learning Communities (FYLCs) were established at the University of California, Riverside nearly ten years ago in fall of 2002. The initiative started with a small group of 200 students in the College of Humanities, Arts, and Social Sciences and as of fall 2009 has grown to serve over 2,200 students across the three colleges[1] that enroll freshman students. The overall purpose of learning communities is to foster student success and retention. FYLCs engage students in the classroom by purposefully designing a cluster of courses intended to foster small group peer learning and faculty connections. Learning communities intentionally structure students' time, credit, and learning in a classroom setting (Smith B. L., MacGregor, Matthews, & Gabelnick, 2004).

Previous evaluations of FYLCs have found positive impacts on retention for participants. An analysis of the 2006 and 2007 cohorts found that participating in a learning community increases first-year retention by four percentage points on average when compared to non-participants (Fairris, Peeples, & Beleche, 2007). An additional analysis of the 2006 and 2007 cohorts disaggregates the findings by race and gender. Results from that study found that while participating in a FYLC has a positive and statistically significant impact on retention for all students, women and Latinos experienced the largest impact on retention (Fairris, Peeples, & Castro, 2010). Full reports can be retrieved at http://irue.ucr.edu/reports.html.

This analysis is a follow-up study to the previous analyses on FYLCs. This evaluation focuses on understanding the impact of participating in a FYLC on retention, and disaggregates the findings by social identity groups (i.e., ethnicity/race, gender, socio-economic status) and then by college. While a similar analysis was completed for the 2006 and 2007 cohorts, this study differs as it also disaggregates the findings for first-generation and low-income students.

FYLCs create a small community within a large campus setting

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[1] This analysis includes the following Colleges: College of Humanities, Arts, and Social Sciences (CHASS), College of Natural and Agricultural Sciences (CNAS), and College of Bourns Engineering (BCOE). The School of Business Administration (SOBA) only accepts upper division students; as a result this report only includes the three Colleges that accept freshman students.

Sample and Data Source

This analysis uses the UCR official third-week census student enrollment data files and end of term course enrollment data files for fall 2009. Data were gathered for the treatment (FYLC participants) and the comparison (non-participants) groups from the 2009 entering freshman cohort. The sample is as follows:

- **Treatment Group** (*FYLC participants*): 2,206 students, and
- **Comparison Group** (*non-participants*): 1,945 students.

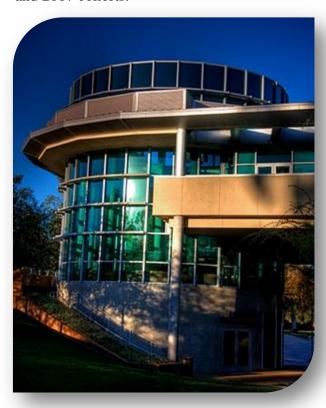Table 1 lists the definition of variables. Table 2 provides the descriptive statistics.

Methodology

This quasi-experimental analysis compares the impact of participating in a FYLC on retention for the entering freshman class of 2009. The analysis begins with a comparison of means for the treatment (FYLC participants) and comparison (non-participants) groups, and then uses a multiple regression model to control for a host of characteristics, such as SAT scores and high school grade point averages. This analysis also disaggregates the data by social identity groups in order to understand the impact of participating in a FYLC across different groups of students. For example, the analysis compares retention of female participants with female non-participants, and continues this same analysis for other subpopulations. Then, the analysis is repeated for students in each college.

Results

UCR Campus Impact

The results reported in Table 3, Column 1, reveal that that participating in a first-year learning community increases a student's likelihood of being retained by three percentage points. Interestingly, once you control for the full host of student characteristics (e.g. gender, race/ethnicity, SAT scores, and high school GPA), the estimated impact on retention rises rather significantly, approximately five percentage points (Column 3). This suggests that more vulnerable students are enrolled in LCs, which biases downward the results of the simple mean comparison. Overall, this result is one percentage point higher than the findings reported for participants in the 2006 and 2007 cohorts.

Impact across Social Identity Groups

Table 4 reports the average participation rates and impact on retention for FYLC participants by social identity groups (i.e., gender, race/ethnicity, and socio-economic status, as measured by first-generation and low-income status). The findings are provided in the following sections.

➢ **Impact of Participating in a FYLC by Gender:** The impact of participating in a FYLC is positive and statistically significant for males and females. Male FYLC participants can expect a six percentage point increase to their retention rate, whereas women can expect an impact of four percentage points.

Consistent with the analyses of the 2006 and 2007 cohorts, female participants in the 2009 cohort experienced a positive and statistically significant impact on retention. Interestingly, the 2009 cohort was the first in which there was a statistically significant impact on retention for males.

➢ **Impact of Participating in a FYLC by Racial/Ethnic Groups:** Latinos and Asians had a high participation rate, 56% and 54% respectively. Latinos and Asians showed positive and statistically significant impacts on retention. The impact on retention for Latino participants was eight percentage points compared to Latino non-participants. The impact of participating in a FYLC on retention for Asians was five percentage points when compared to Asian non-participants. The results for African American and White students were not statistically significant, and the sample size for Native Americans was too small to obtain a statistically significant result.

Latino FYLC participants experienced one of the highest impacts on retention in the analyses of the 2006 and 2007 cohorts and this finding persists for the 2009 cohort. While the 2006 and 2007 evaluation found positive impacts on retention for Asians the findings were not statistically significant until the 2009 cohort.

➢ **Impact of Participating in a FYLC by Socio-Economic Status:** Included for the first time in a FYLC evaluation is the analysis of the participation impact for first-generation and low-income students. More than half the FYLC participants are from first-generation and/or low-income backgrounds. FYLC participants from first-generation backgrounds experienced a five percentage point impact on retention when compared to first-generation non-participants. An impact of five percentage points was also found for non-first-generation students in comparison to their counterparts, suggesting that FYLCs are equally successful in increasing retention for both first-generation and non-first-generation students alike. Participants from low-income backgrounds experienced a six percentage point impact on retention when compared to non-participants from low-income backgrounds. An impact of four

percentage points was seen for non-low-income FYLC participants when compared to non-low-income non-participants. A comparison suggests that FYLCs have a greater impact on retention for low-income students compared to non-low-income students.

Impact by College

Table 5 disaggregates the impact of participating in a FYLC by college. This is the first FYLC analysis in which the impact of participating in a FYLC is positive and statistically significant in each of the colleges.

➤ **College of Humanities, Arts, and Social Sciences:** FYLC participants in CHASS can expect a five percentage point increase in retention when compared to non-participants in the college; this finding on average is consistent with the 2006 and 2007 results.

➤ **College of Natural and Agricultural Sciences:** In 2007 CNAS learning communities began to show a positive impact on retention as a result of several improvements to their FYLC model. The 2009 analysis shows that CNAS FYLC participants can expect a four percentage point increase on retention when compared to non-participants in the college.

➤ **Bourns College of Engineering:** In 2009 BCOE formally included Supplemental Instruction (SI) as part of their learning community model, which entails a regularly scheduled SI session in each student's course schedule as part of their cluster of courses. The results from this analysis show that BCOE learning community participants can expect a five percentage point increase on retention when compared to non-participants in the college. This is the first time that BCOE FYLC participants experienced a positive and statistically significant impact.

Discussion

At UCR, participating in a FYLC has a positive and statistically significant impact on retention. The 2009 cohort of FYLC participants experienced a five percentage point increase on retention with controls. This trend is consistent with previous evaluations conducted for the 2006 and 2007 cohorts.

An analysis of the impact of participating in a FYLC across social identity groups was included in this study. Females, males, Latinos, and Asians all experienced a positive and statistically significant impact on retention. With regard to socioeconomic status, low-income, non-low-income, first-generation, and non-first-generation students all experienced a positive and statistically significant impact on retention, although the impact was the largest for low-income students. Female FYLC participants have historically experienced a higher first to second year retention rate compared to female non-participants, however in 2009 male participants also experienced a significantly

higher retention rate compared to male non-participants. Latino participants in all three cohorts (2006, 2007, and 2009) experienced one of the highest retention rate impacts, ranging between eight and ten percentage points higher than the non-participant Latino comparison group. The analysis of the 2009 cohort also revealed that Asian FYLC participants experienced a positive and statistically significant impact on retention; this was the first cohort where such finding was detected.

Finally, the impact on retention for FLYC participants is positive and statistically significant in each of the academic colleges that enroll freshman students. The change in results for BCOE – from an insignificant FYLC impact on retention in earlier analyses to a positive and statistically significant impact in 2009 – shows what effect making changes to programs can have on results.

Overall, the present evaluation continues to reveal the positive impact that participating in a FYLC has on retention. Perhaps one of the most important finding from this year's analysis is that the retention impact of FYLCs is becoming surprisingly similar across colleges and across social identity groups. As learning communities have matured at UCR, students from each of the colleges and with a variety of demographic characteristics appear to be sharing relatively equally in the retention rate rewards from participation.

Fostering Academic Success

First-Year Learning Communities provide students with opportunities to learn from their peers

Table 1: Variable Definitions

First Year Learning Community (FYLC)	1 if participated; 0 otherwise
Retention	1 if retained the subsequent fall term (1-year); 0 otherwise
Gender	1 if female; 0 if male
African American	1 if African American; 0 else
Native American	1 if Native American; 0 else
Latino	1 if Latino; 0 else
Asian/P.I.	1 if Asian/P.I.; 0 else
White	1 if White 0 else
CHASS	1 if CHASS; 0 otherwise
CNAS	1 if CNAS; 0 otherwise
BCOE	1 if BCOE; 0 otherwise
First-Generation Status	1 if either Parent Education LE no 4-yr degree received; 0 GE 4-yr degree or higher
Low-Income Status	1 if Parental Income LE 30K; 0 otherwise
High School GPA	GPA score
SAT Verbal	SAT Verbal score
SAT Math	SAT Math score
On Campus	1 if living in residence halls or university owned apartments; 0 otherwise
Needmet	1 if student's financial need was met; 0 otherwise

Table 2: First Year Learning Community by Social Identity Groups Descriptive Statistics

Fall 2009	Female Mean (Std. Dev.)	Male Mean (Std. Dev.)	African American Mean (Std. Dev.)	Native American Mean (Std. Dev.)	Latino Mean (Std. Dev.)	Asian Mean (Std. Dev.)	White Mean (Std. Dev.)	First-Generation Mean (Std. Dev.)	Low-Income Mean (Std. Dev.)
Retention	0.87 (0.33)	0.87 (0.33)	0.91 (0.29)	0.82 (0.40)	0.84 (0.37)	0.89 (0.31)	0.88 (0.32)	0.86 (0.35)	0.85 (0.36)
Learning Community	0.52 (0.50)	0.54 (0.50)	0.51 (0.50)	0.36 (0.50)	0.56 (0.50)	0.54 (0.50)	0.47 (0.50)	0.55 (0.50)	0.56 (0.50)
Gender			0.67 (0.47)	0.55 (0.52)	0.63 (0.48)	0.48 (0.50)	0.47 (0.50)	0.60 (0.49)	0.59 (0.49)
African American	0.09 (0.29)	0.05 (0.23)						0.07 (0.25)	0.07 (0.25)
Native American	0.00 (0.05)	0.00 (0.05)						0.00 (0.06)	0.01 (0.04)
Latino	0.37 (0.48)	0.26 (0.44)						0.50 (0.50)	0.47 (0.50)
Asian/P.I.	0.39 (0.49)	0.49 (0.50)						0.33 (0.47)	0.38 (0.49)
White	0.13 (0.34)	0.17 (0.38)						0.08 (0.27)	0.06 (0.23)
CHASS	0.55 (0.50)	0.42 (0.49)	0.55 (0.50)	0.64 (0.50)	0.55 (0.50)	0.45 (0.50)	0.48 (0.50)	0.51 (0.50)	0.52 (0.50)
CNAS	0.39 (0.49)	0.36 (0.48)	0.39 (0.49)	0.27 (0.47)	0.33 (0.47)	0.42 (0.49)	0.34 (0.47)	0.37 (0.48)	0.37 (0.48)
BCOE	0.05 (0.22)	0.22 (0.41)	0.06 (0.25)	0.09 (0.30)	0.12 (0.33)	0.13 (0.34)	0.18 (0.39)	0.12 (0.33)	0.11 (0.32)
First-Generation Status	0.56 (0.50)	0.44 (0.50)	0.46 (0.50)	0.64 (0.50)	0.79 (0.41)	0.39 (0.49)	0.26 (0.44)		0.76 (0.43)
Low-Income Status	0.44 (0.50)	0.36 (0.48)	0.38 (0.49)	0.27 (0.47)	0.60 (0.49)	0.35 (0.48)	0.15 (0.36)	0.61 (0.49)	
High School GPA	3.51 (0.32)	3.46 (0.32)	3.43 (0.29)	3.61 (0.35)	3.50 (0.33)	3.46 (0.30)	3.55 (0.36)	3.49 (0.32)	3.47 (0.31)
SAT Verbal	500 (79)	525 (85)	496 (77)	548 (68)	485 (74)	519 (83)	554 (75)	487 (76)	482 (78)
SAT Math	515 (92)	578 (93)	489 (89)	569 (51)	487 (84)	587 (89)	569 (81)	513 (94)	511 (97)
SAT Writing	509 (78)	520 (82)	498 (78)	547 (71)	483 (72)	528 (82)	548 (70)	489 (76)	484 (77)
On Campus	0.70 (0.46)	0.73 (0.44)	0.74 (0.44)	0.73 (0.47)	0.58 (0.49)	0.82 (0.38)	0.67 (0.47)	0.67 (0.47)	0.69 (0.46)
Needmet	0.61 (0.49)	0.66 (0.48)	0.74 (0.44)	0.73 (0.47)	0.52 (0.50)	0.65 (0.48)	0.76 (0.42)	0.52 (0.50)	0.44 (0.50)

Table 3: First Year Learning Community Impact on Retention

	^ B (Std. Error)	^ B (Std. Error)	^ B (Std. Error)
FYLC Impact	0.03* (0.01)	0.03* (0.01)	0.05* (0.01)
Gender		0.01 (0.01)	0.01 (0.01)
African American		0.03 (0.04)	0.06 (0.04)
Native American		-0.05 (0.11)	-0.07 (0.11)
Latino		-0.04 (0.04)	-0.01 (0.04)
Asian/P.I.		0.02 (0.04)	0.02 (0.04)
White		0.01 (0.04)	0.04 (0.04)
CHASS			0.06* (0.02)
CNAS			0.03** (0.02)
First-Generation Status			0.01 (0.01)
Low-Income Status			-0.03* (0.01)
High School GPA			0.13* (0.02)
SAT Verbal			0.00* (0.00)
SAT Math			0.00** (0.00)
SAT Writing			0.00 (0.00)
On Campus			0.04* (0.01)
Needmet			-0.01 (0.01)
Constant	0.86* (0.01)	0.85* (0.04)	0.13 (0.09)

* Indicates statistically significant at the 0.05 level (two-tailed).

** Indicates statistically significant at the 0.10 level (two-tailed).

Table 4: First Year Learning Community Impact on Retention by Social Identity Groups

	Mean (Std. Dev.)	$\hat{B}$ (Std. Error)
FYLC Impact	0.53 (0.50)	0.05* (0.01)
Female	0.52 (0.50)	0.04* (0.01)
Male	0.54 (0.50)	0.06* (0.02)
African American	0.51 (0.50)	-0.01 (0.03)
Native American	0.36 (0.50)	Insufficient Sample Size
Latino	0.56 (0.50)	0.08* (0.02)
Asian/P.I.	0.54 (0.50)	0.05* (0.02)
White	0.47 (0.50)	0.01 (0.03)
Other	0.45 (0.50)	0.24* (0.08)
First-Generation	0.55 (0.50)	0.05* (0.02)
Non-First-Generation	0.51 (0.50)	0.05* (0.01)
Low-Income	0.56 (0.50)	0.06* (0.02)
Non-Low-Income	0.51 (0.50)	0.04* (0.01)

* Indicates statistically significant at the 0.05 level (two-tailed).

Table 5: First Year Learning Community Impact on Retention by College

	Mean (Std. Dev.)	^ B (Std. Error)
FYLC Impact	0.53 (0.50)	0.05* (0.01)
CHASS	0.47 (0.50)	0.05* (0.02)
CNAS	0.47 (0.50)	0.04* (0.02)
BCOE	0.68 (0.47)	0.05** (0.03)

* Indicates statistically significant at the 0.05 level (two-tailed).

** Indicates statistically significant at the 0.20 level (two-tailed).