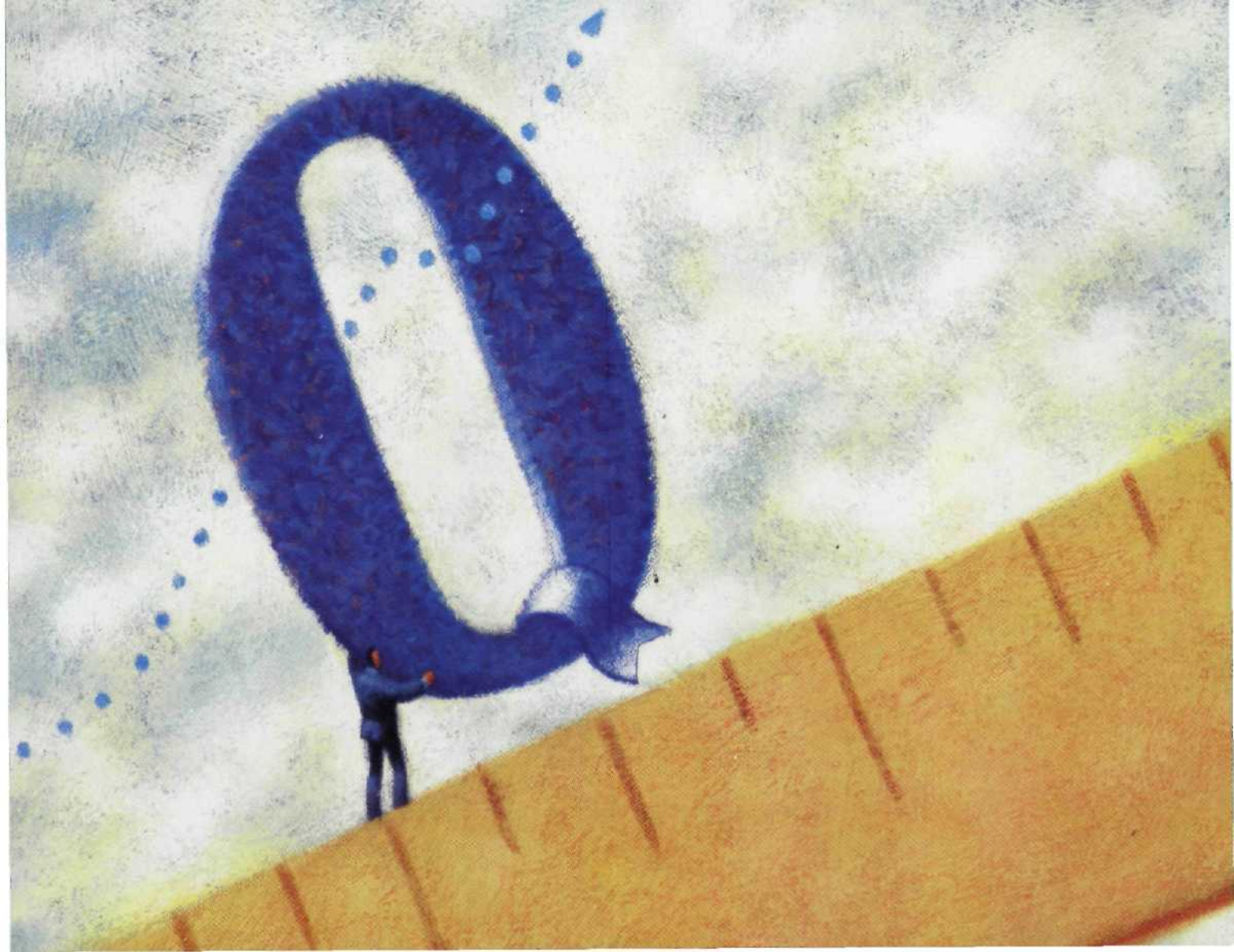
What Does Institutional Selectivity Tell Us About Educational Quality?

BY GEORGE D. KUH AND ERNEST T. PASCARELLA



In the minds of most people, the best colleges are those that are the most selective. In large part, this view is driven by the popular *U.S. News & World Report* rankings that use average ACT or SAT scores of entering students—a proxy for selectivity—as a primary measure of quality. This is not altogether unreasonable. Selective colleges and universities have high graduation rates, and attending such colleges confers social status and is positively linked to increased post-college earnings.

Although graduation rates and earnings may say more about the preparation, motivation, and socioeconomic backgrounds of the students attending selective institutions than what these colleges and universities contribute to student development, the combination of benefits is apparently sufficient for some to take the annual college rankings tournament seriously.

U.S. News recognizes that selectivity is not the only ingredient of collegiate quality, so it encourages prospective students to consider more than test scores when choosing a college. In fact, only one of the 16 measures it uses to develop its rankings directly represents selectivity. But Thomas Webster's recent study of the rankings indicates that the average SAT/ACT score of enrolled students is by far the most influential criterion in determining where an institution ranks.

We replicated Webster's analysis using only the top 50 national universities and found that the correlation between *U.S. News* rankings and institutional average SAT/ACT score was -.89. What this means is that for all practical purposes, *U.S. News* rankings of best colleges can largely be reproduced simply by knowing the average SAT/ACT scores of their students. Once the average SAT/ACT score is taken into account, the other so-called "quality" indices have little additional influence on where an institution falls on the list.

If student body selectivity is what the rankings represent, is it reasonable to assume that selectivity also reflects what students actually experience during college? One argument to support the view that selectivity equals educational quality is based on research showing that peers substantially influence what students do during college and what they gain in certain areas, particularly in their attitudes, values, and other dimensions of personal and social development. That is, being exposed to bright, highly able people has salutary direct effects on how students spend their time and what they talk about, as well as on the overall tone of the college environment.

At the same time, voluminous research shows that other factors are also important to student development—working collaboratively with peers to solve problems, study abroad, service learning, doing research with a faculty member, and learning communities, to name a few. Is it reasonable to assume, as the college rankings seem to imply, that students at more selective institutions have or take greater advantage of these kinds of learning opportunities? Said another way, what does selectivity have to do with educational quality as represented by student exposure to effective educational practices?

George D. Kuh is Chancellor's Professor and director of the Indiana University Center for Postsecondary Research. Ernest T. Pascarella is the Mary Louise Petersen Chair in higher education at the University of Iowa. He is the co-author (with Patrick Terenzini) of the 1991 Jossey-Bass book: How College Affects Students: Findings and Insights from Twenty Years of Research. *An updated edition of the book is in press.*

Illustration by Rob Colvin/Images.com, Inc.

Effective Educational Practices Measured in the NSSL

1) Student-Faculty Contact: quality of nonclassroom interactions with faculty, faculty interest in teaching and student development.

2) Cooperation among Students: instructional emphasis on cooperative learning, course-related interaction with peers.

3) Active Learning/Time on Task: academic effort/involvement, essay exams in courses, instructor use of high-order questioning techniques, emphasis on high-order examination questions, computer use.

4) Prompt Feedback: instructor feedback to students.

5) High Expectations: course challenge/effort, scholarly/intellectual emphasis, number of textbooks or assigned readings, number of term papers or other written reports.

6) Quality of Teaching: instructional clarity, instructional organization/preparation.

7) Influential Interactions with Other Students: quality of interactions with students, non-course-related interactions with peers, cultural and interpersonal involvement.

8) Supportive Campus Environment: emphasis on supportive interactions with others.

We set out to answer this question using two independent datasets. The first is the National Study of Student Learning (NSSL), a federally funded longitudinal investigation conducted in the mid-1990s. The second is the National Survey of Student Engagement (NSSE), an annual survey of the extent to which first-year and senior students engage in purposeful educational activities. First, we'll briefly describe these two studies and then discuss the surprising finding that selectivity and educational quality are, for all practical purposes, unrelated.

National Study of Student Learning

The NSSL was a federally funded longitudinal investigation of student development and institutional effectiveness involving 18 four-year colleges and universities. As a group, the schools closely approximated the national population of undergraduates by ethnicity and gender and were also representative of a variety of institutional characteristics such as type, public or private control, size, location, and commuter versus residential character. Equally important, the schools varied widely in terms of their selectivity, ranging from one of the most selective in the country (with an average SAT of 1400) to one that was essentially open admission.

The students randomly selected to participate completed a battery of instruments at several different times. In 1992, the original sample was of 3,331 students who filled out a pre-college survey providing information about their sex, ethnicity, age, family socioeconomic status, and secondary school achievement, as well as degree aspirations, intended major, and motivation for learning.

They also completed the Collegiate Assessment of Academic Proficiency (CAAP), a test of general academic skills developed by the American College Testing Program (ACT) that measures reading comprehension, mathematics, critical thinking, writing skills, and science reasoning.

Because two of the institutions were essentially open admission, they did not have usable average SAT/ACT scores. Consequently, we used a composite of the average pre-college CAAP reading comprehension, mathematics, and critical thinking scores as a proxy for the average SAT/ACT scores of incoming students at each institution in the study. This was reasonable, given that the correlation between average SAT/ACT scores and the average pre-college CAAP composite score was .95.

Two follow-up data collections were done, one at the end of the first year of college (spring 1993) and the second at the end of the sophomore year (spring 1994). In both instances, students completed different CAAP tests as well as the College Student Experiences Questionnaire (CSEQ) and a detailed NSSL follow-up questionnaire.

The CSEQ and the NSSL questionnaires gathered extensive information about classroom and nonclassroom experiences during the preceding school year, which we used to estimate students' engagement in college. The questions focused on Chickering and Gamson's principles of good practice in undergraduate education and other research on effective teaching and interactions with peers and faculty members.

All told, eight general categories of promising practices (see box) were represented on the follow-up surveys. Extensive evidence exists to indicate that, even in presence of controls for important confounding influences, these dimensions of good practice are significantly and positively linked to cognitive and non-cognitive growth during college.

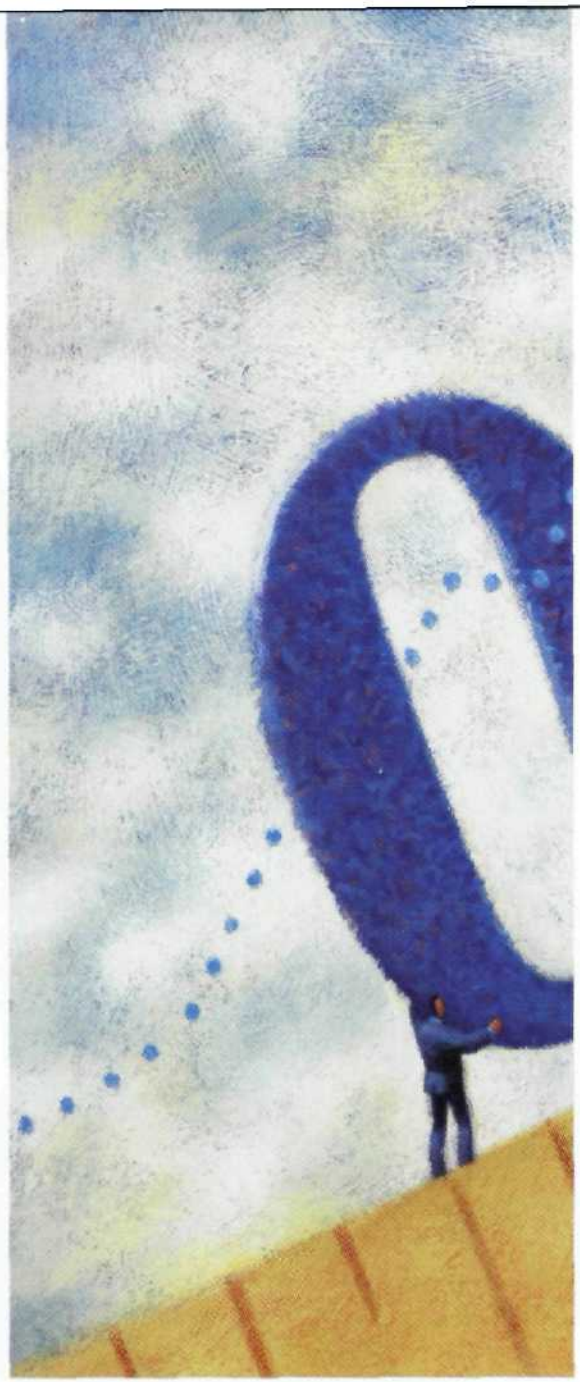
After the first two years of the study, we had complete data for 1,485 students, about 45 percent of the original sample. To adjust for sample attrition, we weighted the sample to correspond to population characteristics by sex, race, and institution. Additional analyses also indicated that there was no bias in the sample attributable to age, socioeconomic background, or pre-college cognitive test scores.

National Survey of Student Engagement

The NSSE project annually assesses the extent to which students report engaging in empirically derived good practices in undergraduate education and what they gain from their experience. For this analysis we used information from the 76,123 undergraduates (38,458 first-year students and 37,665 seniors) at 271 different four-year colleges and universities who completed the NSSE in the spring of 2002. Participating institutions generally mirrored the national profile of four-year colleges and universities.

In addition to average SAT/ACT scores, we used Barron's Selectivity Score to estimate institutional selectivity, a nine-category index ranging from "noncompetitive" to "most competitive" based on several factors: median SAT/ACT scores and the percentage of first-year students above certain scores; the percentage of first-year students within specific quintiles of their high school graduating class; minimum class rank and grades needed for admission; and percentage of applicants admitted. The schools in the study ranged from open admission to highly selective, though few of the 30 most selective private colleges and universities were included.

The NSSE engagement questions, like the NSSL study, measure similar dimensions of good practice. They include student-faculty interaction, active and collaborative learning, academic challenge, diversity-related experiences, and supportive campus environment.



Incorporated within several of these general scales are a number of subscales. The student-faculty interaction scale included two: course-related interactions and out-of-class interactions. The academic challenge scale included a subscale measuring high-order thinking activities, and the supportive campus environment scale contained subscales focusing on interpersonal support and support for learning.

As Astin and Lee demonstrated, a substantial portion of differences in student reports of academic and non-academic experiences during college are explained by differences in the background characteristics of the students themselves. Thus, failure to control for such student pre-college characteristics could lead to the conclusion that differences in reported student experiences are institutional effects when, in fact, they may be simply the result of differences in the characteristics of the students enrolled at different institutions.

In the NSSL analyses, these controls were extensive and included such factors as demographic and family characteristics, secondary school academic and social experiences, tested academic ability, educational aspirations, and academic motivation.

The NSSE data did not have as extensive a set of controls. However, we were able to control for pre-college characteristics such as age, race, sex, and who was a first-generation student or who was a transfer student. Because there is some controversy as to the appropriate level of analysis with multi-institutional data, both data sets were analyzed, using first the institution as the unit of analysis and then individuals.

The first set of analyses indicated how much difference (or variance) there is between average institutional scores on the good practice dimensions that is uniquely linked to measures of institutional selectivity. The second set of analyses reveals how much of the differences in individual student scores on the good practice dimensions are a function of the selectivity of the institution attended.

The Emperor Is Scantily Clad

So, to what extent are good educational practices at the institution or student level a function of the selectivity of a particular school and to what extent are they related to other factors? Our results clearly show that institutional selectivity is a weak indicator of student exposure to good practices in undergraduate education. This conclusion holds regardless of whether the data represent the performance of the institution or individual students. In the NSSL study, for example, college selectivity (which was measured by the average pre-college CAAP composite score at each institution) simply did not explain many of the differences between institutions on any good practice variable.

Across all 20 good practices considered, the institution-level variance explained by selectivity ranged from less than 0.1 percent to 20 percent, with a median value of only 3.5 percent. In one instance—instructor feedback to students—selectivity did explain 20 percent of the institution-level variance, but the effect of selectivity was negative, meaning that the more selective the college, the less frequently students got feedback from their teachers.

Selectivity explained a small but statistically significant percentage of the student-level variance in another 10 of the 20 good practice variables, but on two of those variables—number of essay exams in courses and (again) instructor feedback to students—the influence was negative. Furthermore, the percentage of student-level differences in the 20 good practices accounted for by selectivity was quite modest, ranging from less than 0.1 percent to 2.7 percent with a median value of only 0.5 percent.

The NSSE study results also indicated at best trivial relationships between selectivity and the various measures of student engagement in effective educational practice for both first-year and senior students. Across both first-year and senior students, selectivity explains between 0.1 percent to 3.8 percent of the institution-level variance in good practices, with a median value of only 0.4 percent. Similarly, the selectivity of the institution attended explained between 0.1 percent to 2.3 percent of the student-level differences in good practices, with a median value of 0.2 percent.

Consistent with the NSSL findings, the selectivity measures were most strongly linked with high expectations. However, even on this good-practice dimension, the unique variance explained by selectivity was only about 1 to 2 percent for first-year students and one percent for seniors. We explain these and other relevant findings in more detail in a longer 2003 paper listed in the Resources box.

Taken together, these two national studies indicate that selectivity and effective educational practices are largely independent. More specifically, between 80 to 100 percent of the institution-level variance and 95 to 100 percent of the student-level variance in good practices cannot be explained by an institution's selectivity. Attendance at a selective college or university in no way guarantees that students will be more likely to engage in effective educational practices than their counterparts at less selective schools. This is consistent with the substantial body of evidence showing that the selectivity of the institution a student attends contributes minimally to learning and cognitive growth during college (See Pascarella & Terenzini in Resources).

Indeed, the academic selectivity of a college does not necessarily reflect the quality of the undergraduate education actually received as represented by effective educational practices. So, if students, parents, and taxpayers want information about schools that promote the personal and intellectual growth of their undergraduates, national magazine rankings based essentially on selectivity won't be of much help.

The *U.S. News* rankings do point to the possibility that colleges and universities may differ in some important ways. What they do not fairly represent are the conditions that institutions control and that decades of research show matter to student learning, such as whether faculty members clearly articulate course objectives, use relevant examples, identify key points, and provide class outlines. Similarly, rankings do not take into account other student experiences that contribute to learning, such as participating in learning communities that take the form of linked courses or residential living/learning centers, service learning, and study abroad.

What's troubling about the selectivity race is that this vision of "quality" becomes a perverse incentive to raise admissions standards, which in turn intensifies the competition for the limited pool of the "best" students. The academic selectivity of an undergraduate student body is all but impossible to change in any appreciable way unless large amounts of scholarship money are available—funds that often go to students from families that can afford to pay for college.

Few public and private institutions can win at such a game. State legislatures effectively establish admissions policies at many public universities, and most private colleges and universities are largely limited to a specific demographic segment of prospective students. Even more pernicious, these and other efforts "to move up in the rankings" expend energy and resources that schools could more profitably be spent on innovative, educationally productive activities.

Selectivity and Effective Educational Practice Are Not Mutually Exclusive

The evidence is pretty clear from these and other studies that institutional selectivity has little net impact on good practices in undergraduate education. There is some evidence, however, that colleges and universities have more or less distinctive patterns of educational effectiveness. Although few schools have all the earmarks of educational excellence, some appear to be more effective than others in fostering educationally purposeful experiences inside and outside the classroom.

For example, the past few NSSE annual reports describe some campuses that are especially welcoming and supportive for first-year students and others that have organized the senior year around enriching culminating experiences. Recent analyses of a subsample of the NSSL data, carried out at the University of Iowa, suggest that some small liberal arts colleges in particular may maximize good practices in undergraduate education regardless of their academic selectivity or of the residential or full-time nature of their student bodies.

A research team from Indiana University's NSSE Institute for Effective Educational Practices recently completed a study of a diverse set of 20 colleges and universities that have higher-than-predicted graduation rates and higher-than-predicted engagement scores. Some of these institutions are selective; others are not. Thus, selectivity and effective educational practice, while not coterminous, are apparently not mutually exclusive either.

Conclusion

National magazines that purport to identify the nation's "best" colleges are essentially ranking institutions by their selectivity, not by the likelihood of their exposing students to the most effective educational practices. The good news is that parents, prospective students, and the media are beginning to understand these important nuances and are asking more meaningful questions as they seek to distinguish among institutions.

Given the challenges facing the nation and the higher education system, it's time for some straight talk about the deleterious grip that selectivity has had on our perceptions of what constitutes collegiate quality. It's bad public policy and educationally indefensible.

It would be much more productive to focus on developing indicators that more accurately represent what happens to students during college and to make this information available in a responsible way so that prospective students, policymakers, and institutional leaders can use it to make decisions that can improve student learning.

Authors' Note: We wish to acknowledge the contributions of several colleagues who assisted in the analysis of the data reported in this article: Paul Umbach, Greg Wolniak, University of Iowa; Ty Cruce, Robert Gonyea, John Hayek, Indiana University; Robert Carini, University of Louisville; and Chun-Mei Zhao, Carnegie Foundation for the Advancement of Teaching.

Resources

- Astin A. & J. Lee, "How Risky Are One-Shot Cross-Sectional Assessments of Undergraduate Students?," *Research in Higher Education*, Vol. 44, pp. 657-672, 2003.
- Chickering, A., & Z. Gamson, "Seven Principles for Good Practice in Undergraduate Education," *AAHE Bulletin*, Vol. 39, No. 7, pp. 3-7, 1987.
- Inkelas, K., & J. Weisman, "Different by Design: An Examination of Student Outcomes among Participants in Three Types of Living-Learning Programs," *Journal of College Student Development*, Vol. 44, No. 3, pp. 335-368, 2003.
- Kuh, G.D, "What We're Learning about Student Engagement from NSSE. *Change*, Vol. 35, No. 2, pp. 24-32, 2003.
- Kuh, G., J. Schuh, E. Whitt, & Associates, *Involving Colleges*, San Francisco: Jossey-Bass, 1991.
- *National Survey of Student Engagement, Converting Data into Action: Expanding the Boundaries of Institutional Improvement*, Bloomington, IN: Indiana University Center for Postsecondary Research, 2003, (www.iub.edu~nsse)
- Pascarella, E., "Identifying Excellence in Undergraduate Education: Are We Even Close?," *Change*, Vol. 33, No. 3, pp.19-23, 2001.
- Pascarella, E., T. Cruce, G. Wolniak, & C. Blaich, "Do Liberal Arts Colleges Really Foster Good Practices in Undergraduate Education?," Paper presented at the annual conference of the Association for the Study of Higher Education, Portland, OR, November, 2003.
- Pascarella, E.T., T. Cruce, G.C. Wolniak, G.D. Kuh, P.D. Umbach, J.C. Hayek, R.M. Carini, R.M. Gonyea, C.M. Zhao, "Institutional Selectivity and Good Practices in Undergraduate Education," Paper presented at the annual conference of the Association for the Study of Higher Education, Portland, OR, November, 2003.
- Pascarella, E., & P. Terenzini, *How College Affects Students*, San Francisco: Jossey-Bass, 1991.
- Pascarella, E., & P. Terenzini, *How College Affects Students (Volume II): A Third Decade of Research*, San Francisco: Jossey-Bass, in press.
- Tinto, V., & A. Goodsell, "Freshman Interest Groups and the First-Year Experience: Constructing Student Communities in a Large University," *Journal of the Freshman Year Experience*, Vol. 6, pp. 7-27, 1994.
- Webster, T., "A Principal Component Analysis of the *U.S. News* & World Report Tier Rankings of Colleges and Universities," *Economics of Education Review*, Vol. 20, No. 3, pp. 235-244, 2001.
- Zhao, C. & G. Kuh, "Adding Value: Learning Communities and Student Engagement," *Research in Higher Education*, Vol. 45, pp. 115-138, 2004.