

A Study of Resource Expenditures and Allocation at DEEP Colleges  
and Universities: Is Spending Related to Student Engagement?

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December, 2004

Available at: <http://www.iub.edu/~nsse/html/research.htm>

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## Resource Expenditures and Allocation at DEEP Colleges and Universities: Is Spending Related to Student Learning?

Institutions were selected for the Documenting Effective Educational Practices (DEEP) study because they have higher than expected graduation rates and scores on the National Survey of Student Engagement (NSSE). These institutions have been characterized in a number of ways, but, most important, it was presumed that faculty, students, administrators, and others engaged in a variety of institutional activities and practices that advanced learning.

One of the issues that ought to be considered in looking at organization behavior is resource allocation. In other work (Gansemer-Topf & Schuh, 2004), resource allocation was linked to retention and graduation rates at private, baccalaureate-granting colleges. How institutions allocated their resources had a direct influence on these important measures—retention of students from the first to the second year and their six-year graduation rate—according to Gansemer-Topf and Schuh (2004). This study was conducted to determine if resource allocation at DEEP institutions was different than resource allocation at their peer institutions.

### Theoretical Framework

Examining organizational behavior provided the theoretical framework for this study. Berger (1997) recognized that "few studies examine how facets of organizational behavior affect undergraduate students" (p. 4), and his

dissertation supported the premise that organizational behavior is a relevant context in which to view student outcomes.

*Influence of Organizational Behavior on Student Outcomes*

Several researchers have highlighted the need to investigate the relationship between organizational behavior and student outcomes. Braxton and Brier (1989) suggested this approach as a way to make improvements through institutional change: "Organizational models are especially appealing to institutional planners concerned with the restructuring of organizations to achieve greater institutional effectiveness for they focus on organizational attributes that are directly alterable by administrative action" (p. 49).

In *Involving Colleges*, Kuh, Schuh, Whitt and Associates (1991) examined how organizational behavior can create effective out-of-classroom learning environments for students. They analyzed the college environments of 14 institutions known for developing strategies for students to become involved within their institution and suggested how these strategies could be implemented at other colleges and universities. From their work they were able to identify factors and conditions that made for high-quality out-of-class experiences for students.

In an earlier study, Bean (1983) surveyed 1,711 first-year students and found a relationship between students' perceptions of involvement and satisfaction. He found that students were more satisfied with their college experience if they felt they could get involved in the academic and social life of

the institution. Bean also found that other institutional qualities, such as fairness and effective communication between the organization and the student, impacted student satisfaction. Braxton and Brier (1989) randomly selected students from a Midwestern, urban commuter university and found similar results.

Berger's (1997) research on the relationship between organizational behavior and community service and humanistic values verified that organizational behavior is a critical framework in which to study student outcomes. Colleges are regarded as organizations that can exhibit patterns of behavior (specifically by how they allocate resources) that can have "important consequences for the retention of undergraduate students" (Berger, 2001-2002, p. 19).

#### *Influence of Institutional Environment on Student Outcomes*

An institution's environmental variables have has been found to affect student outcomes. Chapman and Pascarella (1983) explored the relationship between institutional type and size and academic and social integration at 11 institutions. They found that students enrolled in residential institutions were more likely to be involved academically and socially than were their peers who attended commuter institutions. Students in larger institutions were more involved socially in their institution, but had less contact with faculty than did students in smaller institutions. Although it is difficult for institutions to change

their size or shift dramatically from commuter to residential, this study suggests that institutional environment and behavior do impact student outcomes.

Godwin and Markham (1996) conducted a qualitative study of first-year students' experiences with campus bureaucracy, and found that, in general, first-year students adapt to the rules and regulations established by colleges and universities. Through non-participant observation and semi-structured interviews, they concluded that although first-year students were frustrated with campus bureaucracy, they defined bureaucracy as "the natural order of things and as relatively efficient" (Godwin & Markham, p. 687). Students may not always agree with the policy and rules, but they quickly conform to them.

Astin and Scherrei (1980) conducted a five-year study of management and administrative styles at 49 private colleges and universities. They acknowledged two principles of administrative behavior: (a) administrative behavior most directly impacts attitudes of faculty and staff, and (b) administrative behavior affects student outcomes only indirectly. Institutional leaders' job security more commonly is based on faculty and staff attitudes rather than on student performance (Astin & Scherrei). A leader's success may be measured more by the morale of the faculty than by student graduation rates. As a result, most administrators are more likely to put efforts into activities that positively impact attitudes of faculty and staff and focus less on efforts at improving student outcomes (Astin & Scherrei).

A primary purpose of Astin and Scherrei's (1980) study was to determine if relationships existed between administrative styles and student outcomes. They examined whether three administrative styles – bureaucratic, egalitarian, and political – influenced student satisfaction. These styles are similar to Birnbaum's (1988) definitions of bureaucratic, collegial, and political organizational cultures. The researchers found that the bureaucratic style of leadership was correlated with student dissatisfaction with administrative services and procedures. If, as Tinto (1993) postulated, student dissatisfaction is negatively correlated with student persistence, students are less likely to persist in institutions exhibiting bureaucratic styles of leadership.

Financial resources also may play a role in an institution's ability to engage students. In his study of 268 institutions, Bowen (1980) concluded that more affluent institutions spent more money in every area than did their less affluent counterparts. Gansemer-Topf and Schuh (2004) found that there was a relationship between institutional resource allocations and retention and graduation rates. So, expenditures and financial strategies potentially are important elements of student engagement.

The results of these studies suggest that organizational behavior does impact student outcomes. Since resource allocation strategies are an aspect of organizational behavior, it is likely that these strategies may affect institutional practices that enhance learning

*Purpose of this Study*

The purpose of this study was to determine if there were differences in resource allocation strategies between DEEP institutions and their peer institutions as defined by their Carnegie classification and their institutional control (public or private).

The guiding questions for this study were as follows:

1. Were DEEP institutions different than their peers in 2002 according to the following institutional characteristics: selectivity, percentage of students who live on campus, and urbanicity (the size of community in which the institution is located)?
2. Did DEEP institutions spend more money per student in the expenditure categories of instruction, academic support, student services, institutional support, and institutional grants (scholarships) than their peers in 1992, 1997 and 2002?
3. Did DEEP institutions have a different pattern of resource allocation, as measured by the percentage of budget devoted to expenditure categories of instruction, academic support, student services, institutional support, and institutional grants (scholarships), than their peers in 1992, 1997, and 2002?

## Method

Definitions of the variables for this study are listed in the Appendix.

### *Sampling*

A listing of the DEEP institutions included in this study by institutional type and control type is included in Table 1. Institutional type was defined using the most recent Carnegie classification taxonomy (The Carnegie Foundation for the Advancement of Teaching, 2004), and form of control (public or private). The resulting taxonomy resulted in public baccalaureate institutions, private baccalaureate institutions, public master's institutions, and doctoral institutions (doctoral-extensive and doctoral-intensive institutions were combined). One DEEP institutional participant, Gonzaga University, was not included in the study because it was not viable to compare it, a private master's I institution, alone against a large number of similar universities ( $n = 242$ ). Using the IPEDS data base (<http://nces.ed.gov/ipeds/>), institutions that matched the characteristics of the DEEP institutions were identified for comparison purposes and subsequent data analysis. The result of this process is summarized in Table 2.

Institutional control (public, for profit, not for profit) was an important variable in identifying institutions for comparison purposes since different accounting procedures are used in public and private institutions, and combining them would have resulted in flawed data.

#### *Data Collection*

This study utilized data from the Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics Survey, Finance Section, and Fall Enrollment Survey. Both instruments publish data on an annual basis, but

each instrument differs in how it collects and reports data. For instance, the 2001 IPEDS Enrollment Survey reports the Fall enrollment for Fall, 2001, but the 2002 IPEDS Finance Survey reports expenditures for Fall, 2001 – Spring, 2002. To align enrollment with institutional expenditures, data were collected from different years as is depicted in Chart 1. Data were downloaded from IPEDS and structured in SPSS data files for statistical analysis. The resulting files were organized using the classification system identified above.

### *Data Analysis*

Analysis of the data comparing DEEP and Non-DEEP institutions was undertaken using one-way analysis of variance (ANOVA). Levene's test (Levene, 1960) for homogeneity of error variance was employed with each ANOVA result to determine whether the assumption of homoscedasticity (constant variance) is satisfied. The use of Levene's test is particularly relevant in this context because the small number of DEEP institutions increases the probability of unequal variances between the two groups. Each significant  $F$ -statistic was cross-validated by checking the significance level of the Levene test. If the initial  $F$ -test for equal DEEP and Non-DEEP group means was significant ( $p < .05$ ), and if the Levene's test for equal group variances also was significant ( $p < .05$ ), the results of robust (Brown-Forsythe, 1974; Welch; 1951) one-way ANOVA were consulted to verify the initial  $F$ -test finding of significance. Results reported here as indicating statistically significant differences of means have been verified by these robust methods when appropriate.

## Results

The results of this analysis are reported by the taxonomy of institutional type and the research questions that guided this study. The first question looked at institutional characteristics. DEEP and Non-DEEP colleges did not differ significantly in selectivity, the percentage of students who lived on campus, or the size of the community in which they were located.

### *Doctoral Universities*

No significant differences were found for questions two and three of this study for public, doctoral universities. DEEP doctoral universities and their peers did not spend significantly different amounts of money per student in 1992, 1997, or 2002 on instruction, academic support, student services, institutional support, or institutional grants (scholarships) to students. While not at a statistically significant level, DEEP institutions spent less per student in each of the five categories, except institutional grants, than their counterpart group in 2002. Expenditure patterns did not differ significantly between DEEP and Non-DEEP doctoral universities. Table 3 provides a summary of these data for the 2002 fiscal year as an illustration of expenditure patterns of these institutions.

### *Master's Universities*

No significant differences were found for questions two and three of this study for public, master's universities. DEEP master's universities and their peers did not spend significantly different amounts of money in 1992, 1997, or 2002 on instruction, academic support, student services, institutional support, or

institutional grants (scholarships) to students. In fact, in 2002, as was the case for DEEP doctoral institutions, DEEP master's institutions spent less money per student than their counterparts for all categories except institutional grants.

Table 4 provides a summary of these data for the 2002 fiscal year as an example.

#### *Public, Baccalaureate Colleges*

The second question examined the amount of money spent per student in selected expenditure categories. Table 5 summarizes the results of this analysis for public, baccalaureate colleges. DEEP public, baccalaureate colleges consistently spent more money per student on instruction than did their counterpart public colleges ( $n = 68$ ). The  $F$ -ratio calculated for 1992, 1997, and 2002 was significant for each year at the .05 level; these results were validated by a nonsignificant Levene's test of homogeneity. In addition, in 2002, DEEP public colleges spent more per student on academic support (libraries, computer labs, museums, etc.) than did their peers. DEEP public baccalaureate colleges had significantly greater mean total expenditures per student than did their Non-DEEP counterparts.

The third question examined spending patterns. It is important to point out that while the amount expended by DEEP public, baccalaureate colleges per student was greater than for Non-DEEP public, baccalaureate colleges, the percentage of budget spent in each of the categories did not differ statistically when the expenditures patterns of DEEP institutions were compared with those of their peers.

*Private, Baccalaureate Colleges*

The second research question examined the amount of money spent per student in five categories: instruction, academic support, student services, institutional support, and institutional grants (scholarships). In 2002, the amount of money spent by DEEP private, baccalaureate colleges per student was significantly more than that spent by their peers for each category and for total expenditures. In 1997, DEEP private, baccalaureate colleges spent significantly more money per student than did their peers for academic support, student services, and institutional support. In 1992, DEEP private, baccalaureate colleges spent significantly more money per student for student services and institutional grants. These results are listed in Table 7.

Higher expenditures for instruction and academic support have been linked to higher retention and graduation rates. That is, such expenditures improve graduation and retention rates (Gansemer-Topf & Schuh, 2004). Ironically, expenditures for student services and institutional support, according to Gansemer-Topf and Schuh (2004), have an inverse relationship with graduation and retention rates, i.e., spending more in these categories inhibited graduation and retention rates.

The third research question was concerned with spending patterns of DEEP and Non-DEEP institutions. No significant differences were calculated for the percentage of budget devoted to the various spending categories examined

for private, baccalaureate colleges. Data from the 2002 fiscal year are included in Table 8 to provide an example of these spending patterns.

*Selective, Private, Baccalaureate Colleges.*

Selectivity can be related to an institution's resource base (see, for example, Winston, 2000). In completing this analysis, the spending of DEEP private, baccalaureate colleges was compared to spending by similar Non-DEEP private, baccalaureate colleges of comparable selectivity. In effect, this process resulted in eliminating over 160 less selective private, baccalaureate colleges that were included in the previous analysis. *Barron's Profiles of American Colleges of 2001* (Barron's, 2000) provided institutional selectivity ratings. The results of this analysis found that DEEP private, baccalaureate colleges spent significantly more money per student than did their selective Non-DEEP counterparts in three categories of expenditures in 2002: student services, institutional support, and grants. The analysis of expenditures also yielded a significant difference for student services spending per student for 1997. No other significant differences were found for expenditures per student, and no significant differences were found for the percentage of expenditures for any of the categories in any of the three years covered in this analysis. These results are displayed in Tables 9 and 10.

#### Discussion and Implications for Practice

The purpose of this study was to investigate whether there were significant differences in the amount of money and percentage of money spent in

selected IPEDS categories of expenditures in survey years 1992, 1997 and 2002 between DEEP and Non-DEEP institutions. DEEP institutions were those that were identified as colleges and universities that are engaged in a variety of practices that advance learning.

This study examined institutional characteristics of selectivity, percentage of students who live on campus, and urbanicity. Since these factors have been found to be associated with higher rates of student engagement (Anderson, 1988; Hamrick, Schuh, & Shelley, 2004), it was necessary to investigate whether there were significant differences in these characteristics between DEEP and Non-DEEP institutions. The results of this study found no significant differences in these characteristics between DEEP and Non-DEEP institutions. Thus, higher levels of student involvement at DEEP institutions cannot be attributed to the variables of selectivity, percentage of students who live on campus, and urbanicity.

#### *Amount of Money per Student*

Four categories of institutions were examined: public doctoral, public master's, public baccalaureate, and private baccalaureate. No significant differences in expenditures per student were found between DEEP and Non-DEEP public doctoral and public master's institutions. This suggests that for these types of institutions, DEEP institutions found ways to engage students actively in learning at higher levels than did their peers without spending more

money per student in the IPEDS categories of instruction, academic support, student services, institutional support, or institutional grants.

Doctoral and master's institutions educate both graduate and undergraduate students; baccalaureate institutions focus primarily on the education of undergraduate students (Carnegie, 2002). For public and private baccalaureate institutions, significant differences were found between DEEP and Non-DEEP colleges in the amount of money spent per student in several categories. Expenditures for instruction were higher at DEEP than at Non-DEEP institutions in 1992, 1997, and 2002; and in 2002, DEEP public baccalaureate institutions spent more on academic support than did their peers. For private baccalaureate institutions, DEEP institutions spent more money than did Non-DEEP institutions in all categories in 2002, more money per student for academic support, student services, and institutional support in 1997, and more money per student for student services and institutional grants in 1992. In 2002, total expenditures were higher for DEEP private and public baccalaureate institutions and in 1992 DEEP private baccalaureate institutions had larger total expenditures per student than their non-DEEP peers.

However, when the least selective private baccalaureate institutions were omitted from the analysis, there were no significant differences in total expenditures per student between DEEP and Non-DEEP institutions. Since institutional expenditures are related to selectivity (McPherson & Winston, 1996) this is not surprising. As the least selective institutions were eliminated from the

analysis, mean spending per student increased and the difference between DEEP and Non-Deep institutions was eliminated. Controlling for selectivity, DEEP private baccalaureate institutions spent more money on student services, institutional support, and institutional grants in 2002 than did their peers, and in 1997 DEEP institutions spent more on student services than did Non-DEEP institutions.

#### *Percentage of Institutional Expenditures*

When the percentage of expenditures per student was analyzed, no significant differences were found between DEEP and Non-DEEP institutions at any type of institution (Tables 3, 4, 6, 8). In essence, DEEP institutions do not engage in significantly different resource allocation patterns than their Non-DEEP peers.

The theoretical framework for this study was based on Berger's (1997) theory that organizational behavior such as resource allocation can influence student involvement. The results of this study suggest that resource allocation patterns appear to have little to do with the ability of DEEP institutions to engage their students actively in learning. DEEP institutions are achieving better than expected results (e.g., NSSE scores and graduation rates) using similar expenditure patterns as their peers. This study did not support Berger's theory of organizational behavior as it relates to resource allocation, but it does suggest that organizational behaviors other than resource allocation do influence student involvement in educationally purposeful activities.

For example, DEEP institutions may be using their resources in different ways than their Non-DEEP peers, ways that are not available in the IPEDS data base. Perhaps DEEP institutions are spending more money in areas such as first-year student seminars and learning communities. These activities have been found to involve students in their academic and social environments and result in improved retention rates (Basi, 2004; Pascarella & Terenzini, 1991). Student affairs practice in liberal arts colleges, for example, is highly collaborative (Hirt, Amelink, & Schneiter 2004). As a result, activities (e.g., academic advising or career counseling) that traditionally might be the responsibility of professional student affairs staff at larger, more complex institutions might be shared by faculty members and student affairs staff. Accordingly, assuming that these and similar functions might be assigned to student affairs staff or faculty members with concomitant budget allocations could be incorrect in that they might be the responsibility of both.

Institutional support expenditures include executive administration, legal and fiscal operations, and other administrative services. DEEP institutions, for example, are vigorously engaged in institutional assessment and self-improvement activities (Kinzie, Kuh, Schuh & Whitt, 2004). This administrative activity can help institutions understand their behavior and culture, which may result in changing or continuing organizational behaviors that impact student engagement positively.

*Implications for Practice*

This study found that for public master's and doctoral institutions, there were no differences between DEEP and Non-DEEP institutions in the amount of money per student or percentage of money spent on various categories of expenditures. These findings suggest that these DEEP institutions are embracing organizational behaviors and cultures that surpass investments of financial resource allocation. It questions the assumption that simply putting more money in functions will pay off in terms of student engagement and learning. This study reiterates that DEEP institutions are strategic and intentional – in their policies, personnel and financial resources, but they are not wealthier than their peers.

There were some differences between DEEP and Non-DEEP baccalaureate institutions in the amount of money spent on specific categories of expenditures. DEEP public baccalaureate institutions have higher total expenditures than their Non-DEEP peers. The same was true for private baccalaureate institutions, but when the least selective private institutions were omitted from the analysis, there were no differences in total expenditures. Consequently, private DEEP colleges mirror the DEEP master's and doctoral institutions in that they did not spend more money in a statistically significant sense than their peers in the crucial expenditure categories of instruction and academic support. The public DEEP baccalaureate institutions, then, become something of an anomaly in that they did spend more than their peers. Further analysis is warranted to determine if these additional expenditures affected graduation rates.

The results of this study offer hope for all institutions. In the current environment, it may not be practical to generate additional funds, but institutions with tight budgets may improve student learning by investing in specific behaviors that have been shown to stimulate student engagement. One strategy for enhancing the efficiency of administration is to focus on ways that administrative areas can provide direct support to the functions of teaching, research, and service. "Powerful Partnerships," a report sponsored by the American Association for Higher Education (AAHE), the American College Personnel Association (ACPA), and the National Association of Student Personnel Administrators (NASPA) (1998), encouraged this approach. The report called for student affairs professionals to partner with academic departments to enhance student learning both in and out of the classroom.

Institutional leaders can develop and encourage these "powerful partnerships" on their campuses. Through the implementation of programs such as residential learning communities, first-year orientation programs, or service learning experiences, institutional support and student services areas can contribute directly to the instruction and academic support functions of the university. These programs, which positively enhance student retention, require resources from executive leadership, student services, and academic units (Astin & Sax, 1998; Eyler & Giles, 1999; Lenning & Ebbers, 1999; Pascarella, Terenzini, & Blimling, 1994).

#### Limitations

A potential limitation in examining doctoral and master's institutions is that expenditures devoted to various IPEDS categories (instruction, academic support, etc.) are used to provide both graduate and undergraduate education. The IPEDS database that was used for this study does not distinguish between expenditures dedicated to undergraduates and those dedicated to graduate students. As a result, although DEEP and Non-DEEP doctoral and master's institutions were not significantly different in their overall expenditures, there may be differences in the amount allocated directly to undergraduate education. Additional studies that focus specifically on undergraduate expenditures at these types of institutions may produce different results.

As mentioned earlier, the categories of expenditures that were examined cover a variety of functions and activities and make it difficult to analyze specific functions. Additional studies that can focus on these different activities within each expenditure category may provide more nuanced information on the relationship of expenditures to student outcomes at DEEP and Non-DEEP institutions.

This study also did not investigate private master's universities. Since only one DEEP institution was identified as a private, master's university it was inappropriate to perform a statistical analysis.

### Conclusions

The purpose of this study was to determine whether resource allocation amounts and strategies differed when comparing DEEP institutions with their

peers. Several conclusions can be drawn from the results of this inquiry. They include the following:

1. DEEP institutions did not differ significantly with their Non-Deep peer group in selectivity, the percentage of students who lived on campus, or the size of community in which they were located from their peers.
2. DEEP public doctoral universities did not spend more per student than their peers in the IPEDS categories of interest for survey years 1992, 1997 and 2002;
3. DEEP public master's universities did not spend more per student than their peers in the IPEDS categories of interest for survey years 1992, 1997 and 2002;
4. DEEP public baccalaureate colleges spent more money per student on instruction and academic support in survey year 2002;
5. DEEP private baccalaureate colleges spent more money than Non-DEEP institutions in each category and in overall total expenditures in 2002. When controlling for selectivity, DEEP institutions did not spend more per student in total expenditures, instruction, or academic support than Non-DEEP institutions but spent more in student services, institutional support, and institutional grants.
6. No differences in expenditure patterns were calculated for any of the institutional types across the survey years of interest, 1992, 1997 and 2002.

This information suggests that DEEP institutions are doing something strategically different with their resources than are their Non-DEEP peers that impacts student engagement and learning positively. In these times of financial pressures, it may not be possible to generate significant new resources, but higher education leaders do need to take a more critical look at how and where their money is being spent (Rhodes, 2001). This study suggests that more money does not necessarily improve student learning; rather, it may be that DEEP institutions are using their resources more effectively.

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**Chart 1.*****IPEDS Data Sources*****1992 Data**

1991 Fall enrollment data

1992 Fiscal year expenditure data

**1997 Data**

1996 Fall enrollment data

1997 Fiscal year expenditure data

**2002 Data**

2001 Fall enrollment data

2002 Fiscal year expenditure data

**Table 1.**

*Listing of DEEP Institutions by Carnegie Classification and Institutional Control Included in this Study*

Private Baccalaureate Colleges

Alverno College

Macalester College

Sweet Briar College

University of the South

Ursinus College

Wabash College

Wheaton (MA) College

Wofford College

Public Master's I Universities

Fayetteville State University

Longwood University

Public Doctoral Universities

George Mason University

Miami University (Ohio)

The University of Kansas

The University of Michigan (Ann Arbor)

The University of Texas at El Paso

Public Baccalaureate Colleges

University of Maine at Farmington

Winston Salem State University

California State University,

Monterey Bay

Evergreen State College

**Table 2.***Number of Institutions Included in this Study*

Institutional Type	Number	
	DEEP Institutions	Others
Public, baccalaureate colleges	4	68
Private, baccalaureate colleges	8	452
Public, Master's universities	2	243
Public, Doctoral universities	5	142

**Table 3.***Public Doctoral Universities' Financial Profile, 2000 Fiscal Year*

<u>Expenditure Category</u>	DEEP Universities ( <i>n</i> = 5)		Non-DEEP Universities ( <i>n</i> = 142)	
	<u>Mean \$ Spending/student</u>	<u>Mean Percentage of Spending</u>	<u>Mean \$ Spending/student</u>	<u>Mean Percentage of Spending</u>
Instruction	11129	30.37	11739	29.82
Academic Support	2365	5.95	2809	7.40
Student Services	1252	3.57	1327	4.40
Institutional Support	2205	6.66	2650	6.90
Institutional Grants	1715	3.58	1495	4.18

**Table 4.***Public Master's Universities Financial Profile, 2002 Fiscal Year*

<u>Expenditure Category</u>	DEEP Universities ( <i>n</i> = 2)		Non-DEEP Universities ( <i>n</i> = 243)	
	<u>Mean \$ Spending/student</u>	<u>Mean Percentage of Spending</u>	<u>Mean \$ Spending/student</u>	<u>Mean Percentage of Spending</u>
Instruction	4773	29.89	5977	36.72
Academic Support	1392	8.72	1419	8.53
Student Services	643	4.03	1191	7.33
Institutional Support	1491	9.33	1986	11.54
Institutional Grants	1093	6.9	630	4.02

**Table 5.**

*Expenditures per Student for Public Baccalaureate Colleges  
(Significant Differences)*

Item	ANOVA			Levene's Test	
	Mean	F Ratio	Sig.	Statistic	Sig.
Instruction: 2002	\$6116 (D) \$4550(ND)	5.254	.025	.383	.538
Academic	\$1855 (D)	9.388	.003	.505	.306
Support: 2002	\$995 (ND)				
Total	\$19390 (D)	4.207	.044	.560	.457
Expenditures: 2002	\$13585 (ND)				
Instruction: 1997	\$5155 (D) \$3738 (ND)	6.477	.013	.312	.578
Instruction: 1992	\$4223 (D) \$3015 (ND)	6.444	.013	.173	.679

Note: D = DEEP colleges

ND = Non-DEEP colleges

**Table 6.**

*Percentage Expenditures for 2002 by Public Baccalaureate  
Colleges*

<u>Category</u>	<u>DEEP Colleges (n = 4)</u>	<u>Non-DEEP Colleges (n = 68)</u>
Instruction	31.83	38.33
Academic support	9.47	8.15
Student services	7.67	9.18
Institutional support	8.08	14.48
Institutional grants	4.31	4.57

**Table 7.*****Expenditures per Student for Private Baccalaureate Colleges (Significant Differences)***

<u>Item</u>	ANOVA			Levene's Test	
	Mean	F Ratio	Sig.	Statistic	Sig.
Instruction: 2002	\$11043 (D)	3.919	.048	.003	.958
	\$7794(ND)				
Academic	\$3573 (D)	5.367	.021	.792	.374
Support: 2002	\$2070 (ND)				
Student services:	\$5358 (D)	10.781	.001	3.045	.082
2002	\$3275 (ND)				
Institutional	\$7521 (D)	6.502	.011	1.363	.244
Support: 2002	\$4772 (ND)				
Institutional	\$8190 (D)	8.42	.004	.895	.345
Grants: 2002	\$5156 (ND)				
Total	\$36062 (D)	6.407	.012	.331	.565
Expenditures: 2002	\$23728 (ND)				
Academic	\$2280 (D)	4.594	.033	.506	.477
Support: 1997	\$1413 (ND)				
Student services:	\$3434 (D)	7.232	.007	.928	.336
1997	\$2287 (ND)				
Institutional	\$4778 (D)	4.289	.039	.004	.952
Support: 1997	\$3453 (ND)				
Student services:	\$2417 (D)	13.352	.000	3.292	.070
1992	\$1503 (ND)				
Institutional	\$3390 (D)	5.632	.018	.003	.958
Grants: 1992	\$2131 (ND)				
Total	\$21100 (D)	4.813	.029	.269	.604
Expenditures: 1992	\$14968 (ND)				

Note: D = DEEP colleges

ND = Non-DEEP colleges

**Table 8.***Percentage Expenditures for 2002 by Private Colleges*

<u>Category</u>	<u>DEEP Colleges (n = 8)</u>	<u>Non-DEEP Colleges n = 452)</u>
Instruction	30.36	33.02
Academic support	10.00	8.21
Student services	14.72	14.42
Institutional support	21.30	20.60
Institutional grants	22.97	22.17

**Table 9.***Expenditures per Student for Selective, Private Baccalaureate Colleges**(Significant Differences)*

<u>Item</u>	ANOVA			Levene's Test	
	Mean	F Ratio	Sig.	Statistic	Sig.
Student services: 2002	\$5,358 (D) \$3,752 (ND)	5.830	.016	2.427	.120
Institutional Support: 2002	\$7,521 (D) \$5,067 (ND)	5.116	.024	1.376	.242
Institutional Grants: 2002	\$8,190 (D) \$6,129 (ND)	4.518	.034	.408	.524
Student services: 1997:	\$3,434 (D) \$2,557 (ND)	3.944	.048	.692	.406

Note: D = DEEP colleges

ND = Non-DEEP colleges

**Table 10.***Percentage Expenditures for 2002 by Selective, Private Colleges*

<u>Category</u>	<u>DEEP Colleges (n = 8)</u>	<u>Non-DEEP Colleges (n = 287)</u>
Instruction	30.36	34.18
Academic support	10.00	8.34
Student services	14.74	14.65
Institutional support	21.30	19.11
Institutional grants	22.97	24.18

Appendix. Variables employed in this study.

*Academic Support Expenditures.* Expenditures for the support services that are an integral part of the institution's primary mission of instruction, research, or public service. Includes expenditures of libraries, museums, galleries, audio/visual services, academic computing support, ancillary support, academic administration, personnel development, and course and curriculum development (NCES, 2001, p. 12).

*Institutional Grants.* Amount awarded to students from restricted and unrestricted institutional resources for the purpose of student aid, such as scholarships or fellowships funded by gifts or endowment return (NCES, 2001, p. 7).

*Institutional Selectivity Ratings:* Degree of admissions competitiveness. Ratings factor in incoming students' average median entrance examination scores (e.g. SAT/ACT), high school rank, high school grade point average and the percentage of applicants who were accepted (Barrons, 2000).

*Institutional Support.* Expenditures for the day-to-day operational support of the institution, excluding expenditures for physical plant operations. Includes general administrative services, executive direction and planning, legal and fiscal operations, and public relations/development (NCES, 2001, p. 12).

*Instruction Expenditures.* Expenditures of the colleges, schools, departments, and other instructional divisions of the institution, and expenditures for departmental research and public service that are not separately budgeted.

General academic instruction, vocational instruction, special session instruction, community education, preparatory and adult basic education, and remedial and tutorial instruction conducted by the teaching faculty for the institution's students (NCES, 2001, p. 11).

*Student Services.* Funds expended for admissions, registrar activities, and activities whose primary purpose is to contribute to students' emotional and physical well-being and to their intellectual, cultural, and social development outside the context of the formal instructional program (NCES, 2001, p. 12).

*Urbanicity:* This variable reflects the size of the community in which the institution is located. Labor costs are greater in larger cities than in smaller communities (Bureau of Labor Statistics, 2001).