

**Lessons from the NSSE: An Exploration of Hilbert College Benchmark
Scores and Supplemental Scales from the National Survey of Student
Engagement, 2009 - 2011**

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Survey Overview

The National Survey of Student Engagement (NSSE) is an annual survey of first-year and senior college students at four-year institutions measuring students' self-reported participation in educational activities that prior research has associated with high levels of learning and development. The survey is administered by the Indiana University Center for Postsecondary Research in cooperation with the Indiana Center for Survey Research. Student responses to individual items are used to generate five benchmarks of effective educational practice: Level of Academic Challenge (AC), Active and Collaborative Learning (ACL), Student-Faculty Interaction (SFI), Enriching Educational Experiences (EEE), and Supportive Campus Environment (SCE). In addition to these benchmarks, several scales and 'scalelets' (focused measures consisting of four or five items) have been developed and validated for use in supplemental analyses. These scales provide scores in areas associated with deep approaches to learning (Laird, Shoup & Kuh, 2005), overall student satisfaction, and gains in personal and social development, practical competencies, and general education. Pike's 'scalelets' (Pike, 2006) allow even more focused analyses of engagement in terms of course challenge, writing, active learning, collaborative learning, course-related and outside-of-class interactions with faculty, use of technology, emphasis on diversity, varied educational experiences, support for student success, and interpersonal environment.

The NSSE at Hilbert College

Hilbert College has participated annually in the NSSE beginning in the spring of 2009 through the spring of 2012 as part of a Title III grant to aid in bolstering student success. The first administration of the survey was conducted locally with a paper version distributed nonrandomly to classes with large numbers of first-year students or seniors. Since then Hilbert has used the web+ mode which draws a random sample from the population of freshmen and seniors who are then invited to participate by email at their student email addresses beginning relatively early in the spring semester. Follow-up invitations continue throughout the semester including a final mailed paper version to nonresponders.

As shown in the table below, students' response rates were considerably higher in the 2011 administration. In large part this was due to a concentrated effort by faculty to encourage students to participate, often by providing reminders in class for students to check their email accounts for the NSSE invitations.

Academic Year	Class category	Number enrolled in Fall of NSSE Year	Number in NSSE sample	NSSE Completers	NSSE Response Rate	% of all students in enrolled
2008-2009	First-year	353	47	47	100%	13.3%
	Seniors	199	14	14	100%	7.0%
2009-2010	First-year	306	220	31	14.1%	10.1%
	Seniors	200	107	28	26.2%	14.0%
2010-2011	First-year	364	242	84	34.7%	23.1%
	Seniors	200	132	59	44.7%	29.5%
All Years	First-Year Totals	1023	509	163	32.0%	15.9%
	Senior Totals	599	253	101	39.9%	19.8%

The 100% response rate in 2008-2009 was due entirely to the mode of administration being a local, paper version handed out in specific classes. Although this sample must be recognized as nonrandom and therefore questionably representative of the student population that year, the data has been retained for further aggregate analyses.

Characteristics of 2011 NSSE Responders

For the following comparisons of Hilbert College's benchmark scores to other groups of NSSE participating institutions only the results from the 2011 administration will be reported. That administration provided the largest and therefore, presumably, most representative sample of Hilbert students. Comparing NSSE respondents to the overall spring 2011 student population it can be seen that the sample of First-year NSSE respondents was some more likely to include part-time, white, female resident students. The senior NSSE responders were also more likely to include part-time and white students as well as students with transfer credits.

Characteristics	Spring 2011 NSSE Responders		Spring 2011 Student Population	
	First-year	Seniors	First-year	Seniors
Part-time	17%	31%	7%	22%
Female	65%	69%	46%	67%
White (non-Hispanic)	70%	93%	66%	84%
On-campus Resident	43%	11%	38%	12%
Transfer Student	0%	47%	6%	31%
Traditional (less than 24 yrs. old)	97%	53%	91%	59%

Benchmark Percentile Scores Compared to Above-Average and High-Performing Institutions

NSSE provides two reference groups to allow institutions to contextualize their benchmark scores: above-average institutions with benchmark scores in the top 50% of all participating institutions and high-performing institutions with benchmark scores in the top 10%. In the following tables only the comparisons for the 2011 Hilbert College NSSE sample are reported. As mentioned above this was the largest (as well as most recent) sample of the three years.

First-Year Comparisons

Average benchmark scores for Hilbert first-year students were not significantly different from the average benchmark scores of the top 50% of NSSE participating institutions. Significant differences were seen in comparing average Hilbert student responses to those of average students at the high-performing (top 10%) in the areas of level of Academic Challenge, Active and Collaborative Learning, and Enriching Educational Experiences. Hilbert's benchmark scores were significantly lower than the scores from top 10% institutions in each of those areas. On the other hand, there were no significant differences between Hilbert and top 10% institutions for the benchmark means of Student-Faculty Interactions and Supportive Campus Environment.

Effect sizes are reported as an aid to evaluating the practical significance of mean differences. In practice an effect size of .2 is considered small, .5 moderate, and .8 large. Negative effect sizes indicate that Hilbert's mean scores were lower than that of the comparison group. For example, consider the difference in mean scores on Enriching Educational Experiences between the average Hilbert first-year student and the average first-year student at institutions in the top 10% on this benchmark. While the difference is statistically significant ($p < .01$), the effect size is rather small (-.29) and certainly less impressive than the effect size for the difference on the Level of Academic Challenge benchmark (-.49). Effect sizes also permit relative comparisons of the strengths of results even when the underlying scales or measurements may be different.

Hilbert College NSSE Benchmark Scores: 2009-2011

<i>Hilbert compared with</i>							
First-Year	Hilbert	NSSE 2011 Top 50%			NSSE 2011 Top 10%		
	<i>Mean</i>	<i>Mean</i>	<i>Sig</i>	<i>Effect size</i>	<i>Mean</i>	<i>Sig</i>	<i>Effect size</i>
	Level of Academic Challenge	54.6	56.7		-.16	60.6	***
Active & Collaborative Learning	46.4	48.0		-.10	52.1	**	-.32
Student-Faculty Interaction	43.3	39.3		.20	43.7		-.02
Enriching Educational Experiences	29.6	30.5		-.07	33.7	**	-.29
Supportive Campus Environment	69.2	67.4		.10	71.2		-.11

** Hilbert mean benchmark significantly different than comparison group (p<.01)

*** Hilbert mean benchmark significantly different than comparison group (p<.001)

Senior Class Comparisons

Average benchmark scores for Hilbert seniors were not significantly different from the average benchmark scores of the top 10% of institutions for Supportive Campus Environment. Hilbert senior's average benchmark scores were significantly lower than those at both top 10% and top 50% institutions on Enriching Educational Experiences and Active and Collaborative Learning with a very large effect size (-1.07) for the difference with top 10% schools on EEE. Average benchmark scores were also significantly lower for Hilbert seniors compared to top 10% institutions (but not top 50% schools) on Academic Challenge and Student-Faculty Interaction with moderate effect sizes.

<i>Hilbert compared with</i>							
Senior	Hilbert	NSSE 2011 Top 50%			NSSE 2011 Top 10%		
	<i>Mean_a</i>	<i>Mean_a</i>	<i>Sig_b</i>	<i>Effect size_c</i>	<i>Mean_a</i>	<i>Sig_b</i>	<i>Effect size_c</i>
	Level of Academic Challenge	58.3	60.5		-.16	64.1	***
Active & Collaborative Learning	51.0	56.2	*	-.30	60.1	***	-.51
Student-Faculty Interaction	45.8	49.3		-.17	56.0	***	-.45
Enriching Educational Experiences	37.5	46.7	***	-.51	55.3	***	-1.07
Supportive Campus Environment	68.6	64.9		.20	68.7		-.01

** Hilbert mean benchmark significantly different than comparison group (p<.01)

*** Hilbert mean benchmark significantly different than comparison group (p<.001)

Customized Comparison Groups

The above comparisons to top 50% and top-10% institutions includes all highly engaging institutions that used the NSSE in 2011. In that year a total of 546,719 undergraduates took the NSSE from 683 U.S. and 68 Canadian schools representing all categories of institutions from small private liberal arts baccalaureate schools to large public doctoral granting research institutions. While comparisons of Hilbert College's results to the broad range of higher education institutions is informative it can often be more directly useful to make comparisons with groups of institutions more closely similar to Hilbert, within our own backyard, or representing schools we might aspire to be more like. NSSE provides the opportunity to customize up to three comparison groups from the available pool of current year participants. This allows us to compare Hilbert College's results to selected relevant groups. For the 2011 administration Hilbert College constructed three comparison groups. The Most Like Us group was comprised of 53 private, smaller (under 5000 enrollment), bachelors- and masters-degree granting, less competitive, institutions from the Mid-East and Great lakes regions. The second group, Regional Competitors, was made up of 20 institutions within the Western and Central New York areas as well as any NSSE participant from the Allegheny Mountain Athletic Conference and a few select schools from Western Pennsylvania and Eastern Ohio. These were schools within a general 200 mile radius of Hilbert.

The third comparison group, Aspirational Group, included 35 small (under 2500 enrollment) undergraduate (with smaller Master's programs) institutions classified as selective or highly selective with low transfer rates from the Mid-East, Great Lakes and New England regions. The names of schools included in each of these groups can be found in Appendix A.

As with the comparisons to high performing NSSE schools, only the results from Hilbert's 2011 administration are presented here.

Hilbert College NSSE Benchmark Scores: 2009-2011

2011 NSSE		Hilbert	Similar to Hilbert		Regional Competitors		Aspirational Schools	
		Mean	Mean	Effect Size	Mean	Effect Size	Mean	Effect Size
LAC	First-year	54.6	55.7	-0.8	54.1	-.08	58.3*	-.30
	Seniors	58.3	60.0	-.12	57.4	-.12	61.9*	-.27
ACL	First-year	46.4	46.6	-.01	43.4	.18	47.6	-.08
	Seniors	51.0	54.8	-.22	51.3	-.01	54.9	-.24
SFI	First-year	43.3	38.8	.23	34.8**	.46	38.4	.26
	Seniors	45.8	46.7	-.04	43.0	.13	50.5	-.22
EEE	First-year	29.6	28.7	.06	27.7	.15	31.3	-.13
	Seniors	37.5	43.3*	-.31	42.4*	-.27	51.6***	-.78
SCE	First-year	69.2	66.4	.15	63.1*	.33	67.3	.11
	Seniors	68.6	65.1	.18	59.3***	.48	63.7*	.27

** Hilbert mean benchmark significantly different than comparison group ($p < .01$)

*** Hilbert mean benchmark significantly different than comparison group ($p < .001$)

First, looking at the group of institutions most like Hilbert, the only statistically significant difference in average benchmark scores is for Enriching Educational Experiences of which Hilbert seniors report significantly less such experiences. It is also noted that while the mean score difference for seniors on Active and Collaborative Learning does reach the threshold of statistical significance, there is an at least small effect size again with Hilbert seniors lower than seniors at other similar institutions. In terms of NSSE Benchmarks of Effective Educational Practices Hilbert College's students report highly similar experiences to those reported by students at similar institutions and even somewhat higher perceptions of a Supportive Campus Environment. The one exception is for Hilbert seniors' opportunities for Enriching Educational Experiences.

In comparison to regional competitors, Hilbert's first-year students, on average, report significantly higher scores on Student-Faculty Interaction and Supportive Campus Environment. Hilbert seniors also have average SCE scores significantly higher than students at the other regional schools although again they have lower scores on Enriching Educational Experiences. Compared to schools with which we may compete for students, Hilbert College students experience a much more supportive environment with more frequent and satisfying interactions with faculty members.

Both first-years and seniors at the Aspirational Group schools report significantly higher average scores on Level of Academic Challenge than do Hilbert students. Hilbert seniors again have much lower Enriching Educational Experience scores. Notably, Hilbert seniors have significantly higher average Supportive Campus Environment benchmarks scores than seniors at those aspirational group schools

and freshmen’s scores are somewhat (but not significantly) higher. Those schools which may be considered in the tier or two above us are most different from us in term of the demands and expectations students experience academically although we may already be better at providing the support students need to thrive in both academic and non-academic areas.

Since the Enriching Educational Experiences (EEE) and the Level of Academic Challenge (LAC) benchmarks stand out as the areas in which Hilbert student experiences are most likely to unfavorably compare to students elsewhere, it may be useful to individually examine the items that comprise these two benchmark scores. The following tables show first-year and senior mean scores for the individual questions used to calculate these two benchmarks for 2011. Comparison group means that were significantly different from Hilbert’s are denoted with asterisks (*p<.05; **p<.01; ***p<.001).

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.” (National Survey of Student Engagement. (2007). **Experiences That Matter: Enhancing Student Learning and Success.** Bloomington, IN: Indiana University, Center for Postsecondary Research. p. 47).

Enriching Educational Experiences (2011 NSSE)		Hilbert	Similar	Regional	Aspirational
<i>Used an electronic medium (listserv, chat group, Internet, instant messaging, etc.) to discuss or complete an assignment</i>	FY	2.57	2.59	2.62	2.66
	SR	2.71	2.80	2.79	2.76
<i>Had serious conversations with students of a different race or ethnicity</i>	FY	2.66	2.58	2.64	2.78
	SR	2.65	2.59	2.64	2.77
<i>Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values.</i>	FY	2.58	2.64	2.72	2.83*
	SR	2.73	2.70	2.70	2.84
<i>Did or plan to do practicum, internship, field experience, or clinical assignment</i>	FY	.09	.09	.06	.09
	SR	.55	.59	.60	.71*
<i>Did or plan to do community service or volunteer work</i>	FY	.42	.45	.39	.47
	SR	.54	.67	.63	.74**
<i>Did or plan to participate in a learning community or some other formal program where groups of students take two or more classes together</i>	FY	.18	.16	.17	.19
	SR	.24	.33	.29	.31

Hilbert College NSSE Benchmark Scores: 2009-2011

Enriching Educational Experiences (2011 NSSE)		Hilbert	Similar	Regional	Aspirational
<i>Did or plan to do foreign language coursework</i>	FY	.16	.23	.18	.29**
<i>Did or plan to study abroad</i>	SR	.20	.41***	.46***	.55***
<i>Did or plan to do independent study or self-designed major</i>	FY	.09	.04	.03	.03
	SR	.14	.21	.20	.33***
<i>Did or plan to do culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc.)</i>	FY	.07	.02	.02	.02
	SR	.42	.42	.32	.58*
<i>Hours in a typical week spent participating in co-curricular activities</i>	FY	2.63	2.53	2.46	2.83
	SR	1.68	2.26***	2.45***	2.94***
<i>Institution encourages contact among students from different economic, social, and racial or ethnic backgrounds.</i>	FY	2.98	2.79	2.74*	2.91
	SR	2.86	2.70	2.55*	2.67

* Hilbert mean scores significantly different than comparison group ($p < .05$)

** Hilbert mean scores significantly different than comparison group ($p < .01$)

*** Hilbert mean scores significantly different than comparison group ($p < .001$)

Hilbert first-year students are remarkably similar in average responses to these questions to students at institutions in the three comparison groups with three exceptions. First, Hilbert freshmen reported having had less frequent serious conversations with students different from themselves than did freshmen at the Aspirational schools. This may reflect differences in student demographics at the more elite small private liberal arts colleges as it is noted that there were no mean differences between Hilbert freshmen and freshmen at the institutions in the Similar and Regional comparison groups. Second, the mean scores reflecting having taken foreign language courses (or intending to do so) were significantly lower for Hilbert freshmen than for freshmen from the Aspirational comparison group, although not significantly different from freshmen at Similar and Regional comparison institutions. Finally, in terms of encouraging contact among students of different backgrounds, Hilbert freshmen reported experiencing less emphasis from the college than did students from institutions within the Regional comparison group (no significant difference with Similar or Aspirational groups). Overall, it appears that first-year students at Hilbert perceive fairly similar opportunities for enriching educational experiences compared to freshmen elsewhere.

The story that emerges from looking at responses of seniors is somewhat different. While first-year students respond to many the EEE benchmark items in terms of their intentions or plans to engage in enriching experiences, for seniors in their last semester the items reflect what they actually have done in their time at the college. Hilbert seniors reported being just as likely, on average, to have had interactions with students different from themselves as did seniors at all three comparison groups.

While Hilbert seniors indicated that they were just as likely to have done an internship, field experience or practicum as students at Similar and Regional comparison group institutions, they were less likely to have done so compared to seniors at Aspirational group schools. An interesting finding merges in the item that asks about community service or volunteer work. As noted above, Hilbert freshmen are just as likely to express and intent for community service as freshmen elsewhere. However, our seniors report having been less likely to have done so than did seniors at the other institutions, although these differences reached statistical significance only compared to seniors from the Aspirational group. Hilbert seniors were also much less likely to have taken foreign language courses or to have studied abroad than were seniors at institutions in any of our three comparison groups.

Overall it appears that while Hilbert students have opportunities for enriching educational experiences not unlike students at similar institutions and institutions within our general region (excepting foreign languages and study abroad), this benchmark area is one that significantly differentiates us from those schools that are more selective and competitive in their admissions.

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.” (NSSE, 2007, p. 46)

As noted in earlier section Hilbert College’s benchmark score for Level of Academic Challenge was significantly lower than the average score for institutions in our Aspirational comparison group, but not significantly different from schools in either the Similar (Like Us) or Regional Competitors groups. The LAC benchmark is calculated from responses to 11 items on the NSSE questionnaire.

Academic Challenge (2011 NSSE)		Hilbert	Similar	Regional	Aspirational
<i>Worked harder than you thought you could to meet an instructor’s standards or expectations</i>	FY	2.80	2.84	2.71	2.77
	SR	2.99	2.92	2.76*	2.80
<i>Coursework emphasized analyzing basic elements of an idea, experience, or theory</i>	FY	3.17	3.21	3.20	3.35*
	SR	3.45	3.35	3.31	3.44
<i>Coursework emphasized synthesizing and organizing ideas, information, or experience into new, more complex interpretations and relationships</i>	FY	3.02	3.01	2.96	3.10
	SR	3.20	3.19	3.11	3.27
<i>Coursework emphasized making judgments about the value of information, arguments, or methods</i>	FY	3.20	3.02	2.93**	3.02
	SR	3.10	3.16	3.04	3.15
<i>Coursework emphasized applying theories or concepts to practical problems or in new situations</i>	FY	3.17	3.13	3.13	3.17
	SR	3.37	3.34	3.27	3.33
<i>Number of assigned textbooks, books, or book-length packs of course readings</i>	FY	2.97	3.31**	3.22**	3.55***
	SR	2.98	3.28*	3.16	3.51***
<i>Number of written papers or reports of 20 pages or more</i>	FY	1.33	1.28	1.25	1.27
	SR	1.53	1.67	1.60	1.80*
<i>Number of written papers or reports between 5 and 19 pages</i>	FY	2.39	2.32	2.29	2.51

Hilbert College NSSE Benchmark Scores: 2009-2011

	SR	2.96	2.72	2.59**	2.90
Academic Challenge (2011 NSSE)		Hilbert	Similar	Regional	Aspirational
<i>Number of written papers or reports of fewer than 5 pages</i>	FY	3.47	3.16**	3.04***	3.30
	SR	3.08	3.06	3.02	3.25
<i>Amount of time spent weekly preparing for class</i>	FY	3.36	4.23***	4.23***	4.71***
	SR	3.32	4.30***	4.44***	4.68***
<i>Extent to which college emphasizes spending significant amounts of time studying and on academic work</i>	FY	3.06	3.23*	3.17	3.27*
	SR	3.07	3.24	3.17	3.23

* Hilbert mean scores significantly different than comparison group ($p < .05$)

** Hilbert mean scores significantly different than comparison group ($p < .01$)

*** Hilbert mean scores significantly different than comparison group ($p < .001$)

Two items stand out as areas that Hilbert College students (first-year and seniors) scored significantly lower on average than did students from our comparison institutions. First, Hilbert students report doing much less reading as indicated by having fewer texts and books assigned, although they are likely to do comparable levels of writing of papers over 5 pages and even greater numbers of under 5 page papers. Second, Hilbert students (first-year and seniors) reported spending much less time preparing for class than did students for any of the comparison groups. This was somewhat surprising since for a separate item that asks the extent to which the institution emphasizes the importance of spending significant time on academic work, the only significant difference were for first-years compared to Similar and Aspirational group institutions. There were no significant differences for seniors' mean scores. It may be that while Hilbert students perceive an emphasis on academic work their actual experience, compared to students elsewhere is less time-demanding. On the other hand it is also possible that Hilbert students are more efficient in their use of time for academic work. One finding that might provide some indirect support for this interpretation is that Hilbert seniors (not first-years) reported spending significantly more hours per week working for pay off-campus than did students from any of the three comparison groups, almost twice as many hours per week than students in the Regional or Aspirational groups. In looking across the comparison groups, Hilbert College's senior response pattern was unique in that only for our seniors' scores was the average number of hours spent working greater than the number of average hours spent preparing for class.

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." (NSSE, 2007, p. 47)

It was for the Supportive Campus Environment benchmark that Hilbert College appeared to most excel in comparison to any of our customized comparison groups and indeed, in comparison to the NSSE national findings. It can be important to more fully understand why this is as much as understanding the finer points for those areas in which Hilbert's performance may be seen as in need of improvement. If for no other reason, to the extent that we excel in this benchmark of effective educational practice we should ensure that future policies and practices do nothing to undermine that

effectiveness. Six NSSE items are used in calculating the Supportive Campus environment benchmark score.

Supportive Campus Environment (2011 NSSE)		Hilbert	Similar	Regional	Aspirational
Quality of relationships with other students	FY	5.52	5.63	5.53	5.70
	SR	5.85	5.84	5.61	5.77
<i>Quality of relationships with faculty members</i>	FY	5.72	5.62	5.27**	5.60
	SR	6.14	5.82*	5.39***	5.80*
<i>Quality of relationships with administrative personnel and offices</i>	FY	5.22	5.11	4.90	5.10
	SR	5.50	5.06*	4.67***	4.73***
<i>College emphasizes providing the support you need to help you succeed academically</i>	FY	3.27	3.21	3.11	3.31
	SR	3.31	3.17	2.94**	3.18
<i>College emphasizes helping you cope with non-academic responsibilities (work, family, etc.)</i>	FY	2.69	2.43*	2.33**	2.45
	SR	2.33	2.25	2.07*	2.20
<i>College emphasizes providing the support you need to thrive socially</i>	FY	2.77	2.61	2.56*	2.65
	SR	2.46	2.42	2.32	2.42

* Hilbert mean scores significantly different than comparison group ($p < .05$)

** Hilbert mean scores significantly different than comparison group ($p < .01$)

*** Hilbert mean scores significantly different than comparison group ($p < .001$)

Several findings are worth noting in this important area. First, for almost every item Hilbert's first-year students respond in very similar ways compared to first-year students in all three comparison groups (see shaded rows in above table). The one significantly different item for freshmen asks about feeling supported with non-academic responsibilities. Hilbert freshmen scored significantly higher (more supported) than was typical for students at Similar and Regional comparison group schools. A second notable finding is that the extents to which differences favorable to Hilbert's supportive campus environment are even more pronounced across the items for seniors. There appears to be a fairly standard pattern across comparison group schools for first-years to report a somewhat stronger sense of support than do seniors in most areas addressed by these items. This makes a certain amount of intuitive sense from a developmental perspective, as one might expect students to need and look for more institutional support, academically, socially, and non-academically, in the first year and as one grows in experience and abilities (hopefully) to expect and maybe even need less institutional support. The items that trend the other way (seniors higher than freshmen) are also in areas one might expect as a result of longer periods of interaction, i.e., quality of relationships with other students and quality of relationships with faculty. The findings above show that these expected gains are even stronger for seniors at Hilbert College than among seniors at schools in our comparison groups. Furthermore there is somewhat less likely to the drop-off in sense of support from freshman to senior scores for Hilbert students than appears elsewhere. It may be debatable from a developmental point-of-view whether seniors need or expect less support than do freshmen, but apparently at Hilbert College that sense of being supported can often be expected to continue or even grow across the students' college career.

Supplemental NSSE Scales

Over the past several years several NSSE users and researchers have developed and validated supplemental scales to address questions that go beyond the five benchmarks of effective educational practice (Indiana Center for Postsecondary Research, 2012). In the following sections of this report several of the more widely accepted of these supplemental scales have been applied to Hilbert College's aggregated NSSE data covering the period 2009 – 2011. As noted earlier the quality of Hilbert's NSSE data is not even across this period, largely due to a nonrandom local administration in 2009, and a smaller than desired response rate the following year, 2010. Of the three administrations, the most recent in 2011 appears to offer the most positive psychometric qualities. For the purposes of the following analyses, all of the freshman and senior data from all three NSSE administrations will be used. Multi-year trend analyses would be viewed rather cautiously because of the noted sampling issues and is not included in the present study. On the other hand the analyses based on the aggregated data are expected to be enhanced by the larger total sample.

Results for the following supplemental scales are computed post-hoc based on Hilbert College's NSSE data only. Scores for each supplemental scale are calculated to be represented on an underlying scale of 0 to 100. Comparison group scores are not available as these scales are not calculated or reported by NSSE.

Deep Learning Scales

Deep approaches to learning are thought to be “represented by a personal commitment to understand the material which is reflected in using various strategies such as reading widely, combining a variety of resources, discussion of ideas with others, reflecting on how individual pieces of information relate to larger constructs or patterns, and applying knowledge in real world situations” (Laird, Shoup & Kuh, 2005, p.4). Deep learning is contrasted with ‘surface-level processing’ which is thought to focus on content using rote learning strategies. Laird, Shoup & Kuh (2005) identified 12 NSSE items to create a measure of deep learning comprised of three subscales and a total score. The three subscales, identified through exploratory and confirmatory factor analysis, were labeled higher-order learning, integrative learning, and reflective learning. Higher-order learning items address students’ perception that their academic work emphasizes advanced thinking skills such as analysis and synthesis. Integrative learning items assess the extent to which students participate in activities that demand integrating ideas and information from various sources including peers. The reflective learning items emphasize students’ engagement in activities that investigate their own thinking and encourage applications of new learning into other aspects of their lives.

These deep learning scales, as well as the other supplemental scales to be addressed later, are not a part of the standard NSSE report. Instead NSSE makes available syntax for use with SPSS data files from which the scale scores may be derived. To investigate the deep learning and other supplemental scales these SPSS syntax routines were applied to the 2009, 2010 and 2011 Hilbert College NSSE data files to create new variables. What follows will be a brief explanation of each set of supplemental scales and a descriptive presentation of the Hilbert students’ scores.

The following table presents descriptives for the deep learning scales for freshmen and seniors from the data representing NSSE years 2009, 2010 and 2011 combined and results of t-tests for differences in the means between freshmen and seniors.

Deep Learning Scales (NSSE 2009, 2010,2011)	CLASS	Mean Score	Std. Deviation	T (degrees of freedom)	Significance (2-tailed)
Higher Order Thinking Subscale	<i>First-Year</i>	66.99	24.11	2.707 (235.214)	.007
	<i>Senior</i>	74.58	20.29		
Integrative Learning Subscale	<i>First-Year</i>	55.17	19.45	4.483 (257)	.000
	<i>Senior</i>	61.45	17.99		
Reflective learning Subscale	<i>First-Year</i>	55.70	25.36	0.809 (252)	NS
	<i>Senior</i>	58.56	23.42		
Deep Learning Scale V1: (Average of 12 items)	<i>First-Year</i>	59.23	18.52	3.321 (253)	.001
	<i>Senior</i>	66.77	16.23		
Deep Learning Scale V2: (Mean of 3 subscales)	<i>First-Year</i>	59.29	18.85	2.996 (251)	.003
	<i>Senior</i>	66.20	16.42		

Examination of the above table reveals that for two of three subscales and both versions of the total scores for the Deep Learning Scales Hilbert seniors scored significantly higher than did freshmen. The only exception was on the Reflective Learning subscale (no difference). While these data are considered cross-sectional in that freshmen and seniors were both measured in the same years rather than being followed individually across their college years, it does appear that by the time students typically reach their senior year at Hilbert there has been a significant improvement in at least types of deep learning practices. Reflective learning shows a small but nonsignificant gain between freshmen and seniors. It may be worthwhile to look at how the current curriculum does or does not provide opportunities for reflective learning in students' academic work.

Gains Subscales

Another set of subscale syntax available from NSSE aims to measure the degree to which students report having made gains in a variety of personal, practical, and general education competency areas as a result of their undergraduate education. Separate subscale scores may be computed from the institutional data for:

Gains in Personal and Social Development (7 items)

Looks at gains students reported making in personal and social areas and the extent to which Hilbert helped facilitate those gains, e.g., understanding oneself and those of different backgrounds, voting in elections, contributing to one's community, becoming a self-learner, and developing personal values and/or a deepened sense of spirituality.

Gains in Practical Competence (5 items)

Composite of general competencies frequently sought by employers such as real-world problem-solving, using technology, working with others, & analyzing quantitative problems.

Gains in General Education (4 items)

Items that ask students to reflect on the extent to which Hilbert College has contributed to acquiring general education skills such as writing, speaking, and critical thinking.

Gains Subscales (NSSE 2009, 2010,2011)	CLASS	Mean Score	Std. Deviation	t (degrees of freedom)	Significance (2-tailed)
Personal & Social Development	<i>First-Year</i>	53.21	24.18	2.069 (234)	.040
	<i>Senior</i>	59.74	22.99		
Practical Competence	<i>First-Year</i>	68.29	22.12	3.460 (214.31)	.001
	<i>Senior</i>	78.06	20.45		
General Education	<i>First-Year</i>	75.34	22.08	3.738 (240)	.000
	<i>Senior</i>	85.59	18.87		

The Gains subscales show significant differences between scores for first-year students and seniors in all three areas; personal and social development, practical competence and general education. The difference in general education skills mirrors Hilbert College's recent findings from the Collegiate Learning Assessment, a 'real-life,' performance-based measure of higher-order competencies in critical thinking, problem-solving, analytical reasoning and written communication skills. For both the 2009-2010 and 2010-2011 administrations of the CLA, Hilbert's results showed significant 'value-added'

in these skills. The results of the NSSE indicate that students' perceptions of their own gains in these areas are consistent with their measured performance.

Satisfaction Subscales

Two subscales from the NSSE provide measures of overall student satisfaction with their undergraduate experience. The first, Overall Satisfaction, is a recalculated average of two items which ask student to evaluate their educational experience on a scale from poor to excellent, and the second item asks whether, if starting all over again, they would choose to attend the same institution (definitely no to definitely yes).

The second satisfaction subscale uses the same two items as above and adds four additional items that ask specifically about the quality of relationships with other students, faculty members, and administrative personnel and offices as well as the quality of academic advising.

Satisfaction Subscales (NSSE 2009, 2010,2011)	CLASS	Mean Score	Std. Deviation	t (degrees of freedom)	Significance (2-tailed)
Overall Satisfaction (2 items)	<i>First-Year</i>	73.38	25.34	4.12 (223.99)	.000
	<i>Senior</i>	86.32	21.19		
Overall Satisfaction plus Quality of Campus Relationships (6 items)	<i>First-Year</i>	75.42	18.15	3.74 (237)	.000
	<i>Senior</i>	83.89	15.39		

Two results from the comparison of first-years to seniors are worth noting here. First, the mean scores (on a calculated scale of 0-100) are relatively high for both groups on both subscales. Second, there are significantly higher ratings of satisfaction among seniors than among freshmen. Of course, it must again be kept in mind that these are cross-sectional not longitudinal data and that students who were very dissatisfied with their undergraduate experience at Hilbert would be much more likely to consider transferring or dropping out before reaching their senior year. Still, it does appear that students in their first year are basically quite satisfied with their choice and overall experience. An examination of the individual items in the Overall Satisfaction subscale revealed that in the 2011 NSSE 82% of freshmen and 92% of seniors rated their entire educational experience as Excellent or Good and 76% of freshmen and 89% of seniors said they definitely or probably attend Hilbert if starting over again.

Pike's Scaletts

In an effort to provide a mechanism for disaggregating NSSE results into more useful and focused measures of students' experiences at an institution, Pike (2006) developed eleven 'scaletts' that can be derived from the NSSE data. These scaletts are generally comprised of scores from three to four NSSE items and are intended to point to more actionable areas or issues than may be possible from the NSSE benchmark scores. Pike's scaletts are:

- a. Course Challenge (4 items)
- b. Writing (4 items)
- c. Active Learning (3 items)
- d. Collaborative Learning (4 items)
- e. Course-Related Interactions with Faculty (3 items)
- f. Out-of-Class Interaction with Faculty (3 items)
- g. Use of Information Technology (3 items)
- h. Emphasis on Diversity (3 items)
- i. Varied Educational Experiences (9 items)
- j. Support for Student Success (3 items)
- k. Interpersonal Environment (3 items)

All scaletts are calculated to assume an underlying scale with a maximum score of 100. Comparisons to scores from other institutions are not possible as these scaletts are locally based on institutional data and are not reported for all NSSE institutions.

Hilbert College NSSE Benchmark Scores: 2009-2011

Pike's Scaletts (NSSE 2009, 2010,2011)	CLASS	Mean Score	Std. Deviation	T (degrees of freedom)	Significance (2-tailed)
a. Course Challenge	<i>First-Year</i>	60.13	14.81	1.236 (249)	NS
	<i>Senior</i>	62.46	14.15		
b. Writing	<i>First-Year</i>	46.01	13.53	1.474 (252)	NS
	<i>Senior</i>	48.60	13.85		
c. Active Learning	<i>First-Year</i>	49.49	17.90	1.905 (249)	.058
	<i>Senior</i>	53.87	17.70		
d. Collaborative Learning	<i>First-Year</i>	39.24	20.37	1.557 (257)	NS
	<i>Senior</i>	43.10	17.88		
e. Course- Related Interactions with Faculty	<i>First-Year</i>	49.75	22.91	2.063 (248)	.040
	<i>Senior</i>	55.90	23.10		
f. Out-of-Class Interaction with Faculty	<i>First-Year</i>	28.08	23.02	1.343 (243)	NS
	<i>Senior</i>	31.96	20.68		
g. Use of Information Technology	<i>First-Year</i>	67.20	21.42	1.511 (239)	NS
	<i>Senior</i>	71.39	20.45		
h. Emphasis on Diversity	<i>First-Year</i>	54.35	27.53	.646 (242)	NS
	<i>Senior</i>	56.60	24.77		
i. Varied Educational Experiences	<i>First-Year</i>	17.71	15.47	4.608 (250)	.000
	<i>Senior</i>	27.84	19.23		
j. Support for Student Success	<i>First-Year</i>	60.18	26.32	.780 (243)	NS
	<i>Senior</i>	57.52	25.54		
k. Interpersonal Environment	<i>First-Year</i>	75.20	18.75	2.715 (250)	.007
	<i>Senior</i>	81.48	16.59		

Looking first at the mean scores of the eleven scalelets, computed mean scores are relatively lowest for both freshmen and seniors in the areas of Out-of-Class Interactions with Faculty (28.08 and 31.96 respectively) and Varied Educational Experiences (17.71 and 27.84 respectively).

The Out-of-Class Interactions with Faculty scalelet is calculated from three items that ask students to evaluate how often they have talked about career plans with a faculty member or advisor, worked with a faculty member on activities outside of coursework, and whether they have or plan to work on a research project with a faculty member outside of course or program requirements. An examination of the 2011 mean scores of these three items shows that Hilbert seniors report more frequent career plan discussions than do seniors at comparison group institutions in the Regional Competitors group and freshmen reported more frequent discussions than their peers in either the Regional Competitors or Aspirational comparison groups. For the item that asked about frequency of faculty-student collaboration outside of class, Hilbert freshmen reported significantly less such interaction than did freshmen at Regional Competitor schools, but not significantly different than freshmen from Similar and Aspirational schools. Seniors' mean scores were not significantly different from peers mean scores at any of the three comparison groups. On the final item about research project collaboration with faculty, Hilbert seniors reported being significantly less likely to have had this experience than did their peers at any of the three comparison groups. Interestingly, Hilbert freshmen were significantly more likely to report planning on having such opportunities than freshmen elsewhere.

So it appears that the relatively low scores on the Out-of-Class Interactions scalelet are mostly a result of low scores on research collaboration and somewhat low scores on out-of-class activities collaborations. This seems consistent with a campus where both faculty and students are likely to be commuters and where faculty research is not considered to be priority.

The Varied Educational Experiences scalelet is calculated from responses to 9 items, eight of which also are used by NSSE in calculating an institutions Enriching Educational Experience benchmark score as seen in an earlier section of this report. The eight overlapping items ask students whether they did or plan to do: internships/practicums, community service/volunteer work, foreign language coursework, study abroad, independent study, culminating senior experiences, or participate in a learning community, and how many hours per week they typically spend participating in co-curricular activities. As seen in that earlier analysis, Hilbert students responded to most of these items similarly to students at institutions in our Similar and Regional comparison groups, but significantly lower than students at schools in our Aspirational comparison group. The one exception was for Hilbert seniors reporting that they spend significantly less time in co-curricular activities than do seniors from all there comparison groups.

The new item added to the Varied Educational Experiences scalelet that was not included in the EEE benchmark asked about the number of hours in a typical week spent attending campus events and activities. Looking at responses of students in Hilbert's comparison groups, the only significant difference was that Hilbert seniors say they spend less hours per week than was reported by seniors at schools from the Aspirational group.

From the scalelets it also possible to look at differences between Hilbert freshmen and seniors scores as was done in the previous supplemental scales. Of the 11 scalelets, only three show statistically significant mean score class differences: Course-Related Interactions with Faculty, Varied Educational Experiences, and Interpersonal Environment. For all three of these scalelets the scores reported by Hilbert seniors were higher than the scores reported by Hilbert first-year students, suggesting that such experiences may be accumulative.

Conclusions and Discussion

So, what does it mean? What important lessons can we take away from the NSSE? On one hand, we can see from the NSSE benchmark scores that Hilbert excels at providing a supportive campus environment and that our students express a relatively high level of satisfaction with their overall educational experience. We see that Hilbert College compares fairly well in a number of areas to schools in our Similar to Us and Regional Competitor comparison groups, with the exception being in Enriching Educational Experiences. We also see that we have a ways to go to meet the levels reported in most benchmark areas reported by students at those schools we might eventually aspire to be more like, particularly in enriching educational experiences and level of academic challenge.

In reflecting on these and other findings in this report, it is important to keep in mind that the NSSE is a measure of educational experiences from the perspectives of first-year and senior students themselves. As such, it is based on subjective, self-reported data rather than on objectively measured activities. Still, our students' perception of their undergraduate experiences is extremely important information that warrants close examination. For one thing, there is a substantial and growing body of literature that connects NSSE scores to effective educational practices and outcomes. How engaged our students tell us they feel is just as important, if not more so, than any objective measure of the opportunities presented by the college. For example, if we are certain that sufficient enriching educational opportunities are provided yet our students tell us from the NSSE that they perceive (or recall) participating in relatively few such experiences, then a potentially serious disconnect is revealed. The same might be seen in examining the level of academic challenge presented in the college's general education and degree programs. To be truly effective educational practices intention must meet experience. Sometimes this might require more deliberate and intentional communication with students about the value of certain academic and non-academic activities toward the overall quality of an undergraduate education. In other instances it might demand a serious reevaluation and/or restructuring of academic and/or co-curricular offerings. It might even necessitate differentiating what, for example, enriching educational experiences mean for different groups of students, say for residential versus commuter populations, or first-generation versus non-first-generation students.

The greatest value in disaggregating Hilbert's NSSE findings as this report has attempted to do will come not from specific conclusions presented here or in future reports. Rather, the value will be derived from the discussions it will hopefully generate. Those discussions should occur within and across multiple levels within the greater Hilbert community: faculty, staff, administrators, students, board members and alumni.

Future Plans

Going forward, the NSSE data collected over the past three years (eventually combined with the 2012 administration) will be further analyzed to look for relationships with student retention at the one-year mark and beyond. The data will also be examined to determine if different patterns of responses exist for important subgroups of students, e.g., commuters versus residents. If sufficient numbers exist, it may also be possible to look students response for certain items as a function of degree program or at least by academic division.

Hilbert College is also participating in a related survey of entering college students' high school academic and co-curricular experiences, as well as their expectations for participating in educationally purposeful activities during the first college year called the Beginning College survey of Student Engagement. As we accumulate data from this survey as well as from the NSSE it will be possible to look specifically at how the information from these two surveys are related. The BCSSE is administered at Hilbert during summer orientation sessions to all newly admitted students. Many of those same students are then re-surveyed in the spring semester with the NSSE permitting a comparison between initial expectations and subsequent experiences.

Finally, the NSSE results may be used in conjunction with a variety of other ongoing assessment strategies. As mentioned earlier in this report, Hilbert College has participated in using the Collegiate Learning Assessment (CLA) as a performance measure of improvement in skills considered critical to its mission. It should be possible to link NSSE self-reports with objective CLA data for a number of students from the past three years.

The past three years' and current year's administrations of the NSSE to Hilbert College students was facilitated by a Title III grant. As this grant is ending in the summer of 2012 it is necessary to reconsider the frequency with which this survey will be used in the college's future assessment plan. At this point the value of NSSE data to the college is hopefully demonstrated and we will be able to proceed on at least an every other or every third year schedule, using the past four consecutive years as a baseline

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