Built To Engage:
Liberal Arts Colleges and Effective Educational Practice

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Are liberal arts colleges as rich with educational opportunity for their students as their proponents claim? Or are many headed the way of the dinosaur, as public universities mainstream pedagogical innovations such as learning communities, increase student-faculty research options, and invest in learner-centered technologies?[1]

In this paper I summarize some of what we know about student engagement in educationally purposeful activities at liberal arts colleges. Sidestepping any discussion about what constitutes a liberal arts college, or a liberal arts education, I use the Carnegie Foundation's (2000) definition: institutions that are primarily undergraduate colleges with major emphasis on baccalaureate degree programs and award at least half of their baccalaureate degrees in the liberal arts.

First, I briefly characterize the published evidence about the student experience at liberal arts colleges and introduce the relevance and importance of student engagement to learning and personal development. Then I present some selected findings from the National Survey of Student Engagement, which is housed at the Indiana University Center for Postsecondary Research. I close with some thoughts about what to make of all this and a few questions liberal arts colleges and their supporters might consider in the name of transparency and accountability.

The Student Experience at Liberal Arts Colleges

Scholars generally agree that the liberal arts college exemplifies what is "best" educational practice in undergraduate education (Astin, 1977; Chickering & Gamson, 1987; Hersh, 1999; Pascarella & Terenzini, 1991; Rosovsky, 1990). Estimates of the impact of different types of institutions on their students almost always favor liberal arts colleges (Astin, 1977, 1993, 1999; Chickering, 1969; Chickering & Reisser, 1993; Feldman & Newcomb, 1969; Kuh & Hu, 2001; Pascarella & Terenzini, 1991). That is, liberal arts college students tend to gain more in intellectual and personal development, more frequently pursue advanced graduate study, and are more likely to vote and take part in civic matters after college. A not-yet published study conducted by Professor Ernest Pascarella and his colleagues at the University of Iowa and the Center of Inquiry in the Liberal Arts at Wabash College found that the favorable effects of liberal arts colleges on a variety of desired outcomes of college persist well into the post-college years.[2]

One common explanation for what appears to be the superiority of liberal arts colleges is that they attract relatively well-prepared and highly-motivated students. Yet, after controlling for selectivity at both the student and institutional level, the advantages that obtain for liberal arts colleges in terms of effective educational practices remain **(Pascarella et al., in press).** Why?

One explanation is that liberal arts colleges create distinctive, developmentally powerful learning conditions that result in a practical as well as liberating educational experience (Condliffe-Lagemann, 2003; Schneider, 2003). Richard Hersh (1999, p. 192) accounts for the heightened impact of the liberal arts college experience this way:

> Residential liberal arts colleges—by virtue of their primary focus on teaching, their small size, residential nature, quest for genuine community, engagement of students in active learning, concern for a general and coherent education, and emphasis on the development of the whole person—provide the most important kind of undergraduate education for the 21st century… They are *sui generis*, themselves a special kind of pedagogy.

But what if structural features such as size and residential character are only part of the equation of a developmentally powerful experience? What if liberal arts colleges also happen to more frequently employ effective educational practices than other types of institutions? And what if these practices are transportable and "add value" to the undergraduate experience; that is, liberal arts colleges out-perform what one might expect, given the entering ability of their students and institutional features. Then, liberal arts colleges are not only vital, other forms and sectors of postsecondary education can learn some things from them.[3]

Assessing Student Engagement

To begin to answer these and other questions I draw on information from the National Survey of Student Engagement (NSSE). The project was stimulated by discussions in the mid 1990s to find ways to obtain and report legitimate alternative sources of information about collegiate quality, an effort that unlike rankings would be based on the research about student development and institutional effectiveness. Established with a grant from The Pew Charitable Trusts, NSSE (pronounced "nessie") is now supported entirely by institutional participation fees and is cosponsored by The Carnegie Foundation for the Advancement of Teaching and the Pew Forum on Undergraduate Learning. The foundation for NSSE is the "quality of student effort" concept on which C. Robert Pace developed the College Student Experience Questionnaire in the mid-1970s with a grant from the Spencer Foundation. Astin (1984) subsequently further fleshed out and popularized the concept with his "theory of involvement."

Drawing on the CSEQ and other long-running college student surveys, the relatively short NSSE instrument was designed by assessment experts and extensively tested to insure its validity and reliability and to minimize non-response bias. It is squarely focused on the extent to which first-year students and seniors engage in empirically-derived good educational practices and what they gain from their college experience (Kuh, 2001). Average response rate for paper and web versions is about 43%. Although NSSE doesn't assess student learning outcomes directly, the main content of the NSSE instrument, ***The College Student Report***, represents student behaviors that are

highly correlated with many desirable learning and personal development outcomes of college. Since 2000, more than 430,000 students from 730 four-year colleges and universities have participated at least once. Liberal arts colleges make up about 18% of the institutions participating in NSSE, which is about the same proportion (16%) of all four-year colleges. Thus, liberal arts colleges are well represented in NSSE, with 125 or 55% of the 228 total. Overall, the NSSE database now reflects about 58% of the undergraduate FTE enrolled at four-year colleges and universities.

To make student engagement results easier to understand and use as well as more accessible to a variety of stakeholders, NSSE grouped questions about student and institutional performance into five clusters or benchmarks of effective educational practices (Appendix A). They are:

- Academic challenge
- Active and collaborative learning
- Student-faculty interaction
- Enriching educational experiences
- Supportive campus environment

The scores for the benchmarks are standardized on a 100 point scale.

Participating institutions allow NSSE to use their data in the aggregate for national and sector reporting purposes and other undergraduate improvement initiatives. Institutions can use their own data for institutional purposes. Results specific to each institution and identified as such are not made public by NSSE except by mutual agreement.

What Have We Learned About
Student Engagement at Liberal Arts Colleges?

A variety of analyses conducted over the past several years shows that students at liberal arts colleges generally are more engaged across the board in effective educational practices than their counterparts at other types of institutions. On all five NSSE clusters of effective educational practice and other measures, liberal arts colleges score consistently higher than any other type of institution. The results favoring liberal arts colleges are net of various student characteristics, such as gender and age, and institutional features such as size, selectivity, residential nature, and sector. The box and whiskers chart in Figure 1 illustrates this by showing the benchmark scores for the academic challenge by institutional type. Each column shows the benchmark scores at the 5th, 25th, 50th (median), 75th, and 95th percentiles. The rectangular box shows the 25th to 75th percentile range, or the middle fifty percent of all scores. The "whiskers" on top and bottom represent the 95th and 5th percentiles. Appendix B contains the remaining four benchmark scores by institutional type.

Consistent with their espoused mission, liberal arts colleges also engage students more frequently in activities that encourage them to integrate their curricular and co-

curricular experiences (National Survey of Student Engagement, 2003). This set of activities (Figure 2) is a proxy for deep learning, requiring use of knowledge, skills, and competencies across a variety of academic and social activities that are integrated into a meaningful whole.

Figure 2

Integration Scale

- Worked on a paper or project that required integrating ideas or information from various sources
- Included diverse perspectives (different races, religions, genders, political beliefs, etc.) in class discussions or writing assignments
- Put together ideas or concepts from different courses when completing assignments or during class discussions
- Discussed ideas from your readings or classes with faculty members outside of classes
- Discussed ideas from your readings or classes with others outside of classes (students, family members, coworkers, etc.)
- Synthesizing and organizing ideas, information, or experiences into new, more complex interpretations and relationships

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Information Technology and Library Use

In terms of using information technology, seniors at liberal arts colleges tend to be exposed less to information technology in the classroom than first-year students when compared with their counterparts at other types of institutions. For example, compared with students at doctoral-granting universities, seniors at liberal arts colleges are not as often required to use information technology to complete assignments, make class presentations, or work in teams outside of class. At the same time, the proportions of seniors who say they "never" do these activities are about the same at all types of institutions, suggesting that liberal arts college students are using information technology, but not to the same degree; this may be in part a function of major field and class size. Information technology use reported by first-year students is more similar across institutional types.

The areas where liberal arts colleges seem to use information technology less frequently are in the classroom and taking courses online. For example, only half as many liberal arts college students take one or more courses online as students at other colleges and universities -- 5% and 11-12% respectively. It's worth noting that while liberal arts college students are similar to their counterparts elsewhere in terms of obtaining information for academic work from the WWW, they are less likely to say that their peers "frequently" cut and paste from the WWW into their papers or reports without attribution (76% frosh and 82% seniors compared with 89% frosh and 91% seniors at other institutions).

In addition, the pattern of student experiences with academic libraries at liberal arts colleges sets them apart from other types of institutions. For example, students at liberal arts colleges more frequently ask librarians for assistance and use the library website to obtain resources for their academic work. Moreover, liberal arts college students' experiences with the library are strongly correlated with other educationally purposeful activities, such as working with a faculty member on research or discussing papers with faculty members (Kuh & Gonyea, 2003), perhaps because the library is in close proximity to where students live making access much easier.

Campus Climate for Learning

Liberal arts colleges also offer qualitatively distinctive learning environments. That is, students at liberal arts colleges score well above their peers on measures of support for their academic and social needs. The quality of relationships between various groups on campus is particularly high, with a few exceptions one of which is noted later in terms of women's colleges. One troubling finding is that students of color, especially African American students, do not find the liberal arts college environment as supportive as other students (Hu & Kuh, 2003; National Survey of Student Engagement, 2000, 2001).

Enriching Educational Experiences

Another area of where liberal arts colleges perform well is the degree to which their students take advantage of opportunities to enrich their educational experience. For example, seniors at liberal arts colleges are more likely to have done community service or volunteer work, studied a foreign language, studied abroad, done independent study, and had a culminating senior experience, such as a capstone or senior thesis (Figure 3). They are also much more likely to have worked on a research project with a faculty member (39 percent compared with 29 percent of their peers at doctoral extensive universities). Indeed, at the highest performing liberal arts colleges, almost half of seniors reported doing a research project with a faculty member. The one educationally enriching experience that liberal arts colleges do not lead the pack is participating in a learning community. This is mildly disappointing, because learning communities have numerous positive effects on other aspects of engagement as well as a host of desired outcomes of college; in addition, these positive effects persist into the senior year of college (**Zhao & Kuh, 2004**).

Figure 3

Percentage of Seniors who Participated in Various
Educationally Enriching Activities

	DR-Ext	DR-Int	Master's	B-LA	B-Gen	Total
Practicum, internship, field experience	72%	72%	72%	74%	71%	72%
Community service/volunteer work	66%	60%	64%	77%	67%	66%
Research with faculty member	29%	26%	23%	39%	24%	27%
Learning community	25%	25%	27%	25%	28%	27%
Foreign language	44%	35%	35%	65%	36%	41%
Study abroad	18%	14%	14%	35%	15%	18%
Independent study/self-designed	24%	26%	26%	43%	30%	29%
Culminating senior experience	49%	58%	55%	73%	66%	60%

Students at liberal arts colleges take greater advantage of enriching educational experiences for several reasons. First, they are pre-disposed to doing many of these things when they begin college (**Pascarella et al., in press**). In addition, most students at liberal arts college students attend college full time and live on campus; thus, they have more ready access to opportunities for learning, both inside and outside the classroom. And they have more time to do these things, as they do not care for dependents to the same degree as students elsewhere and they work fewer hours on average than their counterparts at different types of institutions; those that do work tend to do so more on campus than off. However, even when these factors are taken into account, students at liberal arts colleges engage more in enriching educational activities than students at other types of institutions.

Experiences with Diversity

One of the more surprising findings from NSSE is that liberal arts college students report more experiences with diversity than their counterparts at other types of institutions (**Umbach & Kuh, in press**). The advantage is non-trivial, as indicated by a pattern of substantial effect sizes, after controlling for student and other institutional features. For example, students at liberal arts colleges are significantly more likely than their counterparts at other types of institutions to talk seriously with other students who have different views or who are from different racial and ethnic backgrounds, and to report making more progress in understanding people from other racial and ethnic backgrounds. They are also more satisfied overall with their college experience. In

addition, experience with diversity is strongly linked with viewing the campus climate as being supportive of academic and social needs. These effects are most pronounced for White students at liberal arts colleges (Hu & Kuh, 2003).

This pattern of results is surprising if for no other reason that many of these institutions are not naturally imbued with structural diversity; that is, many do not enroll substantial numbers of racial and ethnic minorities. A large number of liberal arts colleges were located for historical reasons in rural settings (Rudolph, 1990), which are neither populated nor viewed as desirable collegiate environments by students from historically underrepresented groups (Chang, 2001). As a result, liberal arts colleges do not score well on numerical indicators of diversity, such as a diversity density index or the likelihood of interaction between students of different racial and ethnic backgrounds. Only baccalaureate general colleges have a lower average diversity density index than liberal arts colleges (**Umbach & Kuh, in press).**

The types of meaningful relationships that lead to such outcomes are certainly possible and even numerous on larger, more complex university campuses. However, they are probably more likely to occur where the features of the learning environment induce ongoing, personal contact rather than idiosyncratic and intermittent contact where anonymity prevails. Smaller, residential, more human-scale settings create interpersonal environments where interactions among students from different backgrounds tend to take place over extended periods of time. Because these students live in close proximity, they are more likely to know one another; thus, relationships between students from different backgrounds may well deepen into friendships, become more meaningful, and have greater impact than passing acquaintances (Hu & Kuh, 2003). As a result, students are more likely to engage in mixed-race conversations outside of class about what they are learning, world events, and current issues, which to a degree reflect the goals of any institution's general education program.

Special-Mission Liberal Arts Colleges

The salience and magnitude of the impact of certain liberal arts colleges are in large part a function of clearly focused missions. Women's colleges are a case in point, as are institutions that feature a values-based philosophy and curriculum.

Educating Women. As a set of undergraduate institutions, women's colleges are more engaging for women than co-educational institutions almost across the board (Umbach, Kinzie, Thomas, Palmer, & Kuh, 2003). For example, women at women's colleges are more likely to have higher quality and more frequent interactions with faculty and with peers, report greater levels of academic challenge, and perceive the environment to be more supportive of their overall success (Table 2). This is true for both first-year students and seniors. However, consistent with other data (Astin, 1977), seniors at women's colleges do not find their campus climate to be as supportive of their social interests and needs. This does not, however, seem to have a deleterious effect on other aspects of their experience in terms of levels of engagement or outcomes. There is limited evidence to suggest that men's colleges can be similarly "highly engaging" for their students; this is certainly the case for Wabash College, for example, which is one of

the schools included in the DEEP project mentioned later because of its higher-than-predicted student engagement scores and graduation rates.3

Character Development. Shaping values and ethics was a primary goal of undergraduate education in the colonial colleges (Rudolph, 1990). But even with the secularization of American higher education, many liberal arts colleges have continued to espouse as one of their educational purposes providing students with opportunities to discover, refine, and test their values, or develop their character. Indeed, many liberal arts colleges claim to leave a distinctive imprint on the attitudes and values of their graduates. In this context, we can think of character as a window into personality, a constellation of attitudes, values, ethical considerations, and behavioral patterns that represent what people believe and value, how they think, and what they do. Thus, character is manifested in both intellectual and behavioral dimensions of public and private life, including a demonstrated commitment to the public good, personal integrity and responsibility, and an examined understanding of one's ethical responsibility to self and the larger community.

Figure 4 shows that -- as with many other desired outcomes -- students at liberal arts colleges report making greater gains in character development followed by their peers at baccalaureate general colleges, master's granting institutions and the two largest institutions, the doctoral/research university extensive and doctoral/research university intensive (**Kuh & Umbach, 2004**).[3] Also, students at religiously affiliated institutions report greater gains in character development than students at unaffiliated institutions.

Figure 4
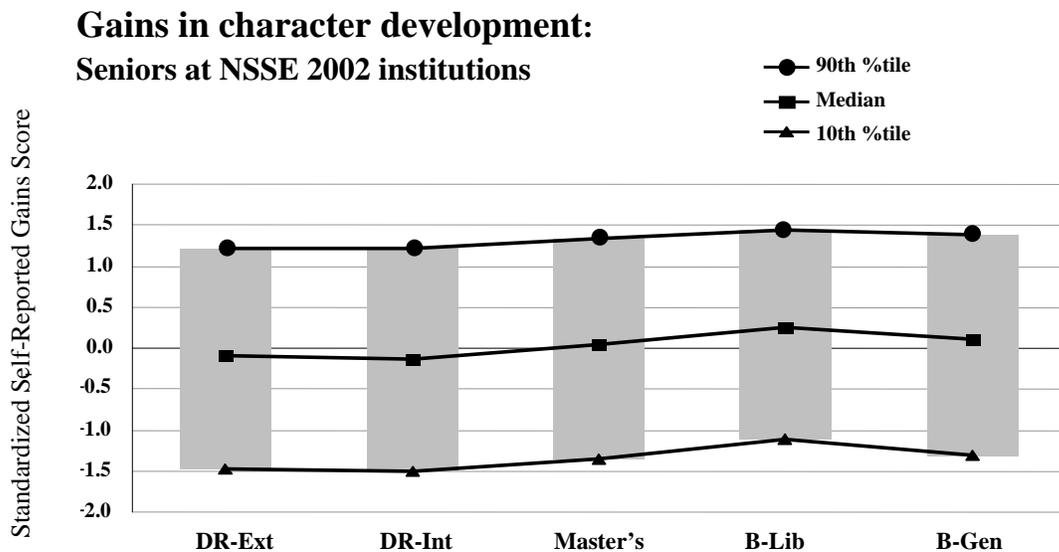
Among the activities likely to contribute to character development are engaging in integrative activities, doing community service or working on a project in the community

that is related to a course, volunteerism, the frequency with which students are exposed to diversity in the classroom, and talking with students from other races and ethnicities or having conversations with students who have different political and social views. Additionally, students at campuses that have a more supportive campus climate are more likely to indicate growth in character development. As we have seen, liberal arts colleges are generally stronger in these areas compared with other types of institutions. Thus, it stands to reason that students at liberal arts colleges would gain more in terms of character development.

Caveat Emptor

Taken together, these findings give ample reason to cheer liberal arts colleges in terms of the nature and frequency with which their students engage in educationally purposeful activities, especially compared with other types of four-year colleges and universities. At the same time, the differences in average scores between liberal arts colleges and other types of institutions are not always great enough to represent a practical or meaningful difference, perhaps, in terms of what an individual student may experience. In addition, there are dozens of individual institutional exceptions to the general rule that liberal arts college students are more engaged in effective educational practice. This is illustrated by Figure 5 -- what I call the EKG of student engagement in American higher education (Kuh, 2003).

Figure 5

**Level of Academic Challenge
for Seniors by Enrollment**
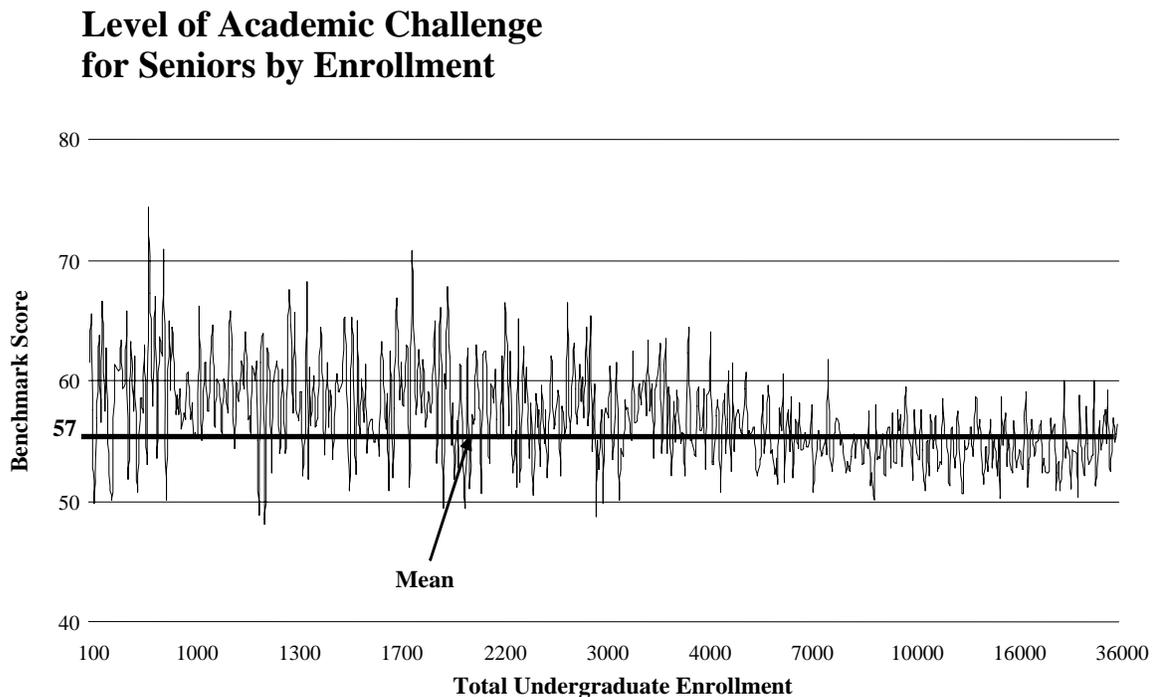
While smaller schools are, on average, more academically challenging, some large universities score better on this dimension than many smaller colleges. This pattern also holds for the four other benchmarks of effective educational practice. So, while smaller is generally better, it depends on the specific institutions being compared, as some large public universities are as, or more, engaging in certain areas than some small liberal arts colleges. Thus, claims about collegiate quality cannot be generalized to all institutions in a given sector nor can we say that all colleges of a certain type and size are comparable, or that one type is superior to another

Within College Variance

Figure 6 shows the frequency of first-year student contact with faculty members at liberal arts colleges. The scores range (from left to right) from the lowest scoring school to the highest scoring school. While the average difference between the lowest and highest scoring school is less than 10 points, there is considerable variance within liberal arts colleges. That is, within each of the institutions the variance between the middle students 80% of students is two and three times the size of the average differences between colleges. Thus, while many students at a given college have frequent, high-quality interactions with their faculty members, substantial numbers of students have much less contact than is desirable. Once again, this same pattern holds for the other four benchmarks of effective educational practice as well as for other institutional types.

Figure 6

Student-Faculty Interaction
**First-Year Students at Liberal Arts Colleges**
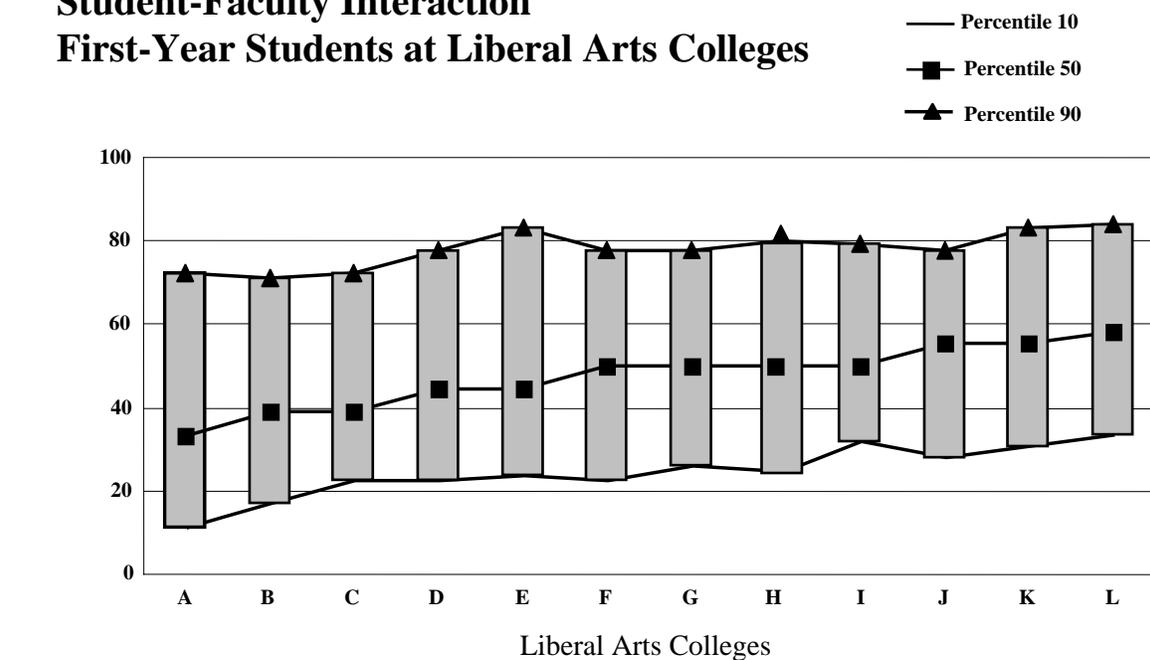
This is same pattern also holds for most college outcomes, as exhibited by gains in character development (Figure 7) where the liberal arts college selected to represent

the middle of its distribution has a relatively high average score, but a sizeable fraction of its students score much lower on the character development measure than the typical student at some other master's granting institutions and even some large doctoral/research extensive universities.

Figure 7

Gains in Character Development NSSE 2002 Seniors
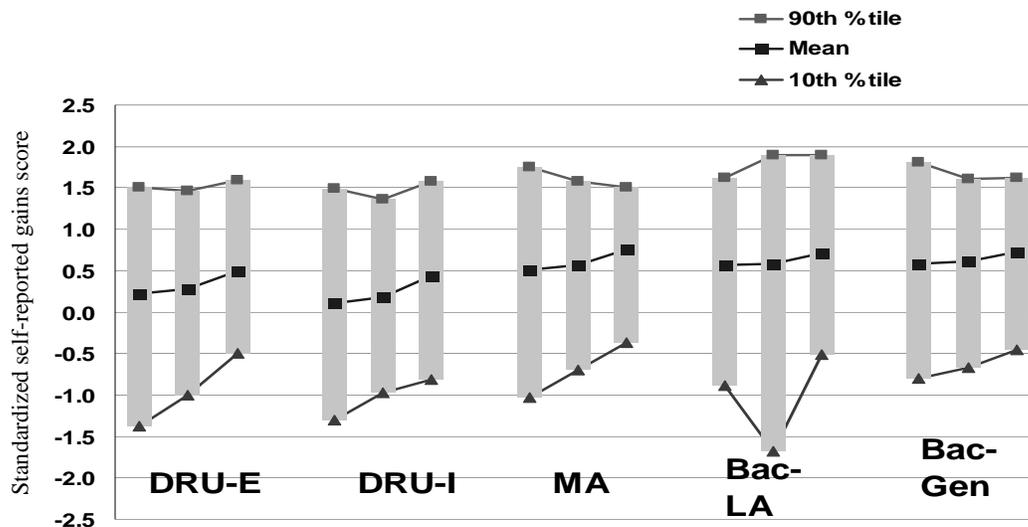
The within-institutional variance with regard to the student experience is really more problematic than it may appear, because as alluded to earlier, the bottom 10% of students is not shown. Thus, a key challenge is finding ways to identify and then more fully engage those students who fall well below average, a disproportionate number of whom are men. Reaching more under-engaged students will improve their learning and also boost overall institutional and national benchmark scores because there is more room to move upward on the scales. Focusing on students who are already engaged at relatively high levels -- those who are in the upper quarter, say, of the engagement distribution -- will produce only marginal differences in overall educational quality. This is not to say such students should be ignored or that they would not reap some benefit. But with limited time and resources it may make sense for many schools to target interventions toward students who are in the lower third of the engagement distribution.

How Much is Optimal?

In terms of student engagement, it's not clear that "more" is always better if student learning is the goal. For example, in terms of student-faculty contact, it's important to focus on the right kinds of interactions. NSSE questions intentionally address substantive interactions, as contrasted with social encounters because the latter have little to no direct effects on learning gains or the amount of effort students devote to academics. In fact, some research studies show that students who have a good deal of

casual contact with faculty outside the classroom report making less progress toward desired outcomes (Kuh & Hu, 2001). Because the key to student learning is both the *nature* and *frequency* of contact, some forms of "occasional" contact with faculty members may be enough. Four of the six behaviors on the student-faculty interaction benchmark are of this kind: (1) discussing grades and assignments, (2) discussing career plans, (3) working with a faculty member outside of class on a committee or project, and (4) doing research with a faculty member. For most students doing the first three of these once or twice a semester is probably good enough. That is, "occasionally" discussing career plans with a faculty member is sufficient for seeing the relevance of their studies to a self-sufficient, satisfying life after college. Working on a research project with a faculty member just once during college could be a life-altering experience. But for the other two activities -- getting prompt feedback and discussing ideas presented in readings or class discussion – it's plausible that the more frequent the behavior the better.

Active and collaborative learning is an effective educational practice because students learn more when they are intensely involved in their education and are asked to think about and apply what they are learning in different settings. Collaborating with others on academic work and problem solving prepares students to deal with the messy, unscripted situations they will encounter daily during and after college. But do all students who report more experience with such activities learn more? We have some insight from the Value-Added project which co-administered NSSE with experimental measures developed by RAND and the Council for the Advancement of Education to assess the types of outcomes associated with liberal arts education (Benjamin & Hersh, 2002). Data come from more than a thousand students at about a dozen institutions who completed the battery of instruments in the spring of 2002.

Though far from conclusive, it appears that higher ability students (those who scored greater than 1300 on the SAT) may benefit less from active and collaborative learning activities than their lower-scoring (below 990) counterparts. The lower scoring group appeared to benefit more in student engagement and learning outcomes from high quality personal relationships, a supportive campus environment, and experiences with diversity. In addition to ability as measured by the SAT, preferred learning styles may also be a factor. That is, "higher ability" students may come to college being more proficient in abstract reasoning compared with "lower ability" students who perform better when course material is presented in concrete terms and they have opportunities to apply concepts to their daily lives. These findings are mildly provocative, suggesting that interventions to boost student engagement may have the greatest payoff for those students who are most at-risk for leaving college prematurely. These and other examples (National Survey of Student Engagement, 2003) indicate that "more" activity may not always be "better" in terms of student learning. Ability, learning style, and major field need to be taken into account when drawing conclusions about student engagement, learning, and collegiate quality. Other factors may also be relevant, such as institutional mission and the learning goals that faculty members have for their courses and major field.

Final Thoughts

In many respects, liberal arts colleges set the bar for American higher education in terms of effective educational practice. On balance, they provide a challenging, yet supportive, educational environment for their students. In light of the caveats mentioned earlier, in order to make more definitive statements about the performance of liberal arts colleges we need to know more, especially if prospective students and others are to use this or related information in selecting a college. This is especially important if Earlham College President Doug Bennett is correct, that most students and parents begin the college search process by focusing on just one category of institution, and then sorting from high to low within this category. This is, of course, what *US News* does with its rankings, segmenting institutions into research universities, national liberal arts colleges, regional colleges and universities, and so forth. Few meaningful comparisons are made across categories on aspects of the student experience and institutional performance that matter to student learning. Moreover, much of what drives the rankings are institutional resources and reputation, neither of which along with selectivity are positively related to effective educational practice (**Kuh & Pascarella, 2004;** National Survey of Student Engagement, 2002; **Pike, 2004**) or desired outcomes (**Pascarella et al., in press**).

The findings reported earlier are based on all liberal arts colleges -- public and private. Additional work could be done to tease out the relationships between student engagement and institutional control, such as public and private and sectarian and non-sectarian. It's likely that these further analyses will produce only modest differentials that almost always favor private over public, though when certain patterns of behaviors and outcomes are considered along with institutional mission, such as character development, the differences that favor schools with particular characteristics (e.g., denominational colleges) may be substantial.

Because of the cost differential between most private liberal arts colleges and other forms of postsecondary education, it would be instructive to determine whether student engagement is related to gross or discounted tuition arrangements and other features of financial aid, including changes in the ratio of gift aid, loans and other aid between the first and last year of college.

Public perceptions of collegiate quality are substantially swayed by institutional reputations and other vestiges of prestige that may have little to do with actual performance of students or institutions (Bogue & Hall, 2003; Ewell, 2002). Yet we know relatively little about student engagement and educational effectiveness at the elite, highly selective liberal arts colleges and universities -- what Zemsky (in press) calls "medallion institutions. In all likelihood, such results would show even greater general net effects favoring liberal arts colleges—more frequent participation in effective educational practices and so forth. However, medallion institutions are supposed to be good at everything. But no school is perfect. Indeed, none of the 700+ colleges and universities participating in NSSE performs at the top on each of the five benchmarks of effective educational practice. This is another instance where market forces trump transparency and improvement efforts. Until higher education learns how to appropriately use and responsibly report information that reflects the core of the

collegiate enterprise -- student learning and the practices that foster learning –affluence and reputation will unfortunately continue to be disproportionately emphasized as markers of collegiate quality over student development and educational excellence.

Notes

1 After reviewing evidence from institutions participating in the Pew-funded Course Redesign Program conducted by the Center for Academic Transformation, Carol Twigg (2002) concluded that with an effective use of technology, "student success can be achieved in class without increased student-faculty contact." This requires being more intentional about the nature of the contact, such as being available on an as-needed, "when students get stuck" basis, which is built into the redesigns of mathematics courses at Virginia Tech, the University of Alabama, and the University of Idaho.

2 The Pascarella and Wolniak (2003) study includes about 5,000 graduates of 26 institutions in the Appalachian region. Ten of these institutions are private baccalaureate liberal arts colleges. The graduates were surveyed approximately 5, 15, and 25 years after graduation. The study is particularly rich in that the researchers were able to link pre-college data from an ACT assessment done at the time of college matriculation to a variety of college outcomes. This allows for controlling for salient factors, such as high school grades, parents' income and educational attainment, and institutional selectivity. On most measures, baccalaureate liberal arts college graduates performed at higher levels. Pascarella and his colleagues found similar effects for students in their National Study of Student Learning, a group they followed longitudinally for three years (1992-1995). Although only five liberal arts colleges were included in the set of 16 institutions, the variety of measures used and the ability to control for pre-college characteristics makes the study one of the better and more persuasive efforts. Controlling for such factors is important because students at liberal arts colleges tend to have higher parental education and income, and they are also more predisposed to learning for self-understanding and enter college with better-developed critical thinking skills. In addition, they are also more likely to have been involved in a variety of ways in high school.

Pascarella and his colleagues concluded that compared to other institutions, liberal arts colleges were more likely to maximize "good practices in undergraduate education" (e.g., good teaching, interaction with faculty, influential contact with peers, high academic expectations, student academic engagement and so forth). The biggest differences between liberal arts colleges and other institutions were found in the first year of college and then shrink somewhat thereafter. Even so, these effects persist after controlling for student ability, motivation, and involvement in high school as well as some during college factors such as living on campus, being enrolled full-time, and institutional selectivity. We have some limited evidence from the CSEQ program that corroborates these findings; that is, the expectations and predilections of students matriculating to liberal arts colleges are higher in many areas, such as the amount of reading, writing, and exposure to cultural events they hope to take advantage of **(Kuh, 2005)**.

3 To learn more about especially engaging institutions, and to share this information more broadly, we created the NSSE Institute was created in 2002 to help institutions use student engagement and related information in decision making and institutional improvement. The Institute conducts funded initiatives and collaborative ventures with a variety of partners including individual colleges and universities, institutional consortia, higher education organizations, and other entities. Two major Institute initiatives are underway, the Documenting Effective Educational Practice (DEEP) and Building Engagement and Attainment for Minority Students (BEAMS) projects. The centerpiece of Project DEEP is case studies of 20 strong-performing colleges and universities, including large, small, urban, and special mission institutions, each of which is distinguished by higher-than-predicted graduation rates and higher-than-predicted scores on the five NSSE national benchmarks of effective educational practice (**Kuh, Kinzie, Schuh, Whitt & Associates, 2005**). BEAMS is a five-year project designed to increase the number of minority-serving institutions using the NSSE survey for institutional improvement purposes. With support from Lumina Foundation for Education, AAHE and NSSE are collaborating with Historically Black Colleges and Universities, Hispanic-Serving Institutions and Tribal Colleges that are members of the Alliance for Equity in Higher Education (AEHE) to improve retention, achievement, and institutional effectiveness. NSSE is also working with other national initiatives that have complementary purposes, such as the Foundations of Excellence project of The Policy Center on the First Year of College. The two dozen member schools of the Council of Independent Colleges and the American Association of State Colleges and Universities (AASCU) participating in this project are focused on improving the first-year experience of their students and NSSE will be used to evaluate their progress. NSSE also is collaborating with AASCU on its American Democracy project sponsored in part by *The New York Times*.

4 Character development is represented by nine items from the self-reported gains section on the NSSE survey that reflect four related dimensions of character development. The question posed to students is: "To what extent has your experience at this institution contributed to your knowledge, skills and personal development in the following areas?"

Knowledge of Self (3 items):
- understanding self
- understanding people of other racial and ethnic backgrounds
- working effectively with others

Ethical Development and Problem Solving (2 items):
- developing a personal code of ethics
- solving complex real-world problems

Civic responsibility (2 items):
- voting in local, state, and national elections
- contributing to the welfare of one's community

General knowledge (2 items).
- acquiring a broad, general education
- learning effectively on one's own

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Tables

Table 1.
Effect sizes for Diversity Experiences by Carnegie Classification

	DR-Ext		DR-Int		Master's		B-Gen	
Dependent variable	*FY*	*SR*	*FY*	*SR*	*FY*	*SR*	*FY*	*SR*
Student Engagement								
Academic challenge	-.41 **	-.38 **	-.41 **	-.37 **	-.34 **	-.30 **	-.30 **	-.29 **
Higher order	-.26 **	-.23 **	-.24 **	-.21 **	-.20 **	-.16 **	-.23 **	-.21 **
Active and Collaborative	-.44 **	-.28 **	-.32 **	-.22 **	-.19 **	-.04	-.06	.00
Diversity-related activities	-.21 **	-.19 **	-.24 **	-.25 **	-.27 **	-.19 **	-.30 **	-.28 **
Supportive Campus Environment								
Supportive campus environment	-.37 **	-.45 **	-.37 **	-.41 **	-.20 **	-.18 **	-.07	.00
Interpersonal support	-.37 **	-.37 **	-.35 **	-.34 **	-.20 **	-.16 **	-.08 *	-.01
Support for learning	-.28 **	-.39 **	-.30 **	-.36 **	-.15 **	-.14 **	-.03	.02
Satisfaction	-.09 *	-.22 **	-.22 **	-.31 **	-.14 **	-.16 **	-.11 *	-.10 *
Gains in Learning and Intellectual Development								
Gains: personal/social	-.09 *	-.22 **	-.15 **	-.26 **	-.06 *	-.12 **	-.03	-.08
Gains: general education	-.35 **	-.43 **	-.34 **	-.46 **	-.19 **	-.29 **	-.17 **	-.25 **
Gains in Social Awareness								
Gains: Contributing to community	-.19 **	-.25 **	-.25 **	-.24 **	-.13 **	-.13 **	-.06	-.03
Gains: Understanding self	-.08 *	-.23 **	-.17 **	-.29 **	-.08 **	-.17 **	-.03	-.07 *
Gains: Understanding others	-.15 **	-.14 **	-.08 *	-.14 **	.00	-.04	.05	-.02

[a] + p<.10, *p<.05, **p<.01
[b] Liberal Arts Colleges omitted category
[c] Level 1 controls include age, race, gender, transfer, grades, Greek, major, full-time, and first generation college.

From: Umbach, P.L., & Kuh, G.D. (2003, May). Student experiences with diversity at liberal arts colleges: Another claim for distinctiveness. Paper presented at the annual meeting of the Association for Institutional Research, Tampa.

Table 2.
Results from HLM: Effect sizes for Student Engagement at Women's Colleges

Dependent Variable	FY	SR
Engagement		
Academic challenge	.10 +	.12 *
Higher order thinking	.08	.13 *
Active and collaborative learning	.14 **	.16 **
Student-faculty interaction	.18 **	.09 +
Integration	.16 **	.17 **
Diversity-related activities	.31 **	.27 **
Supportive Campus Climate		
Supportive campus environment	.06	-.03
Interpersonal support	-.02	-.08 *
Support for success	.11 *	.01
Satisfaction	.01	.02
Self-reported Gains		
Understanding self and others	.16 **	.11 *
General education	.11 *	.08 +
Analyzing quantitative problems	.09 *	.12 **
Contributing to welfare of community	.13 **	.08 +

+ p<.10, *p<.05, **p<.01

From: Umbach, P.D., Kinzie, J.L., Thomas, A.D. Palmer, M.M., & Kuh, G.D. (2003, November). Women students at coeducational and women's colleges: How so their experiences compare? Paper presented at the annual meeting of the Association for the Study of

Appendix

Appendix A.
Benchmarks of Effective Educational Practice.

Level of Academic Challenge

Challenging intellectual and creative work is central to student learning and collegiate quality. Colleges and universities promote high levels of student achievement by emphasizing the importance of academic effort and setting high expectations for student performance.
- Preparing for class (studying, reading, writing, rehearsing, and other activities related to your academic program)
- Number of assigned textbooks, books, or book-length packs of course readings
- Number of written papers or reports of 20 pages or more
- Number of written papers or reports between 5 an 19 pages
- Number of written papers or reports fewer than 5 pages
- Coursework emphasizes: Analyzing the basic elements of an idea, experience or theory
- Coursework emphasizes: Synthesizing and organizing ideas, information, or experiences
- Coursework emphasizes: Making judgments about the value of information, arguments, or methods
- Coursework emphasizes: Applying theories or concepts to practical problems or in new situations
- Worked harder than you thought you could to meet an instructor's standards or expectations
- Campus environment emphasizes spending significant amounts of time studying and on academic work

Student Interactions with Faculty Members

Through interacting with faculty members inside and outside the classroom students see first-hand how experts think about and solve practical problems. As a result their teachers become role models, mentors, and guides for continuous, life-long learning.
- Discussed grades or assignments with an instructor
- Talked about career plans with a faculty member or advisor
- Discussed ideas from your reading or classes with faculty members outside of class
- Worked with faculty members on activities other than coursework (committees, orientation, student-life activities, etc.)
- Received prompt feedback from faculty on your academic performance
- Worked with a faculty member on a research project

Active and Collaborative Learning

Students learn more when they are intensely involved in their education and are asked to think about and apply what they are learning in different settings. Collaborating with others in solving problems or mastering difficult material prepares students to deal with the messy, unscripted problems they will encounter daily during and after college.

- Asked questions in class or contributed to class discussions
- Made a class presentation
- Worked with other students on projects during class
- Worked with classmates outside of class to prepare class assignments
- Tutored or taught other students
- Participated in a community-based project as part of a regular course
- Discussed ideas from your reading or classes with others outside of class (students, family members, co-workers, etc.)

Enriching Educational Experiences

Complementary learning opportunities inside and outside the classroom augment the academic program. Experiencing diversity teaches students valuable things about themselves and other cultures. Used appropriately, technology facilitates learning and promotes collaboration between peers and instructors. Internships, community service, and senior capstone courses provide students with opportunities to synthesize, integrate, and apply their knowledge. Such experiences make learning more meaningful and, ultimately, more useful because what students know becomes a part of who they are.

- Talking with students with different religious beliefs, political opinions, or values
- Talking with students of a different race or ethnicity
- An institutional climate that encourages contact among students from different economic, social, and racial or ethnic backgrounds
- Using electronic technology to discuss or complete assignments
- Participating in:
- internships or field experiences
- community service or volunteer work
- foreign language coursework
- study abroad
- independent study or self-designed major
- culminating senior experience
- co-curricular activities
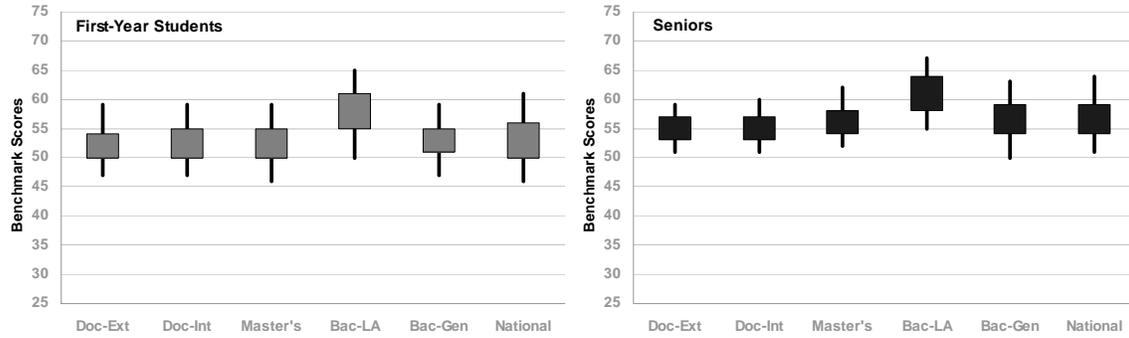
Supportive Campus Environment

Students perform better and are more satisfied at colleges that are committed to their success and cultivate positive working and social relations among different groups on campus.

- Campus environment provides support you need to help you succeed academically
- Campus environment helps you cope with your non-academic responsibilities (work, family, etc.)

- Campus environment provides the support you need to thrive socially
- Quality of relationships with other students
- Quality of relationships with faculty members
- Quality or relationships with administrative personnel and offices

Appendix B.
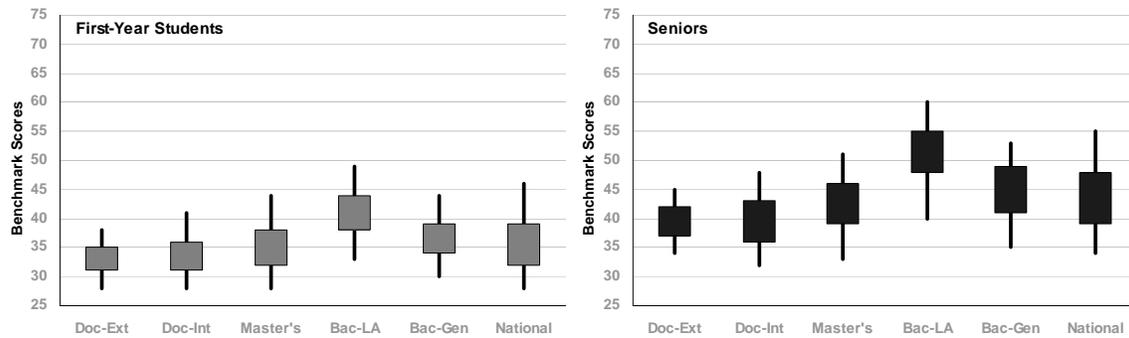Benchmark Scores by Carnegie Classification by Class Standing
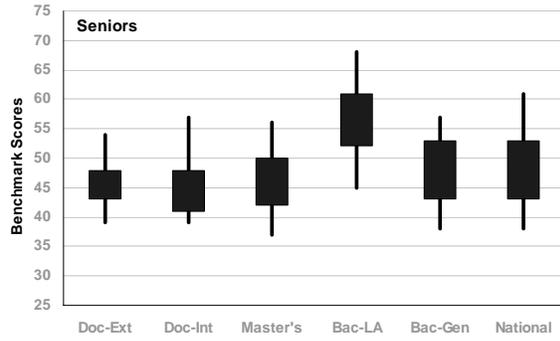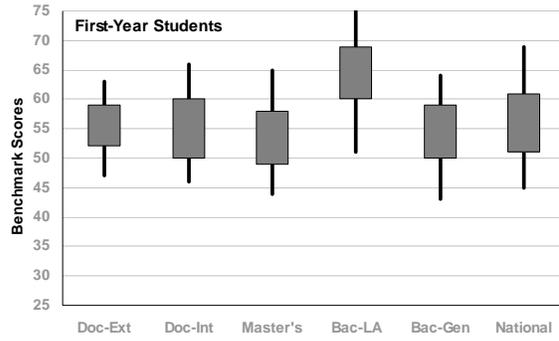
Academic Challenge

Active and Collaborative Learning
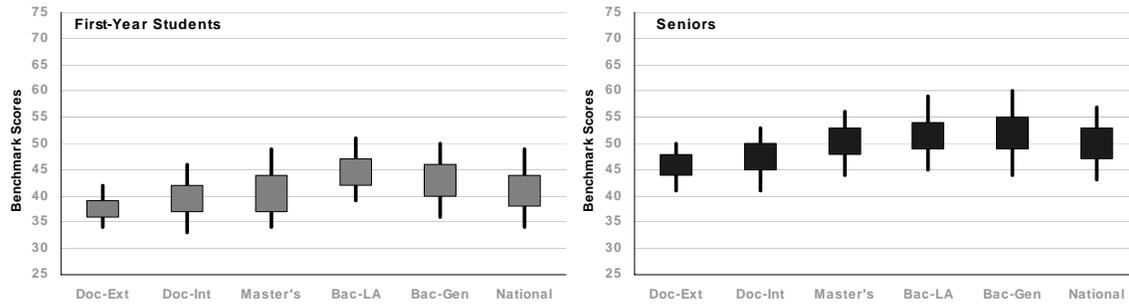
Student Interactions with Faculty Members

Enriching Educational Experiences

Supportive Campus Environment