Introduction and Rationale for Using NSSE in ABET Accreditation

One of the most common institutional uses of NSSE data is for accreditation. In fact, NSSE schools report that accrediting agencies are the primary external group with which they share NSSE results. There are two major reasons for this.

First, when assessing educational effectiveness accreditation agencies give less weight to indicators that represent institutional resources such as library holdings and student characteristics. More emphasis is placed on evidence of student learning. Regional associations and various specialized accrediting organizations urge colleges and universities to more thoroughly measure student learning. Specifically, demonstrating that processes are in place to assess and enhance learning outcomes and institutional effectiveness on an ongoing basis are among the recommendations. Student engagement results from NSSE are a direct indicator of what students put into their education and an indirect indicator of what they get out of it. NSSE data can show how engaged various types of students are in effective educational practices during the first and last years of college.

Second, regional and professional accreditation standards encourage institutions to focus on self-evaluation and formative reviews that guide improvement efforts. Rather than fashion self-studies as a stand-alone document for one-time use, they have begun to feature more elements of strategic planning and program evaluations that can be used to identify areas where institutions wish to improve. NSSE data are especially valuable for this purpose. The results are actionable; that is, they point to aspects of student and institutional performance that institutions can use to improve the curriculum, pedagogy, instructional emphases, and campus climate. In addition, because NSSE results allow a school to compare itself to others, the data often point to areas where improvement may be desired. NSSE results help answer key questions related to institutional policies and programs associated with high levels of student engagement and learning.

An effective accreditation plan is context specific. No one approach or template can do justice to the wide variety of institutional missions, curricula, and campus environments the plan is designed to address. However, two common early steps to developing an accreditation plan are to identify the assessment practices already in place and the data that are available and then to augment this evidence with the self-study process.[1]

Specific applications of student engagement information for accreditation vary. They may range from minimal use such as including the results in a self-study appendix to systematic incorporation of NSSE results over time to demonstrate the impact of improvement initiatives.

This toolkit provides suggestions for incorporating NSSE into accreditation processes and products with an emphasis on mapping student engagement results to specialized accreditation standards.

NSSE and the ABET Accreditation Process

NSSE results can be used in many components of the ABET accreditation process. These include but are not limited to (a) the initial self-evaluation report that responds to evaluation criteria established by the accrediting body; (b) the visit by the team of peer evaluators who consider additional evidence; and (c) ongoing review and maintenance that may include annual reports, annual summaries, and periodic reviews of strategic progress.

For specific schools of engineering or departments hoping to use NSSE results in specialized program accreditation processes, it is valuable to understand the institutional strategy for administering and utilizing NSSE. The following section provides suggestions on how schools of engineering may work with central administration to ensure appropriate timelines, enough engineering students are sampled, and encourage participation in specialized consortia. Even for departments that may not have a direct impact on the decisions regarding NSSE participation, understanding general institutional policies will help determine how to use NSSE data in the specialized accreditation process.

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[1] Alstete, J. W. (Ed.). (2004). Why does accreditation matter? [Special Issue]. *ASHE-ERIC Higher Education Journal, 30*(4), 1–26.

Timeline for NSSE Administration

Institutions establish different timelines to meet their self-study objectives. Some administer NSSE on an annual or biennial basis. The appropriate NSSE participation cycle depends on how you intend to use the data. Many institutions have found it valuable to have several years of NSSE results to establish a reliable baseline of data, then assess their students every few years to allow time for institutional changes to take effect. This planned administration cycle maximizes the use of student engagement data for most accreditation purposes. A substantial number of schools have gathered multi-year student engagement data and are carefully monitoring student learning processes to track trends over time and to make certain that institutional performance remains at the desired level.

Since the ABET accreditation cycle may not coincide with regional accreditation or other priorities that drive an institution's NSSE participation, ABET review committees will need to plan their analyses and use of NSSE data around existing institutional participation timelines. Ideally, ABET committees would have input into institutional decisions about the frequency of NSSE participation to establish baselines as well as to determining what criteria to use to identify engineering students in their population file.

NSSE 2013 Update

After years of evidence-based and collaborative testing, the updated NSSE survey is complete and was administered for the first time in spring 2013. While survey changes range from minimal adjustments to entirely new content, the updated instrument maintains NSSE's signature focus on diagnostic and actionable information related to effective educational practice.

How Will Comparisons with Prior-Year Results Be Affected?

Even the best surveys must be periodically revised and updated, affecting multi-year analyses such as trend studies or pre-post designs. Although many items remain unchanged, others have been modified and a few have been dropped, limiting longitudinal comparability of individual questions and historical benchmarks. While some new results will not be directly comparable to past results, institutions will still be able to evaluate longitudinal questions with the updated NSSE. For instance, if previous comparison group results indicate above average performance in a particular area, institutions will still be able to gauge whether they outperform the same or a similar comparison group. We are confident that these updates will enhance NSSE's value to institutions. NSSE will continue to provide useful resources and work with participating institutions to ensure maximum benefit from survey participation.

NSSE as a Tool for Documenting Student Learning Outcomes

Here are several examples of how student engagement information can respond to accreditation goals related to documenting student learning processes and outcomes:

- NSSE is a national survey that can help institutions measure their effectiveness in key areas of interest.

- Used systematically over time, NSSE provides data that illustrate (a) a college or university is using assessment to determine the extent to which it is meeting its educational objectives; (b) whether current institutional goals remain appropriate; and (c) various areas of teaching and learning in need of improvement.

- Institutions can benchmark their performance against select peer comparison groups, Carnegie classification, and NSSE national norms.

- Information about student engagement and institutional effectiveness is evidence of efforts to meet accrediting standards and continuously improve.

- NSSE results can yield insights into widely held assumptions about the nature of students and how they use the institution's resources for learning.

- Student engagement results are intuitively accessible and understandable by different groups of stakeholders, on and off the campus.

This toolkit provides suggestions for incorporating NSSE into specialized accreditation processes with an emphasis on mapping student engagement results to ABET criteria.

Survey Customization Options

Forming a Consortium

Science schools or programs that wish to use NSSE data to support ABET accreditation may want to explore participation in a consortium, a group of six or more colleges or universities participating in NSSE that share comparative, aggregated data. Consortia may also ask up to 20 additional questions that address unique characteristics of the member schools (all consortium institutions will get the same set of questions). More information on forming a consortium is available on the NSSE website.
nsse.indiana.edu/html/consortia.cfm

Topical Modules

New to the updated survey, participating institutions may append up to two topical modules—short sets of questions on designated topics such as academic advising, civic engagement, experiences with diversity, technology, and writing. Modules allow for deeper exploration of important areas based on campus needs. Participants may add up to one module for no extra cost, while adding a second module costs $150. Note that consortium members may only administer one module.

NSSE Administration

NSSE is administered via an online survey to all participating first-year and senior bachelor's degree-seeking students at an institution. This process is consistent with our belief that higher education assessment should include all students, not just those fitting the traditional-age, full-time student profile. Applying these criteria across all participating institutions helps ensure the integrity of NSSE benchmarking results.

Schools of engineering will also need to determine what criteria to use to identify engineering students in their population file. A "group" variable which identifies these students can be included in the population file submitted by your institution to NSSE. Group variables could also add characteristics desired for further analysis (for example, school-reported engineering specialties, SAT Math scores, or Fundamentals of Engineering scores). Group variables are returned in the institution's data file with the *Institutional Report* delivered in August. The NSSE survey also asks students to self-report their major(s) or expected major(s), and is another way to identify engineering students.

Major Field Report

Institutions now have the option to customize the major categories to match their profile of degrees offered. Institutions can regroup the 85 student-reported majors into as many as eight new categories via an online form in spring before their NSSE official reports are created. Institutions choosing not to customize their major categories receive NSSE's eight major field categories by default.

Custom Analysis

Custom analyses allow for more detailed comparisons between your students and those attending other institutions. A useful custom analysis for an institution seeking ABET accreditation might be to compare the responses of your senior engineering majors to students in similar programs at selected institutions. There are additional fees associated with custom analyses. Find more information on the NSSE website. **nsse.indiana.edu/html/custom_analysis.cfm**

Partner Surveys

Finally, NSSE offers two partner surveys, the Faculty Survey of Student Engagement (FSSE) and the Beginning College Survey of Student Engagement (BCSSE). FSSE measures faculty members' expectations of student engagement, provides information on how faculty spend their time related to professorial activities, and highlights the kinds of learning experiences the faculty emphasize. BCSSE measures entering first-year students' high school academic and co-curricular involvements as well as their expectations and attitudes regarding their participation in educationally purposeful activities for the upcoming year. Both surveys have been revised to align with the updated NSSE survey and may be helpful in supporting ABET standards related to faculty and students' expectations and outcomes.

Mapping NSSE to ABET Criteria

This toolkit is not intended to be a "formula" for mapping NSSE results to specialized accreditation standards, but is designed to encourage institutions to think more broadly about how these data can be used as evidence to support specific standards. Also, NSSE findings may be used to support and document institutional improvement efforts, but will be most meaningful when coupled with other measures of student learning outcomes from your campus.

NSSE items have been mapped to ABET General Criteria for Engineering Programs. Program criteria which provide specific curriculum requirements for the 27 subdiscipline programs (e.g., aerospace engineering, agricultural engineering, and so on) are not included in the toolkit.

Additional Survey Items and Topical Modules

The updated NSSE survey contains additional demographic items, Questions 20–38, that may be of value for examining practices within student subpopulations and to explore the influence of on-campus living, and being a student-athlete or a veteran.

New customization options on the updated survey include Topical Modules, short sets of questions on focused topical areas such as academic advising, writing, and technology use. Responses may help to support evidence of the quality of academic advising at an institution and the extent to which advisors have assisted students in their academic progress; student use of technology; perceptions of institutional support; and the relationships between writing and learning. Additional modules will be developed over time.

NSSE 2016 Survey Items Mapped to ABET Criteria

NSSE 2016 Survey Items		ABET Criteria
Question 1. During the current school year, about how often have you done the following?		
1a	Asked questions or contributed to course discussions in other ways	3g
1b	Prepared two or more drafts of a paper or assignment before turning it in	
1c	Come to class without completing readings or assignments	
1d	Attended an art exhibit, play, or other arts performance (dance, music, etc.)	
1e	Asked another student to help you understand course material	
1f	Explained course material to one or more students	
1g	Prepared for exams by discussing or working through course material with other students	3d, 3g
1h	Worked with other students on course projects or assignments	3d, 3g
1i	Given a course presentation	3g
Question 2. During the current school year, about how often have you done the following?		
2a	Combined ideas from different courses when completing assignments	3a–3c, 3g, 3h, 3j
2b	Connected your learning to societal problems or issues	3e, 3h, 3j
2c	Included diverse perspectives (political, religious, racial/ethnic, gender, etc.) in course discussions or assignments	3h, 3j
2d	Examined the strengths and weaknesses of your own views on a topic or issue	3f, 3h, 3j
2e	Tried to better understand someone else's views by imagining how an issue looks from his or her perspective	3g, 3h, 3j
2f	Learned something that changed the way you understand an issue or concept	
2g	Connected ideas from your courses to your prior experiences and knowledge	
Question 3. During the current school year, about how often have you done the following?		
3a	Talked about career plans with a faculty member	1, 3f, 6, 8
3b	Worked with a faculty member on activities other than coursework (committees, student groups, etc.)	3d, 6
3c	Discussed course topics, ideas, or concepts with a faculty member outside of class	3g, 6
3d	Discussed your academic performance with a faculty member	1, 6
Question 4. During the current school year, how much has your coursework emphasized the following?		
4a	Memorizing course material	
4b	Applying facts, theories, or methods to practical problems or new situations	3a–3c, 3e, 3h, 3j, 3k
4c	Analyzing an idea, experience, or line of reasoning in depth by examining its parts	3a–3c, 3e, 3h, 3j, 3k
4d	Evaluating a point of view, decision, or information source	3a–3c, 3e, 3h, 3j, 3k
4e	Forming a new idea or understanding from various pieces of information	3a–3c, 3e, 3h, 3j, 3k
Question 5. During the current school year, to what extent have your instructors done the following?		
5a	Clearly explained course goals and requirements	6
5b	Taught course sessions in an organized way	6
5c	Used examples or illustrations to explain difficult points	6
5d	Provided feedback on a draft or work in progress	1, 6
5e	Provided prompt and detailed feedback on tests or completed assignments	1, 6
Question 6. During the current school year, about how often have you done the following?		
6a	Reached conclusions based on your own analysis of numerical information (numbers, graphs, statistics, etc.)	
6b	Used numerical information to examine a real-world problem or issue (unemployment, climate change, public health, etc.)	
6c	Evaluated what others have concluded from numerical information	
Question 7. During the current school year, about how many papers, reports, or other writing tasks of the following length have you been assigned? (Include those not yet completed.)		
7a	Up to 5 pages	
7b	Between 6 and 10 pages	
7c	11 pages or more	
Question 8. During the current school year, about how often have you had discussions with people from the following groups?		
8a	People of a race or ethnicity other than your own	3g, 3h, 3j
8b	People from an economic background other than your own	3g, 3h, 3j
8c	People with religious beliefs other than your own	3g, 3h, 3j
8d	People with political views other than your own	3g, 3h, 3j

NSSE 2016 Survey Items		ABET Criteria
Question 9. During the current school year, about how often have you done the following?		
9a	Talked about career plans with a faculty member	
9b	Worked with a faculty member on activities other than coursework (committees, student groups, etc.)	
9c	Discussed course topics, ideas, or concepts with a faculty member outside of class	
Question 10. During the current school year, to what extent have your courses challenged you to do your best work?		
Question 11. Which of the following have you done or do you plan to do before you graduate?		
11a	Participate in an internship, co-op, field experience, student teaching, or clinical placement	3k, 5, 6
11b	Hold a formal leadership role in a student organization or group	
11c	Participate in a learning community or some other formal program where groups of students take two or more classes together	
11d	Participate in a study abroad program	3h
11e	Work with a faculty member on a research project	3b, 3k, 6
11f	Complete a culminating senior experience (capstone course, senior project or thesis, comprehensive exam, portfolio, etc.)	3b, 3c, 3e, 3k, 5
Question 12. About how many or your courses at this institution have included a community-based project (service-learning)?		
Question 13. Indicate the quality of your interactions with the following people at your institution.		
13a	Students	3d, 3g, 8
13b	Academic advisors	1, 8
13c	Faculty	1, 3g, 6, 8
13d	Student services staff (career services, student activities, housing, etc.)	3g, 7, 8
13e	Other administrative staff and offices (registrar, financial aid, etc.)	3g, 7, 8
Question 14. How much does your institution emphasize the following?		
14a	Spending significant amounts of time studying and on academic work	
14b	Providing support to help students succeed academically	1, 6, 7, 8
14c	Using learning support services (tutoring services, writing center, etc.)	7, 8
14d	Encouraging contact among students from different backgrounds (social, racial/ethnic, religious, etc.)	
14e	Providing opportunities to be involved socially	
14f	Providing support for your overall well-being (recreation, health care, counseling, etc.)	
14g	Helping you manage your non-academic responsibilities (work, family, etc.)	
14h	Attending campus activities and events (performing arts, athletic events, etc.)	
14i	Attending events that address important social, economic, or political issues	3h
Question 15. About how many hours do you spend in a typical 7-day week doing the following?		
15a	Preparing for class (studying, reading, writing, doing homework or lab work, analyzing data, rehearsing, and other academic activities)	
15b	Participating in co-curricular activities (organizations, campus publications, student government, fraternity or sorority, intercollegiate or intramural sports, etc.)	
15c	Working for pay on campus	
15d	Working for pay off campus	
15e	Doing community service or volunteer work	
15f	Relaxing and socializing (time with friends, video games, TV or videos, keeping up with friends online, etc.)	
15g	Providing care for dependents (children, parents, etc.)	
15h	Commuting to campus (driving, walking, etc.)	
Question 16. Of the time you spend preparing for class in a typical 7-day week, about how much is on *assigned* reading?		
Question 17. How much has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?		
17a	Writing clearly and effectively	3g
17b	Speaking clearly and effectively	3g
17c	Thinking critically and analytically	3a–3c, 3e, 3h, 3k
17d	Analyzing numerical and statistical information	3a–3c, 3e, 3h, 3k
17e	Acquiring job- or work-related knowledge and skills	3a–3h, 3k
17f	Working effectively with others	3d, 3g, 3h, 6
17g	Developing or clarifying a personal code of values and ethics	3f, 3h, 3j
17h	Understanding people of other backgrounds (economic, racial/ethnic, political, religious, nationality, etc.)	3h, 3j
17i	Solving complex real-world problems	3a–3c, 3e, 3h, 3k
17j	Being an informed and active citizen	3f, 3j
Question 18. How would you evaluate your entire educational experience at this institution?		
Question 19. If you could start over again, would you go to the same institution you are now attending?		

Institutional Examples

Interest in using NSSE for specialized accreditation is growing across all sectors and types of institutions. Because NSSE focuses on student behaviors and effective educational practices, colleges and universities have found productive ways to incorporate survey results into their institutional self-studies and annual progress reports for ABET. In this section, we describe how selected institutions are using NSSE in ABET accreditation.

Colorado School of Mines

In 2002, the Colorado School of Mines' (CSM) outlined 16 qualitative and quantitative goals for its Performance Contract with the Colorado Department of Education. These goals focused on retention, persistence, and graduation rates; first-year mentoring programs; administration of national examinations and student satisfaction surveys; assessment of the quality of academic programs; and other areas related to institutional resources and support.

To support Goal 4, Student Satisfaction, CSM committed to administer a nationally normed student satisfaction survey and include results in its ABET accreditation review process. NSSE was chosen and first administered in 2003, then again in 2006 and 2009, to assess change from the initial 2003 baseline data. CSM's Performance Contract Review Report, 2002–2010, stated plans to administer NSSE annually. The report explains that NSSE was chosen "because it broadly addresses student satisfaction, as well as institutional effectiveness—areas central to all of CSM's academic programs, especially the ABET (Accrediting Board of Engineering and Technology) accredited programs."

Franklin W. Olin College of Engineering

In a 2010 symposium presentation[1] on restructuring engineering education for the 21st century, Richard K. Miller, President of Franklin W. Olin College of Engineering, stressed the importance of "…inventing a new paradigm for engineering education that prepares students to become exemplary engineering innovators who recognize needs, design solutions, and engage in creative enterprises for the good of the world." He noted that Olin stresses pedagogies of engagement more than many other engineering schools and the need for direct and indirect assessment of its learning model.

[1]Miller, R. K. (2010). *From the ground up: Rethinking engineering education for the 21st century.* Presentation at the Symposium on Engineering and Liberal Education, Union College, Schenectady, NY, June 4–5, 2010.

Olin has participated annually in NSSE since 2003 and has reviewed its results in relation to ABET outcomes. Analyses of NSSE data have indicated that Olin students are much more highly engaged than their peers in programs at similar institutions. Although NSSE results provide indirect indicators, President Miller stated "…they are so consistent across all the metrics that it is difficult to avoid the conclusion that something unusual is happening" in the Olin program. Olin also plans to look at correlations between NSSE results and longitudinal measures of career outcomes for its graduates.

The Catholic University of America

In 2005, the School of Engineering (SOE) at The Catholic University of America (CUA) adopted a unified assessment process (UAP) for all engineering departments. Reports of program outcomes that align with ABET guidelines are issued annually. Since 2007, select NSSE data have been used in assessment of engineering programs as well as CUA's general education goals. SOE seniors at CUA are compared with the general CUA senior population as well as with Carnegie peers to measure how well the SOE is meeting 11 program learning objectives. Specifically, CUA studied results for SOE seniors on NSSE items related to oral and written communication, critical thinking and reasoned analysis, understanding of scientific and quantitative reasoning, ability to find and critical evaluate information using resources and technology, and experiences with diversity. Data from the various assessments have resulted in curricular changes focused on continuous improvement.

South Dakota School of Mines and Technology

In its 2010 Self-Study Report for the Degree of Bachelor of Science, the Department of Electrical and Computer Engineering of South Dakota School of Mines and Technology used NSSE data as evidence to strengthen three sections of ABET criteria:

- Criterion 5. Curriculum. NSSE results on items related to oral and written communication skills reinforced faculty evaluation of student papers and feedback gathered from employers recruiting at annual career fairs held on campus.

- Criterion 8. Support. F. Adequacy of Support Personnel and Institutional Services. Responses on NSSE items related to the quality of students' relationships with administrative staff supplemented informal daily feedback on interactions with the Office of the Registrar and Academic Services.

- Appendix D. Institutional Summary. Section D. Student Body. Results from NSSE and the Student Satisfaction Inventory (SSI, Noel Levitz) provided a profile of the School of Mines student body. Data revealed that students were goal and task oriented, were technologically skilled, valued personal ethics and values, but had little interaction with people of diverse backgrounds and cultures. More students at the School of Mines also work off campus and have family responsibilities.

Recent Trends in Accreditation

The following trends in accreditation support using engagement results in assessment and institutional improvement initiatives in specialized programs:

- Campuses and accrediting bodies are moving toward self-studies that systematically review existing processes over time (i.e., strategic planning, program evaluation or student services, and enrollment management), as contrasted with one-point-in-time reports that have limited utility.

- Regional and specialized accrediting bodies have shifted away from setting and holding institutions to rigid quantitative standards that feature inputs and resources toward empirically-based indicators of institutional effectiveness and student learning.

- Regional and program accreditors are emphasizing the importance of cultivating "cultures of evidence" that nurture and sustain continuous improvement. Progressive campus leaders are increasingly harnessing the regional and specialized program re-accreditation process as a "chariot for change." Rather than viewing the process as a burden or hurdle to be overcome, presidents, provosts, and deans are using the self-study and team visit as an opportunity to stimulate productive dialogue and to guide constructive change.

Accreditation Tips

Tip #1

Student engagement results provided by NSSE are direct indicators of what students put into their education and indirect indicators of what they get out of it.

Tip #2

NSSE items can be used to analyze the resources and appraise the effectiveness of the institution in fulfilling the mission and goals of individual specialized programs. Two such measures included in the educational gains items are the extent to which students' experiences at the institution have: (a) contributed to their knowledge, skills, and personal development in specific program areas; and (b) helped them develop a personal code of values and ethics. Assessment of these experiences may help to demonstrate achievement of program mission and goals.

Tip #3

NSSE data are actionable; that is, they point to aspects of student and institutional performance that institutions can address related to the curriculum, pedagogy, instructional emphases, and campus climate. In addition, because NSSE results allow a school to compare itself to others, the data often point to areas where improvement may be desired.

Tip #4

The Faculty Survey of Student Engagement (FSSE) measures faculty expectations of student engagement in educational practices that are empirically linked with high levels of learning and development. Taken together, the combination of NSSE and FSSE results can be used to identify areas of strength as well as aspects of the undergraduate experience that may warrant attention and stimulate discussions related to improving teaching, learning, and the quality of students' educational experience.

Tip #5

NSSE results can help assess the degree to which the institution encourages contact among students from different economic, social, and racial or ethnic backgrounds and the extent to which students report that their experiences at the institution have contributed to their knowledge, skills, and personal development in understanding people of other racial and ethnic backgrounds. Results can also be used to demonstrate institutional effectiveness in responding to the increasing diversity in society through educational and co-curricular programs.

Additional Information

Copies of this document, accreditation toolkits mapped to other specialized and regional accreditation standards, and reports related to NSSE data and accreditation are available on the NSSE website. nsse.iub.edu/links/accred_toolkits.

Criteria for Accrediting Engineering Programs. Effective for Evaluations During the 2013–2014 Accreditation Cycle. ABET.

Approved October 27, 2012

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