



## Toward Strengthening General Education:

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### Beyond Curricular Change - Educational Environments Designed for Learning *ACA Summit, 2005*

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## Agenda



1. Context for focus on improving educational environments
2. What we've learned from NSSE about effective educational practice
3. Using data to evaluate and improve educational environments
4. Stimulating action around effective educational practice
5. Discussion




## What we know about student learning...

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- ♦ Educators must be concerned with the design of the learning environments – in and outside the classroom, socio-cultural aspects and physical settings – in which students interact with peers, the content, educators and others, and the implementation of strategies that help guide the student toward the intended outcomes



## Some Assertions about Undergraduate Education :

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Assertion 1: Too few students are getting the most out of their college education.

Assertion 2: The total learning environment must be examined to improve undergraduate education.

Assertion 3: We value what we measure.

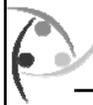
- ♦ How do we get more students to take greater advantage of educational opportunities?
- ♦ To what extent are you willing to increase your investment in student success initiatives?
- ♦ Are you willing to consider the effectiveness of current practice in teaching and learning?
- ♦ How do you know that what you're doing enhances student learning and success?



## Promising Signs

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- ❖ "Learning that lasts" requires effective educational processes and outcomes -- how do we create environments that facilitate student learning??
- ❖ Institutions must take a deep, comprehensive look at themselves to assess the quality and effectiveness of the undergraduate program.
- ❖ Assessment and improvement activities like NSSE can help!



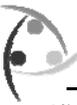
## The NSSE Challenge

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How might we more effectively use data about quality in undergraduate education to:

- ✓ provide evidence of student learning
- ✓ motivate and inspire effective educational practice
- ✓ strengthen the learning environment?





## NSSE and ACA schools

- ♦ [Alice Lloyd College](#) | [Berea College](#) | [Bryan College](#) | [Campbellsville University](#) | [Davis & Elkins College](#) | [Emory & Henry College](#) | [Lee University](#) | [Lees-McRae College](#) | [Lincoln Memorial University](#) | [Lindsey Wilson College](#) | [Mars Hill College](#) | [Maryville College](#) | [Milligan College](#) | [Union College](#) | [University of Charleston](#) | [University of the South](#) | [Virginia Intermont College](#) | [Warren Wilson College](#) | [West Virginia Wesleyan College](#) | [Wheeling Jesuit University](#)
- ♦ Consortium – Work college, Christian colleges



## ACA schools and Teagle Foundation

- ♦ Goal to strengthen general education by supporting colleges in the collection and use of student outcomes information provided by ACT CAAP (writing, reading, math, science)
- ♦ Institutions will study gains scores to identify areas in general education curriculum to revise and enhance
- ♦ ACA schools will collaborate to develop new approaches to structuring content and pedagogy



## Integrating data points around general education

- ♦ Comprehensive review of gen ed requires
  - ♦ Examination of learning outcomes data and course taking patterns to pinpoint where work needs to be done in the curriculum
  - ♦ Consideration of the total learning environment to broadly assess quality of the undergraduate program and identify educational practices that need attention or can help further efforts to strengthen general education

*HOW will understanding outcomes data change things on campus???*



## Lessons from the Research on What Matters to Student Learning



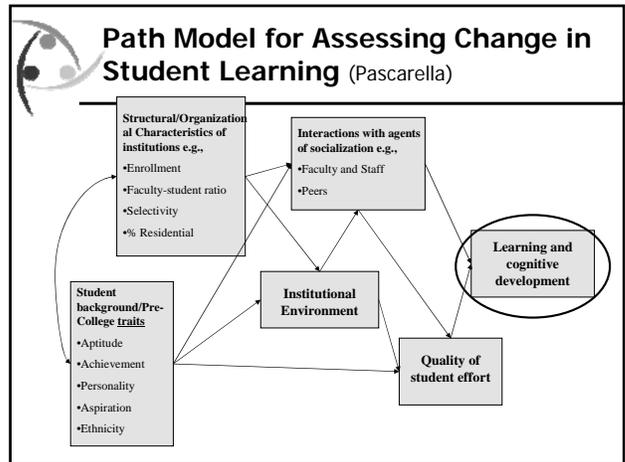
*The greatest impact appears to stem from students' total level of campus engagement, particularly when academic, interpersonal, and extracurricular involvements are mutually reinforcing...*

Pascarella & Terenzini, *How College Affects Students*, 2005, p. 647



## Lessons from the Research on What Matters to Student Learning

- ♦ What students do during college counts more in terms of desired outcomes than who they are or even where they go to college.
- ♦ The voluminous research on college student development shows that the time and energy students devote to educationally purposeful activities is the single best predictor of their learning and personal development.



### Good Practices in Undergraduate Education

(Chickering & Gamson, 1987; Pascarella & Terenzini, 2005)

- ✓ Student-faculty contact
- ✓ Active learning
- ✓ Prompt feedback
- ✓ Time on task
- ✓ High expectations
- ✓ Experiences with diversity
- ✓ Cooperation among students



### What Really Matters in College: Student Engagement



Because individual effort and involvement are the critical determinants of impact, institutions should focus on the ways they can shape their academic, interpersonal, and extracurricular offerings to encourage *student engagement*.

Pascarella & Terenzini, *How College Affects Students*, 2005, p. 602

### National Survey of Student Engagement

*(pronounced "nessie")*



### Community College Survey of Student Engagement

*(pronounced "sessie")*

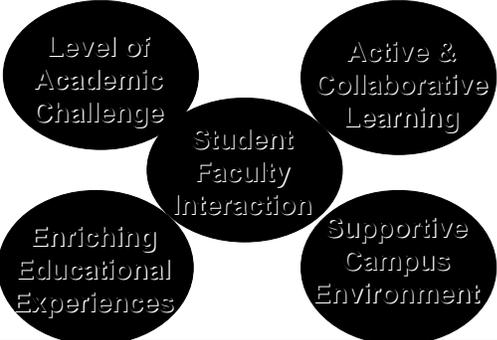
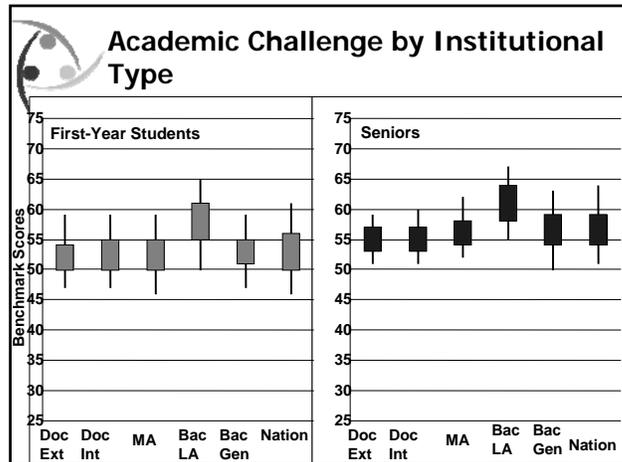


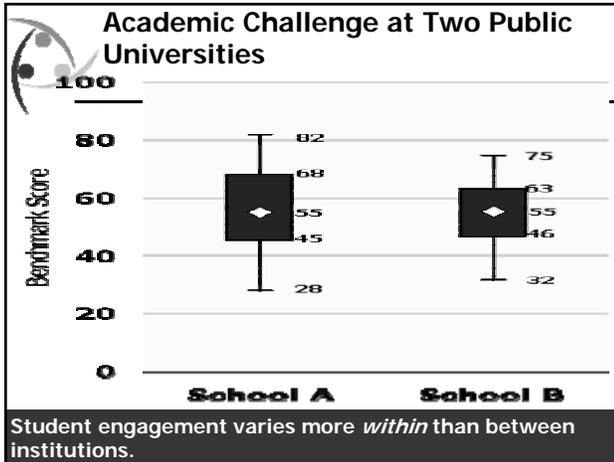
College student surveys that assess the extent to which students engage in educational practices associated with high levels of learning and development

### The Student Engagement Triad

- What students do -- time and energy devoted to educationally purposeful activities
- What institutions do -- using effective educational practices to induce students to do the right things
- Educationally effective institutions channel student energy toward the right activities

### NSSE Benchmarks of Effective Educational Practice



### What have we learned so far?

*Grades, persistence, student satisfaction, and engagement go hand in hand*

### What have we learned so far? NSSE & Graduation Rates

	First-year students*	Seniors*
Academic Challenge	.60	.46
Active & Collaborative Learning	.23	.09
Student Faculty Interaction	.28	.37
Enriching Educational Experiences	.53	.48
Supportive Campus Environment	.38	.26

\*All correlations are significant at  $p < .01$

### Outcome Measures - NSSE & Educational and Personal Gains

(% "very much" or "quite a bit")

Self-Reported Educational and Personal Gains from College	First-Year Students	Seniors
Thinking critically and analytically	81%	87%
Acquiring a broad general education	82%	86%
Working effectively with others	66%	78%
Writing clearly and effectively	72%	77%
Learning effectively on your own	70%	77%
Using computing and information technology	65%	76%
Acquiring job or work-related knowledge and skills	57%	72%
Speaking clearly and effectively	60%	72%
Understanding yourself	60%	66%
Analyzing quantitative problems	55%	65%
Solving complex real-world problems	49%	58%
Understanding people of other racial and ethnic backgrounds	50%	52%
Voting in local, state, or national elections	24%	23%

### What have we learned so far? Diversity Experiences positively related to engagement

Dependent variable	First-year students				Seniors			
	Diversity Density Index	Climate Diversity	In Course-Work	Diversity Press	Diversity Density Index	Climate Diversity	In Course-Work	Diversity Press
<b>Student Engagement</b>								
Academic challenge			+				+	+
Higher order thinking		+	+	+		+	+	+
Active and Collaborative			+	+		+	+	+
Diversity-related activities	+	+	+	+	+	+	+	+
<b>Supportive Campus Env.</b>								
Supportive Campus Env. Interpersonal		+				+		
Support for learning	-	+	+	+		+	+	+
Satisfaction		+				+		
<b>Gains-interpers. Dev.</b>								
Gains - Personal/social		+	+	+	+	+	+	+
<b>Gains-Social Awareness</b>								
Gains-Understanding div.	+	+	+	+	+	+	+	+
Gains -Cont. to community		+	+	+		+	+	+
Gains-Understand self		+	+	+	+	+	+	+

### What have we learned so far? Spirituality, Liberal learning & Student Engagement

- *More students report participating in spirituality enhancing activities*
- *No dampening effect found between participation and liberal learning experience and outcomes*
- *Students who report spiritual practices also participate in broad cross section of collegiate activities*
- *Students at faith-based colleges engage in spiritual practice more, but participate less in having conversations with peers with different beliefs, engage less in deep learning activities*

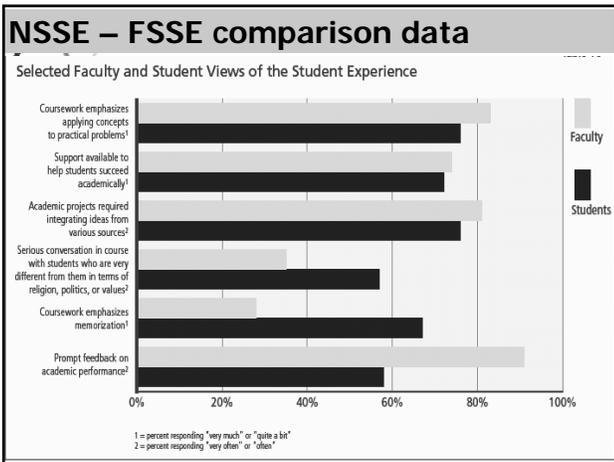
## What have we learned so far?

**Promising findings for First Year Students:**  
**62% "often" or "very often" ask questions in class**  
**58% "often" or "very often" discussed ideas with others outside of class (students, family members)**

- **Is this adequate?**
- **How often do students report these activities on your campus?**
- **What benchmarks for effective practice do you use?**

## FSSE-NSSE Gap Analysis

- About two-thirds (65%) of faculty expect students to spend more than 25 hours preparing for class
- Only about one-fifth (20%) *think* that students spend this amount of time
- Only about one in ten (12%) students *actually* spends this much time

## Prompt Feedback

	Lower Division	Upper Division
 <b>FACULTY</b> gave prompt feedback often or very often	<b>93%</b>	<b>93%</b>
	1 <sup>st</sup> yr. Students	Seniors
 <b>STUDENTS</b> received prompt feedback often or very often	<b>64%</b>	<b>76%</b>

## Course Emphasis

	Lower Division	Upper Division
 <b>FACULTY</b> report very much or quite a bit of emphasis on memorizing	<b>14%</b>	<b>29%</b>
	1 <sup>st</sup> yr. Students	Seniors
 <b>STUDENTS</b> report very much or quite a bit of emphasis on memorizing	<b>65%</b>	<b>63%</b>

## Faculty Priorities and Student Engagement

AVG FACULTY	AVG STUDENT			
	Academic challenge	Active-collab	Diversity experiences	Student-faculty
Academic challenge emphasis	✓	✓	✓	
Active-collab practices	✓	✓	✓	✓
Emphasis on diversity experiences	✓	✓	✓	
Emphasis on higher order thinking	✓	✓	✓	
Importance enriching educ experiences	✓	✓		✓

### Faculty Priorities and Selected Student Outcomes

AVG FACULTY	AVG STUDENT			
	Integrative learning	General education	Personal/social	Practical comp
Academic challenge emphasis	✓	✓		
Active-collab practices	✓	✓	✓	✓
Emphasis on diversity experiences	✓	✓	✓	
Emphasis on higher order thinking	✓	✓		
Importance enriching educ experiences	✓	✓	✓	✓

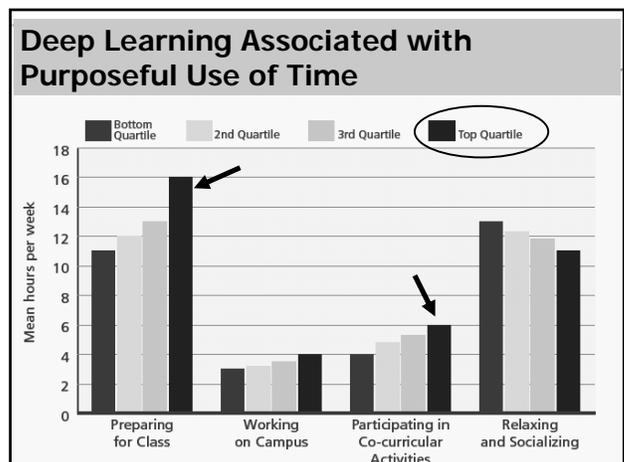
- ### What to make of this?
1. When faculty members emphasize certain educational practices, students engage in them to a greater extent than their peers elsewhere.
  2. Good things go together

- ### What have we learned so far?
- #### Deep learning:
- Attend to the underlying meaning of information as well as content
  - Integrate and synthesize different ideas, sources of information
  - Discern patterns in evidence or phenomena
  - Apply knowledge in different situations
  - View issues from multiple perspectives

- ### Outcome Measures - Deep Learning Activities Clusters
- ◆ Higher-Order Learning— activities that require students to utilize higher levels of mental activity than those required for rote memorization (2b,c,d,e)
  - ◆ Integrative Learning— activities that require integrating acquired knowledge, skills, and competencies into a meaningful whole (1d,e,i,p,t)
  - ◆ Reflective Learning — activities that ask students to explore their experiences of learning to better understand how they learn

### "Deep learning is learning that takes root in our apparatus of understanding, in the embedded meanings that define us and that we use to define the world."

J. Tagg (2003). *The learning paradigm college* (p. 70). Bolton, MA: Anker



## Deep Learning Items: Higher-Order Learning

Students indicate how much (1 = "very little" to 4 = "very much") their coursework emphasizes:

- Analyzing the basic elements of an idea, experience, or theory, such as examining a particular case or situation in depth and considering its components
- Synthesizing and organizing ideas, information, or experiences into new, more complex interpretations and relationships
- Making judgments about the value of information, arguments, or methods, such as examining how others gathered and interpreted data and assessing the soundness of their conclusions
- Applying theories or concepts to practical problems or in new situations



## Deep Learning Items: Integrative Learning

Students indicate how often (1 = "never" to 4 = "very often") they did the following during the current school year:

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



## Deep Learning Items: Reflective Learning\*

Students indicate how often (1 = "never" to 4 = "very often") they did the following during the current school year:

- Learned something from discussing questions that have no clear answers
- Examined the strengths and weaknesses of your own views on a topic or issue
- Tried to better understand someone else's views by imagining how an issue looks from his or her perspective
- Learned something that changed the way you understand an issue or concept
- Applied what you learned in a course to your personal life or work
- Enjoyed completing a task that required a lot of thinking and mental effort



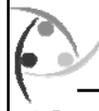
## DEEP Learning Findings

- ◆ Seniors in the social sciences, arts and humanities, professional fields, and education score above biology, while seniors in business, physical sciences, and engineering score below.
- ◆ For higher-order learning, however, seniors in engineering and physical science score higher than on other scales.
- ◆ This advantage is particularly dramatic for engineering students.
- ◆ Data show that no fields are essentially void of such activities, while at the same time every field has room for improvement.



## Partial Correlations

- Strong relationship between gains in personal and intellectual development and deep learning (.58 to .63 across disciplines)
- Moderate relationship between satisfaction and deep learning (.28 to .37 across disciplines)
- Relatively weak relationship between grades and deep learning (.09 to .20 across disciplines)
- Patterns hold across subscales



## Deep learning Implications

- ❖ Encouraging deep approaches to learning is important to student learning and development
- ❖ Student satisfaction is not all about social life and easy academics
- ❖ If grades are to reflect the quality of student learning, then assignments and activities that contribute to grades should require students to employ higher-order, reflective, and integrative thinking skills
- ❖ To foster more deep learning, faculty can:
  - ◆ Ask students to identify and solve unstructured problems that require the use of multiple data sources.
  - ◆ Encourage autonomous, experiential learning by taking students into the field and challenging them to deal with real world complexities.
  - ◆ Progressively increase the intellectual challenge of students' learning experiences sequentially across courses and throughout their degree.

### Best Practices in Using NSSE Results: Institutional Examples

- Concerned about FY-SP retention. Used NSSE to identify conflict between UC image and student experience. Shared with stakeholders to brainstorm around retention.
- Only 50% of FY students reported that they participated in a "learning community," though all were required. UC made LC goals, purpose more explicit, saw rise to 75% in next NSSE.
- UC mission focuses on writing, yet NSSE data did not stand out. Used data to propose new strategies around developmental writing.
- Saw 5% retention boost, over 2 years.

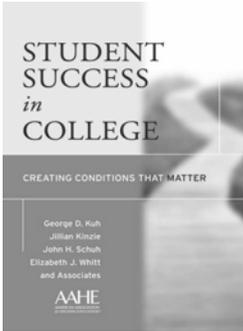


### Best Practices in Using NSSE Results: Institutional Examples

- Lees-McRae College used NSSE results to identify areas in the general education curriculum where more structure was needed, focusing on basic skills in math, writing, reading, and computing before moving on to discipline specific courses.
- University of the South was concerned about low levels of active and collaborative learning among its first year students. NSSE data reinforced faculty members concerns so institution created First Year Program – interactive, stimulating first year seminar courses. In and outside the classroom learning activities.

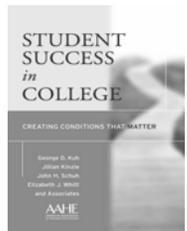
### Inquiring Minds Want to Know...

What does an educationally effective college look like in the 21<sup>st</sup> century?



### Project DEEP

To discover, document and describe what high performing institutions do and how they achieved this level of effectiveness.

### Project DEEP

To discover, document, and describe what high performing institutions do to achieve their notable level of effectiveness.



### Project DEEP Schools\*

\*Selection criteria: Higher-than-predicted graduation rates & Higher-than-predicted NSSE scores

<p><u>Doctoral Extensives</u></p> <ul style="list-style-type: none"> <li>University of Kansas</li> <li>University of Michigan</li> </ul> <p><u>Doctoral Intensives</u></p> <ul style="list-style-type: none"> <li>George Mason University</li> <li>Miami University (Ohio)</li> <li>University of Texas El Paso</li> </ul> <p><u>Master's Granting</u></p> <ul style="list-style-type: none"> <li>Fayetteville State University</li> <li>Gonzaga University</li> <li>Longwood University</li> </ul>	<p><u>Liberal Arts</u></p> <ul style="list-style-type: none"> <li>California State, Monterey Bay</li> <li>Macalester College</li> <li>Sweet Briar College</li> <li>The Evergreen State College</li> <li>Sewanee: University of the South</li> <li>Ursinus College</li> <li>Wabash College</li> <li>Wheaton College (MA)</li> <li>Wofford College</li> </ul> <p><u>Baccalaureate General</u></p> <ul style="list-style-type: none"> <li>Alverno College</li> <li>University of Maine at Farmington</li> <li>Winston-Salem State University</li> </ul>
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## Research Approach

- ◆ **Case study method**
  - ◆ Team of 24 researchers review institutional documents and conduct multiple-day site visits, 2 visits to each school
  - ◆ Observe individuals, classes, events, offices, public space
  - ◆ Individual and group meetings
    - ◆ 2,700+ people, 60 classes, 30 events,
  - ◆ Discover and describe effective practices and programs, campus culture
  - ◆ Interim report, debriefings, final report



## DEEP - Six Shared Conditions

1. “Living” Mission and “Lived” Educational Philosophy
2. Unshakeable Focus on Student Learning
3. Environments Adapted for Educational Enrichment
4. Clearly Marked Pathways to Student Success
5. Improvement-Oriented Ethos - “Positive Restlessness”
6. Shared Responsibility for Educational Quality



## Engaging ALL Students In Learning: Lessons from DEEP

- ◆ CSUMB anchored in an “assets philosophy” – students prior knowledge is used to foster learning
- ◆ UTEP learning communities emphasize active and collaborative learning, structured group presentations, peer evaluation, and meetings outside of class
- ◆ Sewanee emphasizes importance of prompt, detailed, meaningful feedback
- ◆ George Mason, Wheaton focus on upper division experiential learning in the form of internships, field studies, service learning, capstone courses




## Inventory to Enhance Educational Effectiveness





## Discussion and Comments

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National Survey of Student Engagement  
[www.iub.edu/~nsse](http://www.iub.edu/~nsse)