

From Data to Action

Interpreting Complex Student Learning Data and
Creating Data-Driven Plans to Improve Student Learning

Seattle, Washington
January 2009

Wabash National Study details

- 49 institutions
- More than 17,000 students to date
- Longitudinal
 - Follow one class for *at least* 4 years
- Purpose
 - To identify teaching practices and institutional conditions that promote critical thinking, moral reasoning, openness to diversity, leadership, psychological well-being, need for cognition

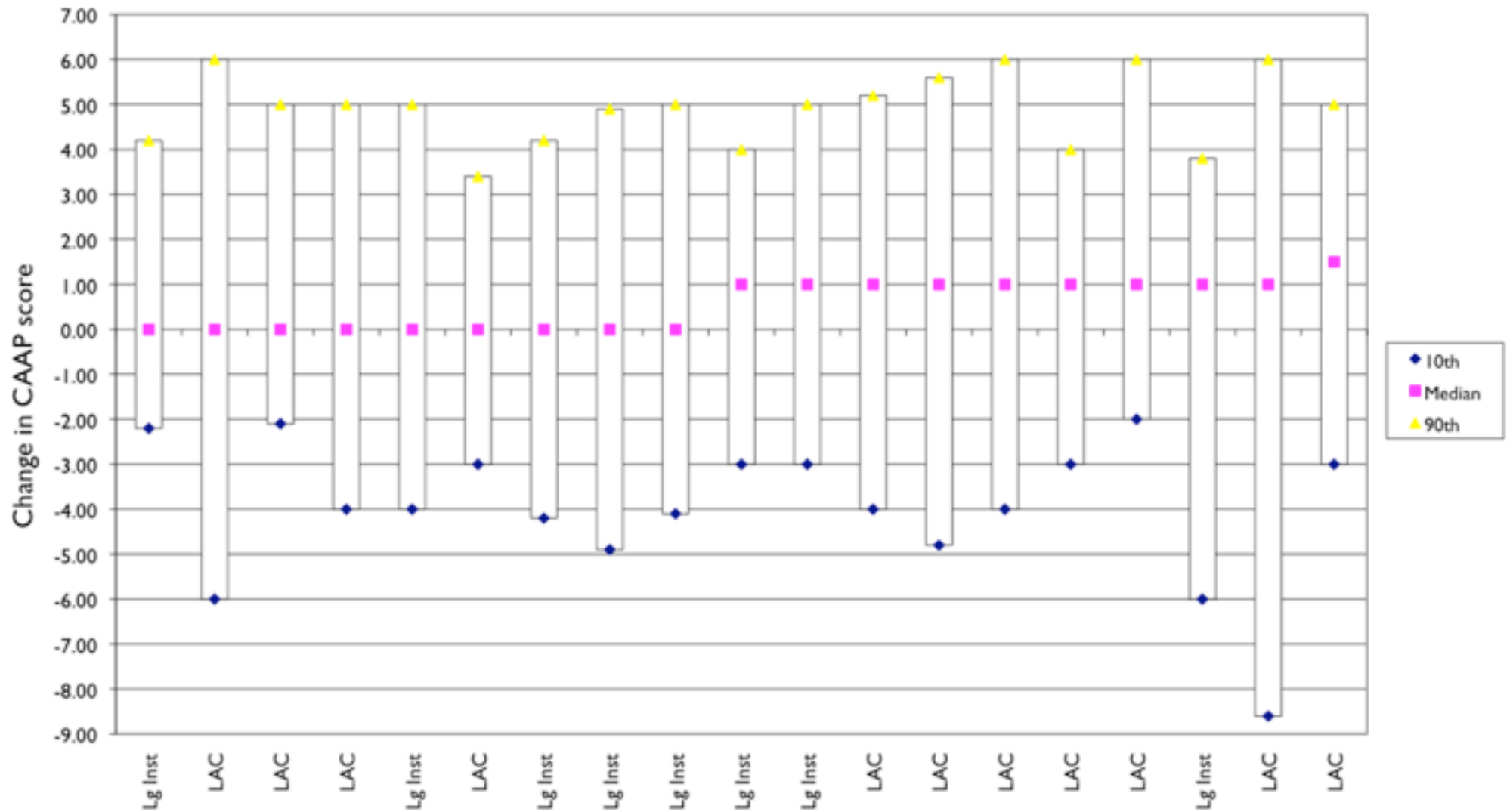
What experiences promote growth on multiple outcomes?



What changes?

	Increase	No Change	Decline
Critical Thinking	✓		
Contribution to Science			x
Contribution to the Arts			x
Political/Social Involvement			x
Leadership		—	
Academic Motivation			x
Well Being		—	
Literacy		—	
Openness to diversity/challenge			x
Moral Reasoning	✓		
Need for Cognition		—	
Universality/Diversity		—	

Change in CAAP Critical Thinking Test score



**What practices and
conditions make a difference?**

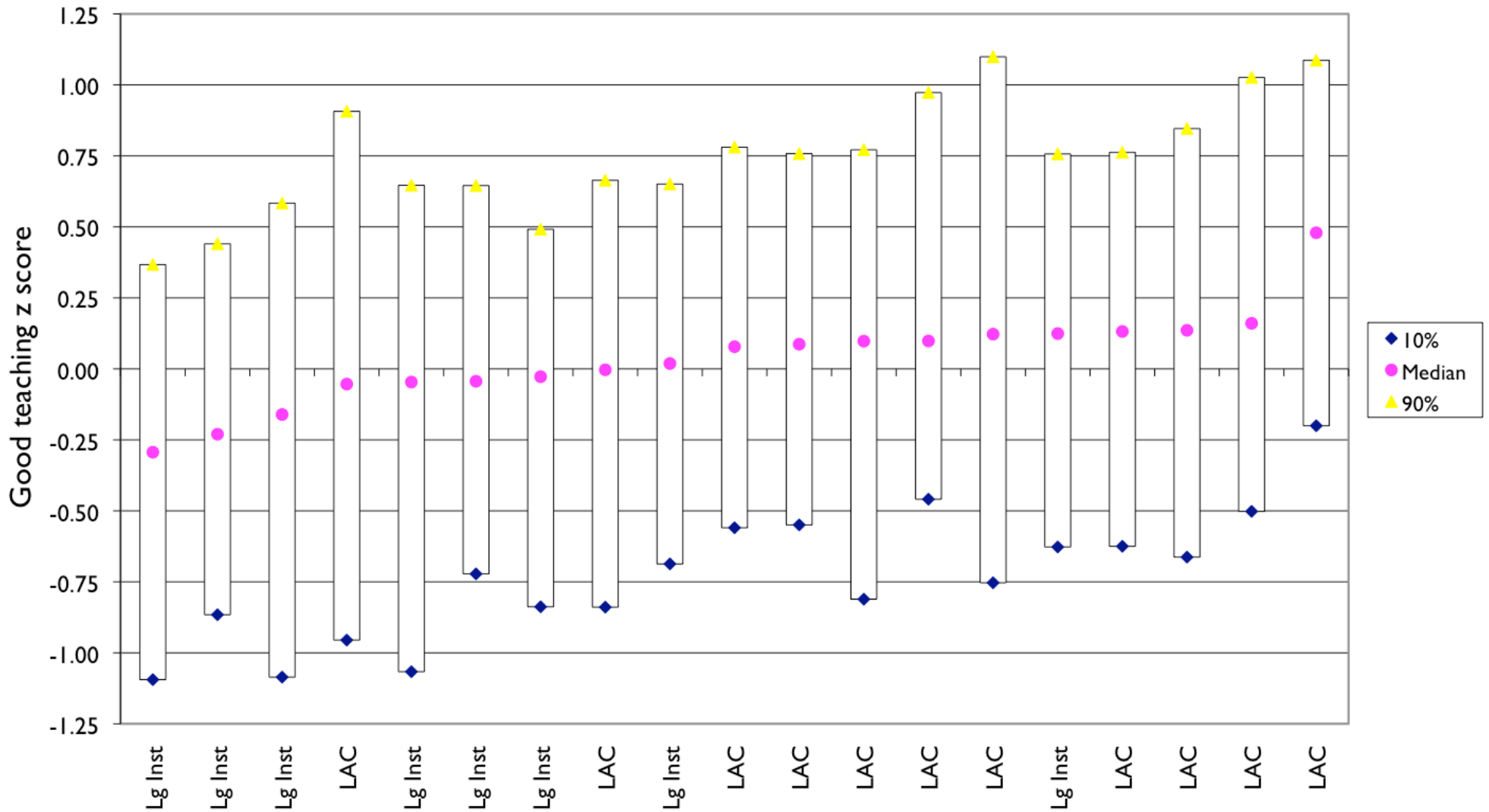
High-impact practices and conditions

- **Good Teaching and High-Quality Interactions with Faculty**
 - Faculty interest in teaching and student development
 - Organization, clarity, prompt feedback
 - Faculty enthusiasm for teaching
- **Academic Challenge and High Expectations**
 - Hard work, challenging assignments and interactions
- **Diversity Experiences**
 - Meaningful interactions

	Good Teaching	Academic Challenge	Diversity Experiences
Critical Thinking	✓		
Contribution to Science			
Contribution to the Arts			✓
Political/Social Involvement		✓	✓
Leadership	✓	✓	
Academic Motivation	✓	✓	✗
Well Being	✓	✓	✗
Literacy	✓	✓	✓
Openness to diversity/challenge	✓	✓	✓
Moral Reasoning	✓	✓	✓
Need for Cognition	✓	✓	✓
Universality/Diversity	✓	✓	✓

	<i>Strong</i>	<i>Moderate</i>	<i>Weak</i>
Good Teaching	23%	76%	1%
Academic Challenge	19%	81%	
Diversity Experiences	5%	82%	14%

Good Teaching and High Quality Interactions with Faculty



Task

1. Audit

- Review and make sense of the evidence
 - What story do the data tell?

2. Communication

- How will you share this story with campus constituencies?

3. Action

- What practical consequences follow from the data?

Documents

- Audit/Communication/Action questions to guide discussion
- Typical University fact sheet
- First-year outcomes data for Typical U
- Information on good practices at Typical U
- Action Plan worksheet for groups to complete

Audit/Communication/Action questions

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Responding to Data about Student Learning and Student Experiences

- 1) **Audit** – Review the Typical University documents and consider the following questions:
 - What are Typical University’s structural properties?
 - How do these properties relate to the in- and out-of-class teaching and learning environment as it is experienced by African American, Latino, and white students?
 - What do the data reports indicate?
 - How much and in what direction are Typical University students changing over the course of the first year?
 - Are these differences consistent for African American, Latino, and white students?
 - Is the level of engagement and the quality of student experience similar for African American, Latino, and white students?
 - What good practices and conditions are white students experiencing at higher levels than African American and Latino students?
 - What good practices and conditions are African American and Latino students experiencing at higher levels than white students?
 - Are there any good practices and conditions that African American students are experiencing at lower levels than Latino students?
 - Are there any good practices and conditions that Latino students are experiencing at lower levels than African American students?

Typical University fact sheet

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Typical University Factsheet

- Typical University is a midsized private university with an undergraduate population of 6,000.
 - Over 95% of all students are under the age of 24.
 - Sixty percent of the students are female and 40% are male.
 - Twelve percent of the student body identifies itself as African American, and 6% of the student body self-identifies as Latino.
- Typical University's endowment is \$140 million.
 - Total expenses for students living on campus are \$39,000/year.
 - About 90% of TU students receive some form of financial aid, and tuition is heavily discounted.
 - Eleven percent of TU students are eligible for Pell grants.
- The average combined math and critical reading SAT score is 1150.
 - The average score for African American students is 900.
 - The average score for Latino students is 1100.
 - The average score for white students is 1200.
- Seventy-five percent of first-year students were in the top 25% of their high school class.
- The largest majors at TU are:
 - Business (including majors in accounting, finance, and management)

First-year outcomes data for Typical U

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Typical University – Outcome Measures by Race/Ethnicity

Outcome Measure	Race/Ethnicity	Entering		End of the First Year		Change ¹	Magnitude ²
		Mean	SD	Mean	SD		
CAAP Critical Thinking Test <i>Measures students' skills in clarifying, analyzing, evaluating, and extending arguments.</i> Scores range from 40 (low) to 80 (high).	Overall	62.9	5.4	63.3	5.9	0.36*	No change
	African American	57.9	5.0	58.4	5.1	0.52	Small increase
	Latino	61.0	5.4	61.5	6.0	0.51	No change
	White	63.8	5.0	64.1	5.6	0.32*	No change
Defining Issues Test – N2 score <i>Measures the degree to which students use ideals and principles when thinking through moral dilemmas.</i> Scores range from 0 (low) to 95 (high).	Overall	34.9	16.2	38.4	16.0	3.47*	Small increase
	African American	27.2	18.1	27.5	13.7	0.26	No change
	Latino	32.4	14.2	35.2	15.5	2.74*	Small increase
	White	36.0	15.8	39.9	15.7	3.91*	Small increase

Information on good practices at Typical U

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Typical University – Effective Practices and Experiences by Race/Ethnicity

Effective Practices and Experiences	Race/Ethnicity	Strong	Moderate	Weak
Good Teaching and High-Quality Interactions with Faculty	Overall	23%	76%	1%
	African American	13%	85%	2%
	Latino	28%	72%	0%
	White	24%	75%	1%
<i>Faculty Interest in Teaching and Student Development</i>	Overall	60%	31%	8%
	African American	45%	39%	16%
	Latino	66%	29%	6%
	White	63%	30%	7%
<i>Prompt Feedback</i>	Overall	26%	63%	11%
	African American	21%	62%	17%
	Latino	23%	69%	8%
	White	28%	62%	10%

Information on good practices at Typical U

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Typical University – Effective Practices and Experiences from the Wabash National Study

In our research thus far, we have found that three broad categories of teaching practices and institutional conditions predict growth on a wide variety of student outcomes including leadership, openness to diversity and challenge, political and social involvement, and positive attitude toward literacy. These categories of good teaching practices and supportive institutional conditions correspond to scales empirically derived from survey questions in the Wabash National Study:

- **Scale 1 – Good Teaching and High-Quality Interactions with Faculty**, which includes the following subscales:
 - Faculty interest in teaching and student development
 - Prompt feedback
 - Quality of nonclassroom interactions with faculty
 - Teaching clarity and organization
- **Scale 2 – Academic Challenge and High Expectations**, which includes the following subscales:
 - Academic challenge and effort
 - Frequency of higher-order exams and assignments
 - Challenging classes and high faculty expectations
 - Integrating ideas, information, and experiences
- **Scale 3 – Diversity Experiences**, which includes the following subscales:
 - Meaningful interactions with diverse peers – I
 - Meaningful interactions with diverse peers – II

Action Plan worksheet for groups to complete

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TYPICAL UNIVERSITY – ACTION PLAN

Issue description – Choose one issue that you hope to address in the next 12 months.

Data that describe the issue:

Communication – How will you disseminate data about student learning and experiences related to the issue described above at your institution?