Quick Takes – 30 min Webinar
Beyond NSSE Benchmarks: Underused Nuggets of Effective Educational Practice

Thank you for joining us.

The Webinar will begin at 3:00pm.

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- If this does not work, the Webinar is being recorded. You will be able to view the session on the NSSE Web site several days after the live session.

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Quick Takes – 30 min. Webinar
Beyond NSSE Benchmarks :
Underused Nuggets of Effective Educational Practice

Jillian Kinzie, Associate Director

Make better use of the hidden gems in your NSSE results. "Beyond NSSE Benchmarks: Underused Nuggets of Effective Educational Practice" highlights a half-dozen novel, but proven approaches for making NSSE results more meaningful and useful to efforts to enhance student learning and success.

Topics include: NSSE scales, including deep approaches to learning, and "scalelets"; high-impact practices, and models for exploring retention and persistence.

Overview

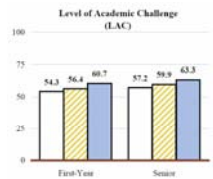**Introduction to Nuggets**

Nuggets = Constructs, approaches proven useful at institutions to generate interest in results, to study educational issues; generally helpful for advancing improvement agenda.

1. **Scales and Scalelets**
2. **High-Impact Practices**
3. **Multi-Year Analysis**
4. **Linking data**
5. **Variation with-in**

NSSE Benchmarks

- **Level of Academic Challenge**
- **Active and Collaborative Learning**
- **Student-Faculty Interaction**
- **Enriching Educational Experiences**
- **Supportive Campus Environment**

Level of Academic Challenge (LAC)

- Peer Groups
- Top 50% and Top 10%
- Means, significant differences, and **effect size**
- Detailed statistics

Benchmarks as a Broad Overview

- Benchmarks are good for broad overview, & external comparison purposes; a constellation
  - Discover patterns, identify strengths, challenges
  - Compare based on student and institutional characteristics
- **But...**
  - Breadth conceals strong/weak items
  - BM are gross measures, difficult to know exactly where to focus action
  - Masks "variation with-in" (race-ethnicity, gender, major)
  - BM not the best performers in analysis (predicting retention or GPA, multi-year change)

NSSE Scales

- NSSE Scales and Scalelets
  - Smaller, more reliable measures
  - NSSE Scale properties:
    www.nsse.iub.edu/pdf/Norms%20and%20Scales%20–%202006%20NSSE%20Scalets.pdf
    - Deep approaches to learning
      [see NSSE Annual Reports 2006 – 2008]
    - Diversity experiences (1e,u,v;10c,11l)
      [Pike, G. R., & Kuh, G. D. (2006). Relationship among structural diversity, informal peer interactions and the perceptions of the campus environment. The Review of Higher Education, 29 (4), 425-450.]
    - Scales to measure perceived gains in social, practical, and academic competence
      [Zhao, C. & Kuh, G. D. (2004). Adding value: Learning communities and student engagement. Research in Higher Education, 45 , 115-138.]

NSSE Scales

☞ "Scalelet scores are most useful to academic affairs, student affairs, and assessment professionals charged with taking NSSE results and translating them into a series of action items to improve the student experience on campus"

Pike, G. R.,. (2006). The convergent and discriminant validity of NSSE scalelet scores. *Journal of College Student Development, 47* (5), 551-564.

- GA Tech linked multiple years NSSE responses to several outcomes: FY retention, GPA, pursuit of graduate education, & employment outcome upon commencement/degree conferral. Found BM offered little explanatory power, but scales and items showed promise.

Gordon, J., Ludlum, J., & Hoey, J. (2008*). Validating NSSE Against Student Outcomes: Are They Related? Research in Higher Education, 49, 19–39.*

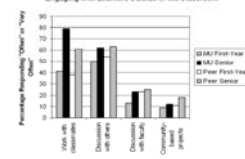
Using Scales: Miami University

Assessment Brief #15
February 29, 2006

Miami University Assessment

Engaging with Other Learners Outside of the Classroom

NSSE Overview
In the Spring of 2005, 873 undergraduate students (556 first-years and 317 seniors) on the Oxford campus of Miami University completed the National Survey of Student Engagement (NSSE). The NSSE contains 29 questions that assess the extent to which students engage in a variety of effective educational processes. A total of 5,813 students at 27 peer institutions also completed the NSSE during the Spring of 2005.[1]

Engaging with Learners Outside of the Class
On all questions reported below, seniors at Miami University reported significantly higher levels of engagement than did first-year students (p < .01).

☞ Assessment brief from Miami University (OH), that explores degree to which first-year and senior students engaged in learning activities outside the classroom

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NSSE Scales

☞ Gains items (alphas .83 - .88) – solid outcome variables

Student Self-Reported Gains

Gains in Practical Competence		
1	gnwork	Acquiring job or work-related knowledge and skills
2	gnothers	Working effectively with others
3	gncmpts	Using computing and information technology
4	gnquant	Analyzing quantitative problems
5	gnprobsv	Solving complex real-world problems

Gains in General Education		
1	gnwrite	Writing clearly and effectively
2	gnspeak	Speaking clearly and effectively
3	gngenled	Acquiring a broad general education
4	gnanaly	Thinking critically and analytically

NSSE Scales

☞ Gains items (alphas .83 - .88) – solid outcome variables

Gains in Personal and Social Development		
1	gnethics	Developing a personal code of values and ethics
2	gnself	Understanding yourself
3	gndivers	Understanding people of other racial and ethnic backgrounds
4	gncitizn	Voting in local, state, or national elections
5	gninq	Learning effectively on your own
6	gncommun	Contributing to the welfare of your community
7	gnspirit	Developing a deepened sense of spirituality

NSSE Scales

☞ **Deep approaches to learning**

  ☞ Higher order thinking (item 2b,c,d,e)

  ☞ Integrated learning (items 1d,e,i,p,t)

  ☞ Reflective learning (items 6d,e,f)

- *Educationally substantive information, interesting to faculty*
- *Perform well in analyses*

NSSE Deep/Integrative Learning

➢ Integrating ideas or information from various sources

➢ Included diverse perspectives in class discussions/writing

➢ Put together ideas from different courses

➢ Discussed ideas with faculty members outside of class

➢ Discussed ideas with others outside of class

➢ Analyzing the basic elements of an idea, experience, or theory

➢ Synthesizing & organizing ideas, info., or experiences

➢ Making judgments about the value of information

➢ Applying theories to practical problems or in new situations

➢ Examined the strengths and weaknesses of your own views

➢ Tried to better understand someone else's views

➢ Learned something that changed how you understand an issue

NSSE High-Impact Practices

- AAC&U defined "High-Impact Practices" align with NSSE measures
  - Learning Communities
  - Service Learning
  - Research with a Faculty Member
  - Study Abroad
  - Culminating Senior Experience
- Findings from AAC&U & NSSE: Growing evidence that "high-impact practices" provide substantial educational benefits to students

  [AAC&U, 2008 publication: *High-Impact Educational Practices: What They Are, Who Has Access To Them, and Why They Matter*]

Report on Student Engagement in High-Impact Practices

Participation in HIPs on our campus based on NSSE results and other institutional data. To what extent are practices available to all students?

	Learning Communities (first year students)	Service Learning	Research w/ Faculty
On Our Campus	√		
Required for all	no		
% Students involved	35%		
% First Generation	22%		
% Transfer Students	0		
% African American	15%		
% Latino Students	5%		
% Asian American	15%		
% other			
% Adult Students	0		

Multi-Year Analysis

- What is the best approach to using results from multiple NSSE administrations?
- More than 75% of NSSE participating institutions have administered the survey more than once.
- Some look for changes in the way their current students are engaged, some track possible trends, and others evaluate specific campus initiatives.
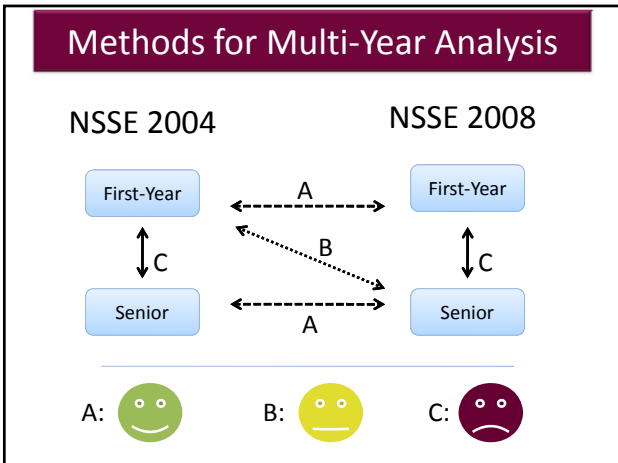
Identifying Multi-Year Questions

- Confirming stability and reliability
  - *How stable was our data from one year to the next?*
- Measuring change due to campus initiatives
  - *Given the implementation of a specific campus initiative, how much did engagement change before and after?*
- Identifying trends over time
  - *What trends in the data are apparent in given engagement measures over time?*

Methods for Multi-Year Analysis

NSSE 2004   NSSE 2008

First-Year ← — A — → First-Year

C   B   C

Senior ← — A — → Senior

A: 🙂   B: 😐   C: ☹️

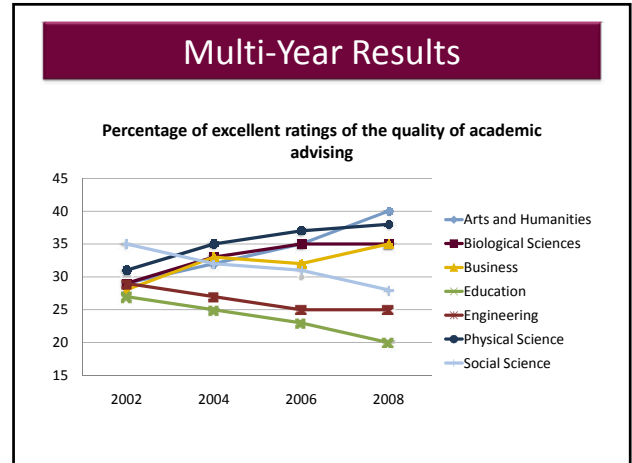## NSSEville State University – Research Question

"Undergraduate Student Research Program" (2006-07) gives resources to students and faculty for research projects outside of class.

- **Question: Did research with faculty increase between 2006 and 2008? If so, did changes vary by gender?**

NSSEville Multi-Year Results

Worked on a research project with a faculty member outside of course or program requirements

	N	Percent "done"	Statistical Difference?	Effect Size
2006 F-Y Male	69	4%	NO	
2008 F-Y Male	133	5%		
2006 F-Y Female	306	4%	YES**	.13 (small)
2008 F-Y Female	309	7%		
2006 SR Male	82	21%	NO	
2008 SR Male	143	22%		
2006 SR Female	238	18%	YES***	.17 (small)
2008 SR Female	325	25%		

Multi-Year Results

Percentage of excellent ratings of the quality of academic advising

- Arts and Humanities
- Biological Sciences
- Business
- Education
- Engineering
- Physical Science
- Social Science

Linking Data

- **In-house surveys**
- **National surveys (a growing list)**
  - **CLA**
  - **CSEQ / CSXQ**
  - **CIRP – Freshman Survey/ YFCY / CSS**
  - **EBI Benchmarking surveys**
  - **Noel Levitz Student Satisfaction Inventory**
  - **ETS Major Field Tests**
  - **ACT Collegiate Assessment of Academic Proficiency**
- **Institutional data: GPA, financial aid, transcripts, retention, certification tests, etc.**

Linking Educational Processes & Outcomes

- Lee Shulman (2007)…use multiple data points to develop a ***complex institutional narrative***
- CLA provides information about learning outcomes, but just knowing this provides little insights about educational practices and student behaviors that account for these scores, or what might be done to improve low performance
- By combining NSSE & CLA, institutions can learn more about programmatic features that correlate with gains in students' analytical reasoning, critical thinking, and writing skills

Combining NSSE + CLA

Option 1 – In Tandem
- Administer CLA and NSSE to same cohort of students
- Examine results from NSSE and CLA in tandem to think about the relationship between CLA performance and student engagement

Option 2 – Matched Results
- Match CLA and NSSE results at the student level
- Affords appropriate analyses of the relationship between CLA performance and student engagement

Option 1 – In Tandem

- CLA Senior performance – Mean scores

	All Schools	Your School
Performance Task	1072	1083
Analytic Writing Task	1101	1057
Make-an-Argument	1096	1046
Critique-an-Argument	1104	1064
Total score	1086	1072
SAT score	1068	1061

- NSSE SR writing items compared to select peers…
  - % SR writing papers > 5 pgs   =
  - % SR students who prepare 2 or more drafts   -
  - % SR reporting substantial gains in writing effectively -
  - % SR worked on paper requiring integrating ideas, sources -

Kalamazoo College example

(*Peer Review*, 2007,v9, 2 *Multiple Drafts of a College's Narrative*
http://www.aacu.org/peerreview/pr-sp07/documents/PRSP_07_Sotherland.pdf

- Two questions guided inquiry of CLA results: (1) What attributes of a Kalamazoo education might account for this overall performance? (2) What variations in students' educational pathways might account for differences in CLA performance at Kalamazoo?
- To explore these questions K- College: compared "typical" indicators of students' academic abilities (i.e., GPA & SAT) to CLA performance, disaggregated CLA scores by academic divisions, performed similar analyses of NSSE data, and interviewed students about their college experiences
- Hypothesized that student engagement would correlate positively with CLA scores. Using matched data from seniors who completed both NSSE and CLA (n = 48) revealed no significant correlations -- however, "analyses…suffers from the small sample size and a relatively homogeneous group of students."

Kalamazoo College example cont'd

- Re-examined data from *all seniors* who took NSSE 2005–6 (RR =76%) by comparing responses from students majoring in 5 academic divisions
- Level of Academic Challenge (LAC) benchmark differed significantly among divisions
- LAC score for natural sciences significantly lower than scores for humanities & social sciences, prompting reexamination of responses to each question in benchmark. Humanities & social sciences significantly higher than natural sciences in three items: (1) number of written papers between five and nineteen pages; (2) number of assigned textbooks; and (3) making judgments about the value of information. If these responses highlight different experiences of students in these disciplines, this might explain interdivisional differences in CLA performance and suggest possibilities for improving curriculum
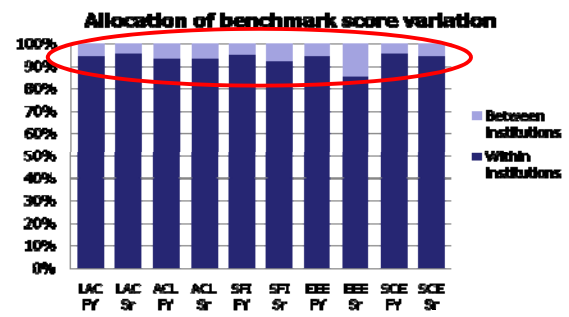
Kalamazoo College example cont'd

NSSE results revealed patterns that corroborated K-College faculty hunches about variation in CLA data

- Students who write well & who have had more experience making judgments about the value of information would theoretically perform better on CLA
- The following patterns emerged: foreign language proficiency correlated positively with CLA scores; students who used phrases like "personal initiative" generally did better on CLA; and some science majors seemed to get "lost" in their major, but those who did explore other disciplines tended to do well on the CLA

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Variation With-in

Allocation of benchmark score variation

Legend:
- Between institutions
- Within institutions

X-axis categories: LAC FY, LAC Sr, ACL FY, ACL Sr, SFI FY, SFI Sr, EEE FY, EEE Sr, SCE FY, SCE Sr

Quality is not uniform within institutions. The lion's share of the variation is *among students, within institutions*

Variation With-in

- **What does it mean to look at variation within?**
  - Examine variation in student experience by major, by groups of related majors, or demographic or enrollment subgroups
  - Or, examine: who are the least engaged students (for ex: the bottom quarter of the distribution within an institution), and what can be done to improve their experience so as to narrow the gap between an institution's least and most engaged students?
- **Another implication**: even high-performing institutions have work to do to improve the experience of all students.
- **Two case studies** based on *real data from two NSSE 2008 institutions* illustrated in NSSE AR 2008.
  - 1. Examine Supportive Environment for 3 student groups: Honors, Educational Opportunity Program (EOP) and, "All Other Students."
  - 2. Examine Enriching Experiences by discipline/major

Beyond Benchmarks & Standard Reports

- Doing your own within-institution analyses using NSSE resources
  - SPSS data
  - Codebooks
  - **Syntax library (http://nsse.iub.edu/html/syntax_library.cfm)**
- Additional tools and services from NSSE
  - Special analyses
  - Voluntary System of Accountability
  - Accreditation Toolkits (regional and specialized)
  - Multi-year Data Guide

Discussion

- Have you mined these nuggets?
- How have you been using scales and "looking within," and what have you found?
- What are other productive approaches for sharing results and identifying areas for improvement?
- What else could NSSE do to support your efforts?

Upcoming NSSE Webinars

Registration Opens Today

Digging Deeper series of Webinars presented by NSSE research analysts, http://cpr.iub.edu/qform.cfm?qform_id=43

- **April 7** – Core Concepts
- **April 14** – Intermediate Concepts
- **April 28** – Advanced Use: Multi-year Analysis

Please note that the number of Webinar registrants is limited and sessions fill up very quickly.

Future topics also include:

- using NSSE in accreditation
- using high impact activities to maximize student gains
- integrating NSSE results across academic/support departments
- linking NSSE data with other institutional data.

For dates, check our complete Webinar listing at **www.nsse.iub.edu/webinars**