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Research has shown that learning communities are an effective way to improve student performance and persistence, but the success of any particular implementation is not guaranteed. Each program should be evaluated with due regard to the likelihood that better-prepared students tend to participate in the first place.

Evaluating and Assessing Learning Communities

Student involvement has been well-established as a key ingredient in facilitating learning and achievement in college (Astin, 1984, 1987; Chickering & Gamson, 1987; Pascarella & Terenzini, 1991; Study Group, 1984). At urban and metropolitan colleges and universities, the experiences in and related to specific classes constitute for many students the primary point of contact between the student and the university community (Kuh, Vesper, & Krehbiel, 1994; Tinto, 1997). For this reason, programs that focus on increasing student involvement through class-related experiences, such as collaborative learning, service learning, and learning communities, have taken center stage as the means toward increasing student involvement at urban and metropolitan universities.

Case studies have shown that learning communities can be an effective means of increasing student involvement in learning, resulting in higher levels of student performance and persistence (Levine & Tompkins, 1996; Tinto, Russo, & Kadel, 1994). As with any program innovation, the

implementation of learning communities varies widely across and within colleges and universities. It is likely, then, that the effectiveness of learning communities varies just as widely. It is reasonable to expect that not every instance of a learning community will be equally effective for any or all enrolled students. Since their development requires a significant investment of time and money, it is important that those responsible for developing, administering, and funding these efforts evaluate the effectiveness of the program as a whole as well as its individual components.

This article reports the results of an overall evaluation of the effectiveness of several academic support programs, including learning communities, at a large Midwestern urban university. Like the learning communities themselves, the evaluation method represents an evolving mechanism for ensuring that all such program innovations meet their stated objectives. Therefore, the article considers the benefits and limitations of the evaluation method as well as the subject of evaluation: learning communities. The evaluation is itself part of the overall learning communities program, and both the program and evaluation will likely improve over time as a result of their interaction.

History and Context

Like many urban universities, Indiana University-Purdue University Indianapolis (IUPUI) has made a strong commitment over its history to serve its metropolitan community by making available a comprehensive range of degree programs to individuals of diverse demographic and academic backgrounds. The university has maintained an open-access admissions policy in a state that has no community college system, while at the same time maintaining high standards for classroom performance and student progress. The balance between these two—open access and high academic standards—makes IUPUI appear less than stellar in its performance by such traditional measures as one-year student retention and six-year graduation rates. On the other hand, many students who were not eligible to enter any other public college or university in the state graduate alongside peers who started college with far greater academic and social advantages, which attests to the importance of providing these opportunities to the community.

As part of its commitment to diverse learners, IUPUI has developed an array of academic support programs to provide all students the best chance of succeeding. Many of these programs were housed within a central administrative unit called the Undergraduate Education Center (UEC) and staffed by professional (i.e., nonfaculty) advisors and administrators.

Recognizing the pivotal role of the faculty and of the classroom experience for promoting student academic success, existing programs were reorganized and new programs developed as part of a new academic unit called University College, which

will accept its first students in summer, 1998, after a developmental year in 1997-98. Led by tenured faculty leaders in undergraduate education, the development of University College included a variety of academic support programs, but revolved largely around two large-scale programs: a well-established and successful peer mentoring program; and an evolving and multifaceted set of learning communities.

As various campus groups considered the formulation of University College, senior administrators commissioned a study by the campus's Office of Information Management and Institutional Research (IMIR) to determine the impact of existing academic support programs on the students who participate. Five such programs were included in the analysis, but this article will focus primarily on the assessment of learning communities and, for comparative purposes, the peer mentoring program.

Method Protocol

A common protocol was developed to compare the effectiveness of the various academic support programs. Each analysis began with a description of the program, including its program content and target audience. Next, one or more comparison groups of "untreated" students were identified and compared to students participating in the assessed program according to various background, enrollment, performance, and persistence characteristics that might affect subsequent achievement.

Since it is not feasible to derive completely matched samples, a second phase of each analysis examined differences in student performance and persistence with statistical control for initial group differences. The analysis employed a variety of statistical techniques to control for group background differences in assessing program effectiveness, including linear and logistic regression with block entry of predictors and analysis of covariance. Further comparisons were made between program participants and nonparticipants among specific subgroups (e.g., first-time freshmen and minorities).

Results: Learning Communities

The article in this volume by Scott Evenbeck and Gayle Williams describes in detail the evolution of learning communities at IUPUI. As they noted, IUPUI's implementation of learning communities revolves around a first-year seminar taught by an instructional team. The evaluation reported here came at a pivotal time during the evolution of the team concept; it was conducted in the spring of 1997 to coincide with the faculty vote on the formation of University College, and therefore, included pilot programs of learning communities that had been implemented between fall of 1995 and fall of 1996. We will focus here on the results for the latest of these semesters, fall of 1996, and report later, preliminary results for more recent classes offered in fall of 1997.

Baseline Group Comparisons

Students participating in the learning communities were compared with those enrolled in the linked subject-matter course, but not enrolled in the first-year experience course. Table 1 shows a comparison of the 309 students enrolled in learning communities with their 1,193 comparative peers for the fall 1996 semester.

Table 1
Baseline Comparisions for the Learning Communities Program
Background and Enrollment Characteristics

	Participants		*Nonparticipants*	
	Indicator	n^1	Indicator	n^1
Average age	19.9	309	20.0	1193
Percent female	56%	309	55%	1193
Percent African American	14%	309	17%	1193
Average HS% class rank	38.1	270	38.7	1033
Applied for financial aid	65%	309	61%	1193
Average percent of need met	40.7	200	41.3	723
Placed in remedial math	91%	305	89%	1182
Placed in remedial writing**	30%	305	40%	1163
Placed in remedial reading***	26%	305	38%	1172
Average semester hours***	11.7	309	10.7	1193
Performance and Persistence (Unadjusted)				
Average semester GPA	2.03	301	1.94	1137
Retained to 2nd semester*	80%	309	74%	1193
Retained to 3rd semester	55%	309	51%	1193
Retained to 4th semester	46%	309	41%	1193

[1]Valid *n* (excluding missing values) upon which indicator is based.

[2]*t*-tests used for all interval variables; χ^2 for percentile-based variables

*$p<.05$

**$p<.01$

***$p<.001$

Participants and nonparticipants were similar in terms of age, gender, ethnicity, high school class rank, and financial aid status. In addition, similar proportions of participants and nonparticipants were placed in a remedial math class. There were significant background differences in placement in remedial writing and reading as well as in the fall semester credit load. Participants had lower rates of placement in remedial courses in writing and reading and on average carried a higher credit load.

Unadjusted Outcome Differences

Fall 1996 learning community participants generally averaged higher grades than nonparticipants, but these differences were not statistically significant. The retention rate to the spring 1997 semester was significantly higher among participants (80%) than nonparticipants. The rate of retention to the third semester (i.e., the one-year retention rate to fall 1997) was three percentage points higher and the rate of retention to the fourth semester (spring 1998) was five percentage points higher for learning community participants, but neither of these differences was statistically significant. Given these sample sizes (309 and 1193), the retention rates had to differ by just over six percentage points to yield statistical significance.

Controlling for Background Differences

Given that the participant group included significantly lower proportions of students who were placed into remedial writing and reading, it is important to control for these background differences in evaluating the true effect of the program. Table 2 summarizes the results of a linear regression analysis, which first established age, percentile rank in high school, and ethnic status as significant although limited predictors of semester GPA, accounting for just under 10% of the combined variance. Student participation in learning communities did not significantly contribute to predicting grades after controlling for these factors.

Table 2
Effect of Learning Community on Semester GPA when Controlling for Significant Predictors via Block Entry in Linear Regression

	Unstandardized Coefficients			Significance
	Beta	Std. Error	*t*-value	Level
(Constant)	0.506	0.177	2.85	0.004
Age	0.052	0.008	6.26	0.000
HS % rank	0.013	0.002	8.48	0.000
Ethnic status[1]	-0.434	0.089	-4.88	0.000
Learning Community[2]	0.079	0.081	0.98	0.328

Without program participation variable, R = .309, R^2 = .095, F(3,1245) = 43.68; $p<.001$
With program variable, R = .310, R^2 = .096, F(4,1244) = 33.00; $p<.001$
[1]Dummy variable with values, 0 = not African American; 1 = African American
[2]Dummy variable with values, 0 = comparison group; 1 = learning community participant

The initial significant difference in retention to the spring 1997 semester was evaluated using a corresponding logistic regression analysis to accommodate the dichotomous outcome variable of retention. Table 3 summarizes the results of this

analysis, showing that the significant difference between learning community participants and nonparticipants disappeared when controlling for other predictors of retention, specifically, semester credit load, high school percentile rank, placement into remedial writing, and placement into remedial reading.

Table 3
Effect of Learning Community on Retention to Next Semester when Controlling for Significant Predictors via Block Entry in Logistic Regression

	Unstandardized Coefficients			
	Beta	Std. Error	Wald	Significance Level
(Constant)	-0.656	0.291	5.09	0.024
Semester credit load	0.133	0.023	32.90	0.000
HS % rank	0.009	0.003	7.63	0.006
Remedial writing[1]	-0.326	0.144	5.12	0.024
Remedial reading[2]	0.439	0.152	8.34	0.004
Learning Community[3]	0.255	0.180	2.00	0.157

Without learning community variable, model $\chi^2(4) = 55.55$; $p<.001$
With learning community variable, model χ^2 increases by 2.06 (df = 1); n.s.
[1]Dummy variable with values, 0 = college level writing; 1 = remedial writing
[2]Dummy variable with values, 0 = no reading required; 1 = remedial reading
[3]Dummy variable with values, 0 = comparison group; 1 = learning community participant

Given the large and diverse composition of students participating in learning communities, final analyses focused on the impact of participation among two specific subgroups of students: those who were placed in remedial reading and African American students. Among the students in remedial reading, learning community participants averaged a slightly higher semester GPA (2.13 vs.1.91), but this difference was not significant ($F(1,497) = 2.055, p = .152$). Similarly, the participant group had a higher semester retention rate (85% vs. 77%), but again, this difference was not statistically significant ($\chi^2(1) = 2.173, p = .140$). The same pattern held among African American students. Learning community participants averaged higher grades (1.96 vs. 1.58, $F(1,236) = 3.841, p = .051$), and retention rates (84% vs. 78%, $\chi^2(1) = .751, p = .386$), but neither difference was statistically significant.

More recent data on persistence showed that among the fall 1995 learning communities cohort, 41 percent of the African American participants, and 53 percent of the male African American participants were enrolled for the spring 1997 semester. These data suggest that the program may have a disproportionately positive impact for African American males, the group with the lowest current levels of persistence at

IUPUI. While the numbers are still very small, this retention rate is significantly higher compared not only to other African American males but also to all other IUPUI undergraduates.

Discussion

There are some signs that the fall 1996 pilot learning communities program had a positive impact on participants, but the evidence is not substantial: grades and persistence were slightly higher, although the impact of persistence is attenuated when controlling for other factors.

It is important to note that the apparently higher retention rates among learning community participants to the fourth and fifth semesters are not statistically significant. Often, small increases in retention are considered notable without ever considering whether they may be due to random statistical error.

Results: Peer Mentoring

The Student Peer Mentor Program is a form of supplemental instruction (SI) that operates with groups of students working with a student mentor to better understand difficult course material. The National Center for Supplemental Instruction's 1996 review of SI programs at several universities demonstrated that this collaboration provides an enriching environment in which students strengthen academic skills and build community. In the IUPUI program, student mentors are trained to guide the students through the learning process, not to provide traditional tutoring in a variety of courses that have been traditionally difficult for students and often have a high failure rate. Mentoring is provided in over 50 courses, and there were 140 students serving as mentors in the 1996-97 academic year.

Baseline Group Comparisons

Students were classified as taking part in the Student Peer Mentoring Program if they attended at least three mentoring sessions in association with a single course. The comparison group included all students enrolled in mentoring courses who did not take advantage of the mentoring sessions at least three times. Students could be enrolled in more than one mentoring course, and as long as they attended three sessions for one of these courses, they were considered to have taken part in the program.

Tables 4a and 4b summarize the differences between program participants and nonparticipants according to the background, enrollment, performance, and persistence indicators available for this group. Since the student mentoring program is open to all students enrolled in these very popular courses, the pool of eligible participants is both large and diverse, covering students in all schools, at all class levels, and of varying ability levels.

Table 4a
Baseline Comparisions for the Peer Mentoring Program
Background and Enrollment Characteristics–Fall 1995

	Participants		*Nonparticipants*	
	Indicator	n[1]	Indicator	n[1]
Average age***	26.4	616	23.9	7204
Percent female***	65%	616	56%	7204
Percent minority[3]***	19%	616	15%	7204
Average HS% class rank	54.4	447	52.6	5727
Applied for financial aid***	65%	616	57%	7204
Average percent of need met**	45.3	399	40.6	4088
Placed in remedial math[4]	68%	131	74%	1773
Placed in remedial writing[4]	48%	131	47%	1752
Placed in remedial reading[4]	28%	129	26%	1756
Percent in prep program***	25%	616	30%	7204
Percent freshmen***	47%	616	55%	7204
Average prior GPA***	2.80	419	2.52	4682
Average semester hours**	10.9	616	10.5	7204
Performance and Persistence Unadjusted				
Average semester GPA***	2.83	602	2.37	6706
Average mentor course GPA***	2.74	562	2.26	5939
Percent completing mentor course***	83%	616	77%	7204
Retained to next semester***	92%	616	77%	7204
Retained to next year***	78%	616	63%	7204

[1]Valid n (excluding missing values) upon which indicator is based.
[2]t-tests used for all interval variables; χ^2 for percentile-based variables
[3]No significant difference exists for African American students, but as there is a difference for minorities as a whole, students from all minority ethnic backgrounds were grouped together for this table.
[4]Placements evaluated for beginning freshmen only.
*$p<.05$
**$p<.01$
***$p<.001$

As the tables show, the self-selected participants differ from nonparticipant peers along several critical dimensions: on average, they are older, have higher starting grade-point averages (GPA), are less likely to be freshmen, and are less likely to be in the UEC-preparatory program, which enrolls the highest-risk students. In other words, many relatively better-prepared students take advantage of the program.

Table 4b
Baseline Comparisions for the Peer Mentoring Program
Background and Enrollment Characteristics–Spring 1996

	Participants		*Nonparticipants*	
	Indicator	n[1]	Indicator	n[1]
Average age***	26.6	497	24.0	6499
Percent female	60%	497	56%	6499
Percent minority[3]	18%	497	16%	6499
Average HS% class rank	55.1	348	52.5	3635
Applied for financial aid**	62%	497	56%	6499
Average percent of need met*	46.9	309	42%	3635
Placed in remedial math[4]	88%	60	83%	494
Placed in remedial writing[4]	34%	58	51%	482
Placed in remedial reading[4]	17%	58	26%	482
Percent in prep program	30%	497	29%	6499
Percent freshmen*	44%	497	50%	6499
Average prior GPA***	2.84	407	2.55	5532
Average semester hours***	10.9	497	10.4	6499
Performance and Persistence Unadjusted				
Average semester GPA***	2.79	490	2.30	6017
Average mentor course GPA***	2.64	467	2.13	5388
Percent completing mentor course***	87%	497	78%	6499
Retained to next semester***	84%	497	70%	6499
Retained to next year***	74%	497	61%	6499

[1]Valid n (excluding missing values) upon which indicator is based.

[2]t-tests used for all interval variables; χ^2 for percentile-based variables

[3]No significant difference exists for African American students, but as there is a difference for minorities as a whole, students from all minority ethnic backgrounds were grouped together for this table.

[4]Placements evaluated for beginning freshmen only.

*$p<.05$

**$p<.01$

***$p<.001$

There are also differences for both semesters in that the participant group was more likely to have applied for financial aid and to have had a larger proportion of their financial need met. Finally, for the fall 1995 cohort, participants included proportionately more females and fewer minorities, but neither of these differences held for the spring semester.

Unadjusted Outcome Differences

Given the initial differences between program participants and nonparticipants, it is not surprising to see across-the-board differences in the performance and persistence indicators. Participants in the Student Peer Mentoring Program had significantly higher semester grades overall, as well as in their mentoring courses. They were also more likely to complete their mentoring courses, and to re-enroll both in the next semester and a year later (see Tables 4a and 4b).

Controlling for Background Differences

Following the earlier strategy, linear regression analysis was used to determine which background and enrollment indicators contributed to the prediction of semester GPA so that these factors could be controlled in evaluating program impact. As one might expect, the single best predictor of semester GPA was prior GPA, which alone accounted for just under one-quarter of the variation in semester GPA. Adding age, high school rank, English placement, math placement, minority status (minority vs. nonminority), and class level (freshman vs. all other), brought the total variation accounted for in semester GPA to 27%. After controlling for these factors, program participation still contributed significantly to the predication of semester GPA, adding another 0.5% to the prediction. Table 5 summarizes the results of this regression analysis. The beta weight for the peer mentoring variable shows that program attendance contributed nearly one-third of a letter grade (.326) on average to the students' semester GPA.

Unfortunately, relying on prior cumulative GPA as a predictor restricts the analysis to students who have had some prior college experience. To circumvent this limitation, subgroup analysis was used, focusing specifically on first-time college students (beginning freshmen) and, within that group, students who placed into remedial reading, and students in the preparatory program for at-risk students. For these analyses, the fall 1995 and spring 1996 groups were merged to provide more power through larger sample sizes.

When looking at first-time freshmen only, many of the demographic and enrollment differences seen in the larger group diminished, although they did not completely disappear. The unadjusted average semester GPA for the freshman learning communities participants was 2.78, compared to 2.17 for nonparticipant freshmen. This 0.59 difference was reduced only slightly to 0.50 when statistically controlling for the remaining background differences in this subgroup, but the reduction in spring GPA from 0.59 grade points to 0.50 grade points is still a highly significant difference. Furthermore, freshman participants were retained to the next year at a rate of 16 percentage points higher than nonparticipants. This difference is reduced only to 14 percent, when controlling for remaining background differences.

Table 5
Effect of Peer Mentoring on Semester GPA when Controlling for Significant Predictors via Block Entry in Linear Regression

	Unstandardized Coefficients			Significance
	Beta	Std. Error	*t*-value	Level
(Constant)	0.457	0.074	6.14	0.000
Prior cumulative GPA	0.496	0.016	30.12	0.000
Age	0.024	0.002	9.90	0.000
HS % rank	-0.004	0.001	7.40	0.000
Ethnic status[1]	-0.219	0.039	-5.64	0.000
Remedial writing[2]	-0.417	0.028	-5.34	0.000
Remedial math[3]	-0.135	0.031	-4.38	0.000
Class level[4]	-0.051	0.027	-1.88	0.061
Peer Mentoring[5]	0.326	0.052	6.29	0.000

Without peer mentoring variable, R = .529, R^2 = .270, F(7,5370) =283.50; $p<.001$
With peer mentoring variable, R = .525, R^2 = .275, F(8,5369) =254.79; $p<.001$
[1]Dummy variable with values, 0 = not minority; 1 = minority
[2]Dummy variable with values, 0 = college level writing; 1 = remedial writing
[3]Dummy variable with values, 0 = college level math; 1 = remedial math
[4]Dummy variable with values, 0 = beyond first year; 1 = first year
[5]Dummy variable with values, 0 = comparison group; 1 = peer mentoring participant

The same pattern holds true when looking at first-time students in the preparatory program (i.e., for high-risk students), and only at first-time students who placed into remedial reading. In both cases the differences between participants and nonparticipants in background and enrollment characteristics are very small and mostly unrelated to factors that predict performance and persistence. At the same time, the differences in outcomes are as large or larger than for the overall group. This is especially noticeable among students who place into remedial reading, where program participants achieve semester GPAs nearly a grade higher on average than students who do not participate in the program.

Discussion

The Student Mentoring Program has a significant impact on students who participate, both in terms of enhanced grades and higher retention rates. When looking at the entire student population for whom this program is available, it appears that many of the relatively better prepared students take advantage of this opportunity. However, even when controlling for differences in students' level of preparation, there remains a large effect of one-third of a full letter grade on average. Furthermore, the

program appears to have even greater benefit for first-time students, including the least well-prepared among them as indicated by placement into remedial reading.

Impact of the Study

The results of the study were distributed to all campus groups involved with the administration of existing programs, as well as with the formulation of the new academic unit, University College. Overall, the results were judged to be both valid and useful, but, at the same time, several limitations were noted.

The study provided the most objective evidence yet available on the effectiveness of the peer mentoring program. This enabled program administrators to seek greater support among faculty from whom they sought participation, although critics of the program suggested that the impact of self-selection on participation was inadequately controlled for. Still, based partly on the evidence for success, the student mentoring program received increased support from faculty and senior administrators and was earmarked as a cornerstone program for the developing University College.

Many faculty and staff recognized that the learning communities program was being evaluated during a period of development that was to continue after the study was completed. By the fall of 1997, the number and diversity of learning communities had expanded considerably, and earlier experiences and continuing faculty and staff development resulted in refinements in the structure and processes used within the communities. In many ways, the study came to be considered as a baseline for evaluating the impact of program improvements. The University College has identified itself as a place of continuous learning and continuous assessment, consistent with overall campus commitments to learning, assessment, and improvement.

By fall of 1997, learning communities had expanded to include 650 first-year students, and a First-year Studies committee was in place to oversee the development of curricular objectives for new course proposals within the learning communities program. Participating faculty were convinced that the limited results of the study were related more to start-up inconsistencies and unevenness but that the program had great potential. Early evidence of success was eagerly sought and Table 6 displays the promising evidence that emerged from the fall 1997 learning communities.

Students in the fall 1997 learning communities courses were more likely to achieve grades of A or B and less likely to achieve grades of D or F or to withdraw from their nonlearning community courses. The retention rate to the spring 1998 semester was again higher among learning community participants and, although it was not statistically significant in itself, when combined with data from the previous semester, the higher retention rates for learning community students achieve statistical significance as a program effect. As promising as this evidence is, further analyses will be conducted in our ongoing evaluation to determine if the differences hold up when controlling for background differences between participants and nonparticipants. In addition, campus discussion also notes that the original analyses did not consider outcomes that might be equally or more important than grades and persistence, such as student involvement in learning, and changes in students' expectations for performance.

Table 6
Fall 1997 Learning Communities:
Grades in Other Courses and Retention to Spring 1998

	Participants	*Nonparticipants*
Number of students	650	914
% A/B grades	39%	32%
% D/W/F grades	40%	48%
Retained to spring 1998	79%	75%

Notes: The difference in distribution of grades was significant according to a χ^2 test for independence at $p<.01$. The difference in retention rates was not significant ($p = .146$).

Moving beyond Performance and Persistence

Learning communities are designed to increase student performance and persistence in a direct way, but there also significant indirect outcomes. Measures of transforming the campus culture to one more centered on student learning, for example, is a very broad goal that often eludes measurement efforts. Should some of these less tangible outcomes be included in a cost-benefit analysis? Do we need to invest more in learning communities to make them increasingly effective? Should we move scarce resources to programs, such as peer mentoring, that demonstrate clearer quantitative gains? What other forms of evidence can faculty and staff use to determine what the "right thing to do" is for our students?

These are the kinds of questions that the present evaluation engendered. In seeking answers to these questions, various members of the IUPUI academic community—student affairs staff, professional advisors, faculty, and evaluation researchers—have come together to devise ways to simultaneously improve the learning communities program and the methods for evaluating it and other programs.

Assessing Qualitative Outcomes of Learning Communities

Tinto (1997) describes an evaluation of learning communities that combines a quantitative approach similar to that used at IUPUI with a range of qualitative techniques including participant observation, interviews, and document review. The qualitative data support assumptions about how learning communities foster student involvement through the development of peer support groups and the students' active role in the learning process. These are similar to observations made by student and faculty participants in IUPUI's learning communities. It is possible that IUPUI's initial implementations of learning communities were not consistent enough to yield statistically significant results. But, it is also possible that these other outcomes may not be sufficient to produce gains in performance and persistence rates. If these other positive outcomes are not accompanied by such increases, are they still worth pursuing in and of themselves?

Linking Outcome Evaluation with Process Improvement

Collecting systematic data on such qualitative outcomes as the development of peer support groups and active learning behaviors may be more important as a guide to program improvement than for establishing the value of the learning communities program. However, there are those in the university community and beyond who would question the value of investing resources in programs in which demonstrable gains in persistence and performance are not as clear.

As Tinto suggested, the qualitative data may tell us more about *how* learning communities work to improve student learning. In an era of scarce resources and increasing demands for accountability and performance, it is important to the future funding of these programs that changes from any such qualitative data eventually produce significant improvements in quantifiable performance measures.

The Role of Self-Selection in Program Participation and Evaluation

One of the outcomes of the study has been an interesting, if philosophical, debate on the ethical and efficiency aspects of creating control and experimental groups to more accurately isolate the impact of various programs and interventions designed to improve student performance and persistence. Several faculty brought into question the sufficiency of controls used to conclude that the peer-mentoring program was so effective. Proponents of these programs argued that it would be unethical not to make available these supports to students who wished to take advantage of them. Several faculty in the economics department suggested a nonexperimental technique to adjust for self-selection that is now being explored. However, program proponents argued that self-selection is part and parcel of such programs and should not be artificially or statistically removed from any evaluation.

Those who argue that self-selection should not be isolated before reaching conclusions about the program's effectiveness have prevailed in the discussions to date. Given this, it is inherently more difficult to isolate statistically the outcomes that are attributable to the processes of the program rather than the character of those who chose to participate. The need to resolve this issue depends on the ultimate goal of the evaluation. If its primary purpose is to help decide whether to continue or discontinue the program, the kinds of background controls used in this evaluation may be sufficient. If, however, the goal is to learn how to improve the program, it is important that selection process effects be separated from program process effects so as to understand better the mechanisms behind successes and failures.

Conclusions and Discussion

We have described an evaluation of a learning communities program within a specific institutional context. The evaluation uses common statistical techniques for assessing program effectiveness in an applied setting, which some readers may find too technical and others too simplistic. The reaction at IUPUI ran this same gamut, but it was also clear that the effort was recognized to be extremely important given

the resources that had been devoted to the programs. A perfect evaluation is not possible and it may not be necessary to invest so much in the evaluation process as to make it a significant cost component, but it is essential, and not too costly, to at least look at some basic outcomes, controlling for background differences as this study has done.

Program evaluation must be seen as an integral part of program development. Evaluation is important both to assess the value added by the program as well as to determine ways in which it may be continually improved. These efforts become successful only to the degree that they provide information that is useful for improving program effectiveness. Therefore, program evaluation cannot be done for its own sake, but must be seen as part and parcel of program administration.

In order for evaluation to be effective, it must balance the need for a third-party, objective approach with needed involvement by both program proponents and opponents. Collaboration is the key to achieving this balance, and it requires an open environment for communicating and sharing data. Those whose programs are being evaluated must trust that others will treat information fairly and understand its limitations. Those who conduct evaluations must not hold the results of such inevitably imperfect evaluations as objective truth but rather as one source and one type of evidence.

In sum, a culture of evidence must be established so that faculty, staff, and students continue to welcome program evaluation as a useful source of information. Even though the learning communities program at IUPUI did not produce statistically significant gains in performance and persistence, the campus has not backed away from its commitment to serve the academic support needs of its diverse student body. Efforts to improve the learning communities program and the ways in which it is evaluated will continue as IUPUI strives to deal with the complex issues involved in becoming an even better urban university.

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Suggested Readings

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