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IMPACT OF LEARNING COMMUNITIES IN DEVELOPMENTAL ENGLISH ON COMMUNITY COLLEGE STUDENT RETENTION AND PERSISTENCE

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ABSTRACT

This investigation was a case study to measure the retention and persistence effects of a learning community in developmental English at an urban community college. The study used student demographic and course outcome data to quantify the extent to which learning community participation could contribute toward remedying the historically low retention and persistence rates among a diverse student population in community colleges. The learning communities in this study consisted of developmental reading and writing courses linked in pairs at the same level, considered to be either one or two levels below college level English. Findings revealed a relationship between learning communities and improved retention in developmental writing courses for all ethnic groups. In addition, retention and persistence was improved for Latino students. The study also revealed that learning communities were most effective when utilized at the higher developmental English level courses compared to the lower level courses.

Community colleges have attracted a student body of incredible diversity, and have served a population of students who, for myriad reasons, chose community colleges over other institutions by virtue of desire, necessity, or lack of other

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options. Community colleges, according to Cohen and Brawer (2003), are institutions that "help individuals learn what they need to know to be effective, responsible members of their society" and that "make it easier for people to move between social classes" (p. 393). In spite of data and anecdotal evidence attesting to the effectiveness of community colleges in supporting the educational goals of students, some noteworthy authors in the area of college retention and educational research have noted that students who attended community colleges were at a disadvantage when it came to attaining the bachelor's degree. Pascarella and Terenzini (1991) estimated at least a 15% reduction in the likelihood that a student would attain a bachelor's degree by beginning studies at a community college. Astin (1993) reported that "eighteen- to twenty-two-year-olds attending community colleges . . . drop out of college at much higher rates than would be expected from their abilities, aspirations, and family backgrounds" (p. 417). Clearly, such statements are cause for concern and a call to action for community college faculty, administrators, and policy makers who are committed to student success.

Much research has been conducted to determine effective practices for improving student success in community colleges, in particular for students who entered college lacking the academic skills necessary to succeed in college-level work. Among the effective practices cited were learning communities, defined broadly as the linking of courses with enrollment of a common cohort of students. Learning community courses have been linked in pairs or clusters of several courses, and frequently have been designed around a common theme (e.g. culture, academics) or targeted to a particular group of students (e.g. freshmen or first-year students) (Washington Center for Improving the Quality of Undergraduate Education, 2007).

BACKGROUND TO THE STUDY

Almost half of all community college students are first-generation college students (Achieving the dream, 2005), and almost half leave high school academically unprepared for college-level coursework (McCabe, 2003). A report sponsored by the League for Innovation in the Community College (McCabe, 2003) exposed the extent of the problem faced by colleges in meeting the remediation needs of entering college students. The report estimated that only 42% of recent high school graduates were academically prepared for college work. Of the three primary areas of developmental education (reading, writing, and mathematics), approximately one-third of entering college students with academic deficiencies were deficient in all three areas, one-third in two areas, and one-third in one area. Latino and African American students were over-represented among students needing remediation, especially among students needing the most remediation (McCabe, 2003).

Students who began college at the developmental level have been shown to have a lower chance for completion than students who entered college without the need for remediation. It has been estimated that fewer than ten percent of students who needed remediation upon entry completed college without it (Basic skills as a foundation for student success in California community colleges, 2007). The Little Hoover Commission report (2000) found that only 26% of California community college students who participated in a developmental English course went on to register in college level courses.

Students who completed remediation in a subject tended to do well in higher-level courses. Several studies have shown that students had a college-level course pass rate of approximately 80% after successfully completing remediation in the same subject (Boylan & Saxon, 1999). This study also noted, however, that many students who completed remediation never enrolled in a subsequent college-level course. Many students who needed remedial coursework either failed to enroll in courses or did not succeed in developmental courses.

Positive outcomes have been reported for students who successfully completed remediation. Subsequent course success, grade point averages, retention, and persistence were higher for remediated students than for non-remediated students in several studies; however, these studies found that rates for students needing remediation were lower than for students who entered college without the need for remediation (Boylan & Saxon, 1999; Weissman, Bulakowski, & Jumisko, 1997; Weissman, Silk, & Bulakowski, 1997).

Student involvement and engagement in college have been linked to student success and retention (Astin, 1993; Laufgraben & Shapiro, 2004; Zhao & Kuh, 2004), and increasing student involvement and engagement have been the goals of many student retention efforts. The cohort model that is the core of learning communities also has promoted student involvement and engagement by providing opportunities for increased interaction among students through enrollment in linked courses, often sharing a theme related to culture (i.e., Puente, Umoja), politics, or the arts and humanities.

Learning communities that have featured themes related to a common interest, including shared ethnic background, have fostered interaction among students who might have had no other reason to interact and develop a peer relationship. It is believed that interaction among faculty and students is enhanced by learning communities and hence promotes student retention. Findings of increased interaction among faculty and students have been common in published studies on learning communities (Tinto & Russo, 1994; Zhao & Kuh, 2004).

The Local Setting

This study focused on developmental education learning communities in English at an urban community college located in Southern California. Headcount enrollment for the college was approximately 15,000 as of spring 2008 census, and

2007-2008 full-time equivalent student (FTES) enrollment was approximately 10,000. College enrollment closely matched the diversity of the service area. In spring 2008 (first census), 30.4% of students were Caucasian, 31.8% were Latino, 12.7% were African American, and 11.7% were Asian, Filipino, or Pacific Islander, 1.0% were Native American, and 12.3% were "other/decline to state."

The college faced many challenges in promoting student success. The local service area was an urban setting and many residents were low income and less well educated than other areas in the city. Feeder high schools were among the lowest performing in the county. The under-preparedness of students was reflected in the following measures:

- Basic Skills: Students' assessment test scores reflected low levels of math and English proficiency. In 2007, 83.6% of students who took the math assessment test placed at the basic skills level. 85.2% of students who took the English assessment test placed at the basic skills level.
- Student attrition: From 1995 to 2004, approximately 40% of first-time freshman students who enrolled in the fall term did not enroll in the subsequent spring term.
- Course completion: In Fall 2006, over 35% of students never attended, dropped or withdrew from all classes before the end of the semester.

The Learning Community

The learning community investigated in this study consisted of linked course in developmental writing and reading at one and two levels below college level English courses. The courses two levels below were English 042 (College Reading and Study Skills I) and English 043 (English Review). Courses one level below were English 051 (Basic Composition) and English 056 (Reading and Study Skills II). Course faculty worked together to develop themes for the courses and special services such as in-course tutors. Learning community faculty also received special professional development and planning time to develop the themes used in the courses.

Problem Statement

The problem under investigation in this study was whether learning communities were effective ways to improve student success in developmental community college English courses, and whether there were differences in learning community outcomes among gender and ethnic groups. Student success was defined, for the purpose of this study, as retention within the semester and persistence to the following semester. Recent research in the area of basic skills education has documented "effective practices that have been demonstrated to produce improvements in student outcomes" (Basic skills as a foundation for student success in California community colleges, 2007, p. 8), and learning

communities were among the practices identified. However, that study also reported that "Much of the available research on learning communities has been conducted at four-year, residential colleges and universities" and that "More studies are needed to examine the impact of these models at commuter and two-year colleges" (p. 59).

Research Questions

The two research questions that guided this study are:

1. Was there an increase in retention and persistence rates among students in developmental English courses conducted as learning communities versus students in the stand-alone course format?
2. What were the differences in retention and persistence in developmental English learning communities by gender and ethnicity?

To evaluate research question one, the chi-square goodness of fit test was used to determine whether there were significant differences in course retention and persistence for students who took developmental English courses taught in learning communities compared to students who did not take developmental English in learning communities.

Hypotheses

The two research questions led to two hypotheses that appear below.

H1: There are no significant differences ($p = .05$) in retention rates overall and among gender and ethnicity categories for students in developmental English courses taught in the learning community format compared to the non-learning community format.

H2: There are no significant differences ($p = .05$) in persistence rates overall and among gender and ethnicity categories for students in developmental English courses taught in the learning community format compared to the non-learning community format.

METHODOLOGY

Sample

This study focused on students who enrolled in developmental English courses at the college during the fall 2007, spring 2008, fall 2008, and spring 2009 semesters, and who remained enrolled after the drop deadline for the course(s). The study included the entire population of students who enrolled in developmental English learning communities, which consisted of linked sections of English 042 and 043 (two levels below college level English), and English 051 and

056 (one level below college level). The comparison group consisted of a random sample of students who took English 042 and/or 043 or English 051 and/or 056 in a non-linked format at the college during the fall 2007, spring 2008, fall 2008, and spring 2009 semesters. This sample was generated by the Statistical Package for the Social Sciences (SPSS) using the "select cases" command to draw a random sample from the comparison group.

The sampling specification was set to ensure that the number of students in each course number in the comparison group was equal to the number of students in each learning community course number. The decision to use a sample of developmental English students for comparison purposes rather than the entire population of students who took courses in the non-linked format was made in order to reduce the potential for problems with heterogeneity of variance that might arise if group sizes were unequal. A review of the demographic characteristics of the study group and comparison group in Table 1 showed that the groups differed in terms of ethnicity and gender. Latino and female students were overrepresented in the learning community group compared to the random sample of non-learning community developmental English students. The mean ages of the two groups were similar, however.

Students who enrolled in developmental English courses were advised or required to have prior competency in reading and/or writing in English. The college catalog listed advisory prerequisites for the lowest level English courses (two levels below college level), and listed a mandatory prerequisite for English

Table 1. Descriptive Statistics for Students

	Study group (Mean age = 23.5)		Comparison group (Mean age = 23.8)	
	Count	Percent	Count	Percent
Race/ethnicity				
American Indian	4	0.5%	3	0.4%
Asian	44	5.8%	48	6.3%
African American	134	17.6%	154	20.3%
White	64	8.4%	104	13.7%
Latino	440	57.9%	375	49.3%
Filipino	20	2.6%	16	2.1%
Pacific Islander	0	.0%	9	1.2%
Other non-white	38	5.0%	27	3.6%
Unknown	16	2.1%	24	3.2%
Gender				
Male	252	33.2%	311	40.9%
Female	508	66.8%	449	59.1%

051 and 056 (one level below college level). Prerequisites were not enforced for English 042 and 043, so these courses effectively had no "floor." Two of the four courses (English 051 and 056) had a prerequisite that was enforced at the time of enrollment.

Data Collection Procedures

This study relied on data that were collected from the student application for admission to the college; from registration information provided by the student upon enrollment each semester; from instructor grades submitted at the end of the semester; and from automatic updates to student progress data including term and cumulative grade point average, academic standing, and placement levels in reading, writing, and mathematics. These data were stored on the mainframe computer maintained by the college district and were considered reliable, given that this system also was used for fiscal reporting to the state and federal governments and was the repository for transcript information.

The database included all students enrolled at the college for each term, and was considered duplicate enrollment data since there was a record for each course enrollment for every student. Student demographic data used in this study included self-reported ethnicity, gender, and date of birth (computed as age). Ethnicity included the categories of American Indian/Alaskan Native, Asian, African-American, White non-Hispanic, Hispanic, Filipino, Pacific Islander, Other non-white and unknown.

To improve the reliability of statistical procedures, ethnic groups were combined into three categories: African American, Latino, and all other ethnicity. Gender was reported as male or female. Age was calculated based on the actual date of birth. The database also contained enrollment information on every course attempted each semester, which included the subject, course number, course reference number, and final grade.

To compare retention rates the researchers recoded grades into a new variable that included values for course completion (any letter grade) and withdraw (grades of W). The retention rate was calculated as the proportion of students who completed courses (whether or not successfully) to the total enrollment in courses (excluding those who dropped before the drop deadline). This categorical variable was used to determine whether there were differences in course retention among the independent variables. Persistence to the next semester was measured by matching enrollment data files to determine which students re-enrolled the following semester. This data match included only students who successfully completed developmental English courses. Students persisted if they were enrolled as of the end of the drop deadline in the following semester. Students who completed developmental English in a learning community were compared to students who completed developmental English in stand-alone courses to measure differences in persistence among the groups.

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS). The independent variables in the study were learning community participation, ethnicity, and gender. The database used in this study included a field that identified English sections that were taught in the learning community format, while gender and ethnicity were self-reported by students and were collected in categories that were consistent with the reporting requirements of the California Community Colleges Chancellor's Office. The dependent variables in the study were course retention and persistence to the next semester.

The multi-level chi-square statistic was used to determine whether learning communities contributed to a significant difference between expected values for the two groups in terms of retention in developmental English courses, and whether there were differences in retention among ethnic and gender groups.

Persistence was also a categorical dependent variable. The data file included a field that showed whether students in the study group and comparison group were enrolled in the college in the following semester as of the census reporting date (week three). The chi-square statistic was used to determine whether there was a significant difference between expected persistence values for the two groups, and whether there were differences in persistence among ethnic and gender groups. All statistical tests were one-tailed tests that used an alpha value of 0.05, with the null hypotheses being that the means and proportions were equal and the alternative hypotheses being that the means and proportions were not equal.

Results

Retention

Table 2 illustrates that developmental English course retention rates were higher for students who took courses in learning communities, but the differences were not significant for all English courses. For English 042 and 056, there were no significant differences between learning community participation and course retention. For English 043, the results showed a significant increase in course retention for learning community students compared to non-learning community students ($\chi^2 = 18.52$, $df = 1$, $p < 0.001$), with similar results for English 51 ($\chi^2 = 14.36$, $df = 1$, $p < 0.001$). It should be noted that the significant increases in retention were in developmental writing courses. When courses were grouped by level (English 042/043 and English 051/056), overall retention was significantly higher for learning community students than for non-learning community students at both the English 042/043 level ($\chi^2 = 14.36$, $df = 1$, $p < 0.001$) and the English 051/056 level ($\chi^2 = 14.19$, $df = 1$, $p < 0.001$).

Table 3 shows retention rates for English 042 and 043 by grouped ethnicity. Retention for African-American students was lower in learning communities,

Table 2. Retention for Developmental English Courses by Learning Community Status

Course number	Learning community	Course retention		
		Not retained	Retained	Total
042	No	23	94	117
	Yes	17	100	117
	Total	40	194	234
043	No	33	83	116
	Yes	8	108	116
	Total	41	191	232
051	No	54	210	264
	Yes	26	238	264
	Total	80	448	528
056	No	39	224	263
	Yes	25	238	263
	Total	64	462	526

Table 3. Retention Rates for English 042 and 043 Courses by Learning Community Status and Grouped Ethnicity

Recoded ethnicity	Learning community	Course retention		
		Not retained	Retained	Total
African American	No	16	49	65
	Yes	15	33	48
	Total	31	82	113
Latino	No	26	90	116
	Yes	8	135	143
	Total	34	225	259
All other ethnicity	No	14	38	52
	Yes	2	40	42
	Total	16	78	94

although not significantly so. Latino students had significantly higher rates of retention in learning communities ($\chi^2 = 15.89$, $df = 1$, $p < 0.001$), as did students in the "other" ethnic category ($\chi^2 = 8.079$, $df = 1$, $p < 0.004$). Retention rates were significantly higher for both females and males who took English 042 and 043 in learning communities. The chi-square test showed that females ($\chi^2 = 4.168$, $df = 1$, $p < 0.041$) and males ($\chi^2 = 13.14$, $df = 1$, $p < 0.001$) were more likely to be retained in English 042 and 043 when those courses were taken in the learning community format.

For students who took English 051 and 056 in learning communities, course retention rates were consistently higher than rates for students who took English 051 and 056 individually. For African-American students, this difference was not significant, but for Latino students ($\chi^2 = 6.330$, $df = 1$, $p < 0.012$) and students from the "other" ethnic category ($\chi^2 = 12.74$, $df = 1$, $p < 0.001$), learning community retention was significantly higher than retention for students who did not take English 051 and 056 in a learning community. Results are shown in Table 4.

Course retention rates for females and males were also higher when English 051 and 056 courses were taken in learning communities. The chi-square test for females showed a significant difference in retention ($\chi^2 = 6.119$, $df = 1$, $p < 0.013$), as did the test for males ($\chi^2 = 10.33$, $df = 1$, $p < 0.001$).

Persistence

Persistence is this study meant that a student enrolled in at least one course in the spring semester after a fall term of enrollment. The student had to have been

Table 4. Retention Rates for English 051 and 056 Courses by Learning Community Status and Grouped Ethnicity

Recoded ethnicity	Learning community	Course retention		
		Not retained	Retained	Total
African American	No	15	74	89
	Yes	14	72	86
	Total	29	146	175
Latino	No	44	215	259
	Yes	29	268	297
	Total	73	483	556
All other ethnicity	No	34	145	179
	Yes	8	136	144
	Total	42	281	323

enrolled as of the drop deadline for the spring semester; students who enrolled but dropped all units were not considered to have persisted. Persistence from fall 2007 to spring 2008 only included students in English 051 and 056, since no English 042 and 043 learning communities were offered in the fall 2007 term. Persistence from fall 2007 to spring 2008 for learning community versus non-learning community students is shown in Table 5. Persistence for learning community students was higher for both English 051 and 056, but not significantly so.

Persistence for fall 2008 to spring 2009 is shown in Table 6. Persistence rates for learning community students were higher than for non-learning community students in all developmental courses. However, persistence rates were significantly higher at the .05 level only for students in English 051 ($\chi^2 = 4.006$, $df = 1$, $p < 0.045$).

Persistence for grouped English courses was significantly higher for learning community students at the English 051/056 levels for both years. For English 042/043, persistence was higher for learning community students than non-learning community students; however, the significance of this finding did not quite meet the threshold established for this study.

Fall 2007 to spring 2008 persistence by ethnicity is shown in Table 7. Here again, persistence is only shown for English 051 and 056 since there were no learning communities offered at the English 042 and 043 levels in fall 2007. Although persistence for learning community students was higher for all ethnic groups, none showed a significant difference over non-learning community students.

Female students in learning communities had a significantly higher rate of persistence than non-learning community students ($\chi^2 = 4.925$, $df = 1$, $p < 0.026$). Male students in learning communities had higher rates of persistence as well; however the rate was not significantly higher.

Table 5. Persistence Rates for English 051 and 056 Courses by Learning Community Status, Fall 2007 to Spring 2008

Course number	Learning community	Persisted to spring term		
		No	Yes	Total
051	No	20	52	72
	Yes	3	21	24
	Total	23	73	96
056	No	20	44	64
	Yes	3	21	24
	Total	23	65	88

Table 6. Persistence Rates for Developmental English Courses by Learning Community Status, Fall 2008 to Spring 2009

Course number	Learning community	Persisted to spring semester		
		No	Yes	Total
042	No	10	18	28
	Yes	21	68	89
	Total	31	86	117
043	No	10	17	27
	Yes	20	68	88
	Total	30	85	115
051	No	14	36	50
	Yes	18	103	121
	Total	32	139	171
056	No	13	36	49
	Yes	18	103	121
	Total	31	139	170

Table 7. Persistence Rates for Grouped English 051 and 056 Courses by Learning Community Status and Grouped Ethnicity, Fall 2007 to Spring 2008

Recoded ethnicity	Learning community	Persisted to spring term		
		No	Yes	Total
African American	No	9	11	20
	Yes	0	4	4
	Total	9	15	24
Latino	No	18	52	70
	Yes	4	24	28
	Total	22	76	98
All other ethnicity	No	13	33	46
	Yes	2	14	16
	Total	15	47	62

Persistence rates for English 042 and 043 courses from fall 2008 to spring 2009 are presented in Table 8.

Persistence from fall 2008 to spring 2009 for Latino students was significantly higher for learning community students than non-learning community students ($\chi^2 = 6.561$, $df = 1$, $p < 0.010$). There was not a significant difference for persistence for African-American students and students in the "other" ethnic category. Males in learning communities had a significantly higher rate of persistence ($\chi^2 = 5.561$, $df = 1$, $p < 0.017$), while females in learning communities did not have this same significant finding. Persistence for English 051-056 from fall 2008 to spring 2009 is shown in Table 9.

Fall 2008 to spring 2009 persistence rates for English 051 and 056 students are presented in Table 9. This Table shows that African-American students in learning communities had a very slight increase in persistence compared to non-learning community students, but this difference was not significant. Latino students in learning communities had significantly higher rates of persistence than non-learning community students ($\chi^2 = 4.213$, $df = 1$, $p < 0.040$), and although the "other" ethnic group category of learning community students had an improvement in persistence over non-learning community students, the result did not meet the criterion for this study. Both male and female learning community students had increased persistence rates compared to non-learning community students, however, the increase was significant only for female students ($\chi^2 = 6.191$, $df = 1$, $p < 0.013$).

Table 8. Persistence Rates for Grouped English 042 and 043 Courses by Learning Community Status and Grouped Ethnicity, Fall 2008 to Spring 2009

Recoded ethnicity	Learning community	Persisted to spring semester		
		No	Yes	Total
African American	No	4	8	12
	Yes	12	22	34
	Total	16	30	46
Latino	No	12	15	27
	Yes	24	92	116
	Total	36	107	143
All other ethnicity	No	4	12	16
	Yes	5	22	27
	Total	9	34	43

Table 9. Persistence Rates for Grouped English 051 and 056 Courses by Learning Community Status and Grouped Ethnicity, Fall 2008 to Spring 2009

Recoded ethnicity	Learning community	Persisted to spring semester		
		No	Yes	Total
African American	No	1	14	15
	Yes	4	37	41
	Total	5	51	56
Latino	No	15	38	53
	Yes	22	121	143
	Total	37	159	196
All other ethnicity	No	11	20	31
	Yes	10	48	58
	Total	21	68	89

CONCLUSIONS

The researchers noted several significant findings that were noteworthy. In several instances, findings differed from those predicted by the hypotheses. Overall, retention appeared to be positively influenced by learning community participation. Learning communities did not appear to be related to increased retention for students enrolled in English 042 and 056 courses, the developmental reading courses. This was not the case for students enrolled in Eng 043 and 051 courses, the developmental writing courses. For students at the grouped English 042/043 level and grouped English 051/056, Latino and the "other" category of students had significantly higher retention rates than expected. The same was true for both male and female students in these course parings.

The impact of learning communities on persistence rates showed mixed results. Overall, there was no significant impact of learning communities on persistence from one semester to the next semester. The impact only was significantly higher for female and Latino students' persistence in a learning community for both the English 051/056 and English 042/043 pairings.

The researchers also investigated other, tangential factors, beyond learning communities that might have affected the retention and persistence of students in developmental English courses. An analysis of students' ages revealed that Latino students were significantly younger than African Americans and students in the "other" ethnic category. Younger Latino students were significantly more likely to be retained at the English 042/043 level but there was no consistent

difference in retention related to age at the English 051/056 level. Interestingly, high school graduation status also was found to be related to retention. There was a significant difference in overall retention by high school graduation status for all English courses combined and for all students regardless of learning community status. Students who had a foreign high school diploma had the highest proportion of retention in developmental English (94.9%), followed by students who had a regular high school diploma (85.2%) and students having a General Educational Development (GED) certificate (78.3%). Finally, course placement examination scores were found to be a factor in whether students were retained in these developmental English courses. Students who met the recommended placement level for courses were more likely to be retained. This result was significant for all the English courses except English 051. Placement levels in reading and writing were advisory for English 042 and 043 and mandatory for English 051 and 056. Interestingly, the learning community students were less likely to meet the placement cut-off scores than their non-learning community peers. The difference here was significant for all the English courses except 042. It also was discovered that there were differences among ethnic groups in meeting recommended placement levels. There were significant differences among the ethnic groups for the lower level English courses. For students in English 042, African-American students and students in the "other" ethnic category were significantly less likely to have met the recommended placement level. The percentages of students who did not meet the cut-off scores for this course were not insubstantial (African American 43.3%, the "other" category 47.6%, and Latinos 29.5%). For the English 043 course, African-American students were significantly less likely to meet the cut-off score (49.1%) than their peers.

The inconsistencies in outcomes reported in this study were by no means unique. For example, a study was recently published that summarized and compared the outcomes of selected community college pre-collegiate education program (Bond, 2009). Of the eleven California community colleges in this study, eight utilized learning communities as the primary pedagogy for strengthening developmental education in English. Four of the eight learning community programs had retention rates that were virtually identical to comparable non-learning community courses, two colleges had retention rates that were at least 10 percentage points higher than non-learning community rates and two colleges had retention rates that were at least 10 percentage points below non-learning community rates. Further, only one college had persistence rates that were higher for learning community students. The other seven colleges had persistence rates that were equal or lower. The differences in this study were not examined for statistical significance.

The use of learning communities to improve student retention in developmental writing courses appears to have positive results. The overall improvement in retention for Latino students is noticeable. However, since Latino students were the largest ethnic group in the sample, the impacts of group size may be at play

here. It might be easier to develop a community of learners, with all the positive implications that represents, when there are more members of a sub-group who share some positive similarities, such as culture. Learning communities do not appear to have such a positive impact on the retention of African-American students. Retention in reading courses was not as impacted by the learning community model as the writing courses. Perhaps there is something endemic to learning reading that was not positively impacted by the learning community model at this college.

Student persistence from one semester to the next is only marginally impacted by participation in learning communities. Practitioners normally associate higher rates of retention with the possibility of higher persistence rates. With more students completing courses, the better the chance of more students reenrolling in the college the following semester. Perhaps, for this study, the benefits of learning communities don't translate into more students returning for more education.

IMPLICATIONS

The findings of this study of the impact of learning communities in developmental English courses on retention and persistence have implications for researchers and practitioners alike. As community colleges continue to explore instructional practices that contribute to improved student outcomes, future studies should employ both quantitative and qualitative methods of analysis to ensure consideration of the students' impressions of the efficacy of instructional strategies along with the more tangible measures of retention and persistence. Although learning community participation was positively related to improved student outcomes in several areas, this study suggested that the effectiveness of learning communities varied among groups and may not have been the only factor contributing to improved student outcomes. Many other factors may be related to student outcomes, and future research studies should include an analysis of the following; the relationship between reading and writing placement levels and success in developmental English courses, discover more effective practices for meeting the needs of students at the lowest reading and writing proficiency levels, to quantify the effect of high school equivalency status as it relates to learning community participation among ethnic and gender groups, and determine which practices within learning communities (e.g., linked courses, coordinated curriculum, faculty professional development, supplemental instruction, collaborative learning) are most effective in improving student outcomes.

Given the fact that many community colleges have faced declining revenues in recent years, it may be difficult to justify a program that requires this commitment of additional resources. However, the effectiveness of the learning community model in improving student outcomes at higher levels of developmental English was supported by this study, which may lead to an increase in the use of learning communities for students needing relatively minor amounts of English

remediation in community colleges. To determine ways to better meet the needs of students having low levels of English preparedness, the college may wish to consider bringing together the English faculty who taught the various levels of English within the learning communities to discuss their curriculum and teaching strategies and to exchange ideas to improve student outcomes in the lower level English courses. Also, a review of the support services provided to students enrolled in English courses may help to identify the types of services that might contribute to higher levels of student retention and persistence in the lower level English courses.

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