

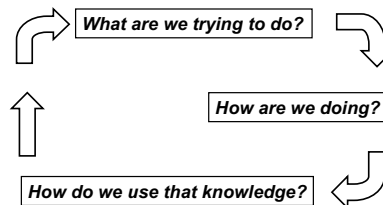
Does Your Assessment Information Help You Plan?

Ephraim Schechter

IUPUI Assessment Symposium
Indianapolis, IN
November 4, 2007

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Assessment is...



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How do we use that knowledge?

Assessment is for...

- Program planning and improvement
 - To inform decisions about goals, curriculum, pedagogy, budgeting, future plans, etc.
- Accountability reporting – “Telling the story “
- Keep planning / improvement first!
 - Watch out for “accountability thinking” that says “Assessment = reporting”

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We get information from students’...

- Curricular work
 - Course, test, & assignment grades
 - Scores on standardized tests
 - Content of papers, reports, projects, capstones, student portfolios, theses/dissertations
- Self-reports & opinions
 - Surveys & interviews
- Student records
 - Enrollment patterns
 - Persistence/graduation patterns

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In this workshop we’ll look at...

- Tweaking/modifying these familiar sources in order to get more effective planning information
- Integrating assessment information and planning processes

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Brainstorming: Sources of Information

- Brainstorming Handout #1
 - Possible sources of information for each outcome from (or related to) these courses?
- What’s your experience?
 - What sources of information about student learning do your programs use for planning & improving courses & curriculum?

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Tweaking / modifying familiar sources of information

- Clarifying grades
- Do standardized tests & surveys fit?
- Re-evaluating student work samples
- Patterns in student records

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Clarifying grades

Grades may...

- Collapse information about several learning outcomes
- Reflect other aspects of student performance

	Student 1	Student 2	Student 3	Student 4	
Outcome 1	A	A	B	A	A-
Outcome 2	C	B	D	C	C
Outcome 3	B	A	B	A	B+
	B	A-	C	B+	

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Clarifying grades

We often hear: "I know good work when I see it"

- How? What do you look for?
- Sorting into piles for grading = implicit rubric
 - Watch out for the ineffability trap – "What we do can't be measured"

An outcomes based approach to grading

- Separate grades/ratings for each outcome/aspect
- Rubrics to make the categories explicit

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Brainstorming: Clarifying grades

- Brainstorming Handout #2:
 - What do the students' grades tell you about what's happening and what changes might be needed?
 - What do the outcomes ratings tell you?
 - What do the grades and the outcomes ratings together tell you?
 - What other information might you need to understand what these data tell you?

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Do standardized tests/surveys fit?

- Knowledge / skills / abilities, e.g.:
 - MAPP, CAAP, BASE, CLA
 - MFT/ACAT
 - ACS area exams, ACTFL language exams, FE, PRAXIS
- Self-ratings and opinion, e.g.:
 - Institution/system-wide surveys
 - CSS, CSEQ/CCSEQ
 - NSSE/CCSSE, YFCY
- Benchmarking vs. fit
- Can you identify the sources of students' knowledge / skills / abilities?

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Re-evaluating student work samples

- Focus on program outcomes
- Rubrics for clarity/consistency
- Capstones & senior projects
- Career & course-based portfolios
- Can you identify the sources of students' knowledge / skills / abilities?

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Brainstorming: Student opinion & work samples

Brainstorming Handouts #3a & 3b

- Pick one
 - Standardized test (#3a)
 - Student work samples in a portfolio (#3b)
- What do these data suggest about what's happening and what changes might be needed?
- What other information might you need to understand what the data tell you?

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Patterns in student records

Enrollment / persistence / graduation

- Course-taking patterns
- "Student flow"

How are they related to outcomes-assessment results?

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Integrating assessment information and planning processes

- Assessment audits: What information is available?
- Using assessment results in planning
- Assessment results and performance indicators

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Assessment audits: What information is available

- Audits ⇒ overviews
 - Institution-wide: Methods in use
 - Programs * methods
 - Courses * outcomes
- Information from discipline accreditations

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Using assessment results in planning

- Planning level
 - Department meetings
 - Annual reports
 - Program review
 - Strategic planning
- Use assessment results to
 - Suggest changes/improvements
 - Support requests

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Using assessment results in planning

- Different levels have different issues
 - "Do departments/programs:
 - understand our broader issues?"
 - provide what we need for our planning?"
 - "Is anybody up there listening to us?"
- "Draw from the top"
 - Embed assessment in
 - Curriculum planning
 - Annual reports, program reviews
 - New initiatives
 - Feedback! – "Yes, we heard you"

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Assessment results and performance indicators

- Performance indicators for
 - “Dashboard” overviews
 - Comparison & benchmarking
- Assessment results as performance indicators
 - Rough guides: different measures, common scale
- Indicators about the assessment process
 - How’s it going? (Audit: who’s doing what, when?)
 - How does it affect quality?

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Brainstorming: Assessment & planning

Brainstorming Handout #4

- What do these results tell you about the program?
- What actions do they suggest?
 - At the course level
 - At the curriculum level
 - For the program’s strategic plans

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Can we use imperfect data for planning & improvement?

- Assessments (usually) aren’t full-fledged random-assignment tightly-controlled experiments – how can they tell us what to keep or change?
- The alternative isn’t “no planning at all” – it’s “the ad-hoc process we use now”

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It’s not always about change

Assessment is for... Braggs as well as problems

- Positives
 - What’s going the way we want
 - Bragging points
- As well as negatives
 - Problems
 - Things that need attention
- Most results are affirmations!

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Homework

- What information does your program / department / department-group use for planning & improvement?
- How does your assessment process support that? Add to it? Does the assessment process provide sufficient detail for effective planning?
- What changes in your assessment process would help it support your planning process?
- What changes in your planning process would make better use of your assessment information?

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Finishing up

The handout is online at

http://higheredassessment.com/presentations/iupui07_planning.pdf

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Resources & References

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General resources

- **Internet Resources for Higher Education Outcomes Assessment**

- Large meta-list of web links, from North Carolina State University
- <http://www2.acs.ncsu.edu/UPA/assmt/resource.htm> -- or simply Google “outcomes assessment”

- **Introductions to assessment**

- The “Assessment Handbooks” section of *Internet Resources for Higher Education Outcomes Assessment* has many institutions’ brief introductions to assessment.
- L. Suskie (2004). *Assessing Student Learning: A common sense guide*. Anker Publishing, Bolton MA.
- B. E. Walvoord (2004). *Assessment Clear and Simple: A practical guide for institutions, departments, and general education*. Jossey-Bass Publishers, San Francisco.

References

- **Slide 3:** How do we use that knowledge?

- Linda Suskie, *What is “Good” Assessment? A Synthesis of Principles of Good Practice*. From “What is ‘good’ assessment? A new model for fulfilling accreditation expectations,” presented at the First Annual International Assessment & Retention Conference, Phoenix AZ, June, 2006. (PDF file available for download at <http://planning.iupui.edu/508.html>.)
- Jeremy Penn, *Assessment for “Us” and Assessment for “Them.” InsideHigherEd*, June 2007, <http://www.insidehighered.com/views/2007/06/26/penn>.
- See pp. 5-6 for notes from regional accreditors' policies, standards, & criteria about using assessment results for planning and improvement.

- **Slides 8 & 9:** Clarifying grades

- See the “Grades as outcomes assessment” section of *Internet Resources for Higher Education Outcomes Assessment* (<http://www2.acs.ncsu.edu/UPA/assmt/resource.htm>).
- Suskie, *Assessing Student Learning*. Pp. 6-8, What is the difference between assessment and grading?
- M. E. Huba & J. E. Freed (2000). *Learner-Centered Assessment on College Campuses: Shifting the Focus from Teaching to Learning*. Allyn & Bacon, Needham Heights MA.
- B. E. Walvoord & V. J. Anderson (1998). *Effective Grading: A Tool for Learning and Assessment*. Jossey-Bass Publishers, San Francisco.

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- The “Assessment Rubrics” section of *Internet Resources for Higher Education Outcomes Assessment* has links to examples of assessment rubrics.
- Examples of rubrics for theses and dissertations
 - B. Lovitts (2007). *Making the Implicit Explicit: Creating performance expectations for the dissertation*. Stylus Publishing, Sterling VA.
 - The *sample program assessment plans & rubrics* on the North Carolina State University Graduate School's *Program Evaluation* website (<http://www.fis.ncsu.edu/grad%5Fpublicns/program%5Freview/>; the individual program plans are pdf files).

● Slide 11: Do standardized tests/surveys fit?

- Suskie, *Assessing Student Learning*. Chapter 13, Selecting a published instrument.
 - Also see Trudy Banta's recent online articles about risks in relying too heavily on standardized tests for either benchmarking or program improvement:
 - A warning on measuring learning outcomes, *InsideHigherEd*, January 2007, <http://www.insidehighered.com/views/2007/01/26/banta>
 - Can assessment for accountability complement assessment for improvement? *Peer Review*, Spring 2007, http://www.aacu.org/peerreview/pr-sp07/pr-sp07_analysis2.cfm.
- Tests of students' knowledge, skills, & abilities, such as:
 - General education
 - MAPP (*Measure of Academic Proficiency & Progress*, successor to the Academic Profile. See <http://www.ets.org/>)
 - CAAP (*Collegiate Assessment of Academic Proficiency*, <http://www.act.org/caap/>)
 - College BASE (<http://arc.missouri.edu/collegebase/>)
 - CLA (Collegiate Learning Assessment Project, http://www.cae.org/content/pro_collegiate.htm)
 - Discipline-specific
 - From major test publishers
 - MFT (*Major Field Tests*, successor to the MFAT. See <http://www.ets.org/>)
 - ACAT (*Area Concentration Achievement Tests*, <http://www.collegeoutcomes.com/>)
 - PRAXIS (for education programs, see <http://www.ets.org/>),
 - From disciplinary associations
 - FE (*Fundamentals of Engineering*, <http://www.ncees.org/exams/fundamentals/>)
 - ACTFL's language exams, <http://www.actfl.org/i4a/pages/index.cfm?pageid=3642>
 - American Chemical Society's tests for various content areas, <http://www4.uwm.edu/chemexams/>
- Surveys of students' self-ratings and opinions, such as:
 - CSS (*College Senior Survey*, previously called the College Student Survey, <http://www.gseis.ucla.edu/heri/css.html>)
 - CSEQ (*College Student Experiences Questionnaire*, http://www.indiana.edu/~cseq/cseq_generalinfo.htm) & CCSEQ (*Community College Student Experiences Questionnaire*, <http://coe.memphis.edu/CSHE/CCSEQ.htm>)
 - NSSE (*National Survey of Student Engagement*, <http://nsse.iub.edu/>) & CCSSE (*Community College Survey of Student Engagement*, <http://www.ccsse.org/>)

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- YFCY (Your First College Year, <http://www.gseis.ucla.edu/heri/yfcyoverview.php>)
- **Slide 12:** Re-evaluating student work samples
 - *Ball State University Assessment Workbook*, chapter 5: Using Performance-Based Measures for Assessment, <http://web.bsu.edu/IRAA/AA/WB/contents.htm>
 - A. Driscoll & S. Wood (2007). *Developing Outcomes-Based Assessment for Learner-centered Education: A faculty introduction*. Stylus Publ., Sterling VA. See especially chapters 9 (Reviewing and analyzing student evidence, pp 176-200) & 10 (Faculty responses to assessment of student evidence, pp 201-219).
 - Capstone courses
 - From Skidmore College's *Assessment Handbook*, http://www.skidmore.edu/administration/assessment/H_Capstone_courses1.htm
 - Note: The attached bibliography includes AACU's examples of capstone courses. AACU's page has moved to <http://www.aacu.org/issues/curriculum/capstone.cfm>.
 - In *Assessment practices in undergraduate mathematics* (<http://maa.org/saum/maanotes49/toc.html>), scroll down to two quite different capstone approaches in the articles by Peltier and Frantz.
 - These workshop notes on *Creating and Teaching Capstone Courses*, from Agnes Scott College, include examples, issues, and references (<http://ctl.agnesscott.edu/resources/CapstoneCoursesMaterials.htm>; see the note above about the old link to AACU's examples).
 - Portfolios
 - *Elon University* description of types of student-made portfolios, <http://www.elon.edu/students/portfolio/what.asp>
 - *Rose-Hulman Institute of Technology*, *RosE Portfolio system*, <http://www.rose-hulman.edu/irpa/reps/>. Student-selected work examples as part of course assessment. See especially the *student* help manual (*pdf* file). Note that students identify where in an example the best evidence for a particular outcome can be found.
 - *Truman State University Portfolio Project*, <http://assessment.truman.edu/components/portfolio/>. Assessing liberal arts program with student-selected work examples and end-of-career reflections. See annual reports (*pdf* files), *Instructions for Students*, and *Faculty Guidelines*.
 - The "Portfolio Assessment" section of *Internet Resources for Higher Education Outcomes Assessment* has more examples (<http://www2.acs.ncsu.edu/UPA/assmt/resource.htm>)
 - Courses* Outcomes Matrix
 - Utah State University's academic department assessment websites show several ways to map the connections between learning outcomes and specific courses (<http://aaa.usu.edu/Assessment/AssessmentLinks.asp>). Compare, for example,
 - *Chemistry's* matrix indicating which courses contribute to each outcome (*pdf* file),
 - *Biology's* table listing the courses that contribute to each degree program's outcomes,
 - *History's* table showing how each faculty member's courses contribute to each outcome (*pdf* file), and
 - *Biological Engineering (BIE)'s* matrix indicating *the extent to which* each course contributes to an outcome.

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- **Slide 16:** Assessment audits: What information is available?
 - Walvoord, *Assessment clear and simple*, pp 34-39 & 55-58.
 - Florida Atlantic University's report on their Institutional Effectiveness Inventory (<http://iea.fau.edu/inst/air00.pdf>) includes inventory (audit) forms and examples of different ways to display results for quick overviews.
 - Examples of *programs * methods* matrices:
 - Skidmore College, <http://www.skidmore.edu/administration/assessment/AssessMethods2005.htm>
 - SUNY-Brockport, <http://www.brockport.edu/assessment/academic-department-program-assessment/methods/assessment-methods.html>
 - See Slide #12 for examples of *courses * outcomes* matrices.
 - The “Specialized/Professional Accrediting Associations” section of *Internet Resources for Higher Education Outcomes Assessment* has links to many discipline-specific accreditors' assessment requirements (<http://www2.acs.ncsu.edu/UPA/assmt/resource.htm>)

Slide 17: Using assessment results in planning

- In department meetings
 - From Arkansas Tech University's assessment FAQ (http://ir.atu.edu/Assessment_Info/assessment-faq/assessment-dept-faq.htm). See question #5.
 - Example of using assessment results in department meetings and retreats: Utah State University, Department of Computer Science (<http://www.cs.usu.edu/assessment.html?id=14>)
- In periodic program review
 - *Institutional effectiveness measures* for Florida International University's periodic program review process explicitly include learning outcomes and results (in <http://www.fiu.edu/~opie/progreview.htm>, select *measurable indicators* and then the table of *Program measures, outcomes, and data sources*)
- In strategic planning: Outcomes assessment
 - ...as a strategic initiative
 - University of Baltimore (<http://www.ubalt.edu/template.cfm?page=53>)
 - Westminster College (http://www.westminster.edu/acad/oaac/assess_mission.cfm)
 - ...as a source of evidence for progress towards a strategic initiative:
 - University of Maryland, College of Education (<http://www.education.umd.edu/stratPlanUpdates/coePlanUpdate05.html>, see Initiative Two, Item #4)
 - ...as a source of proposed changes:
 - University of North Carolina at Charlotte (<http://www.provost.uncc.edu/Assessment/Planning.htm>)

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Slide 19: Assessment results and performance indicators

- *Dashboard* indicators monitor the general health of an institution, a unit within the institution, or of a process
 - Rubin, B (1999) Toward a balanced scorecard for higher education: Rethinking the college and university excellence indicators framework. (*Hunter Group: Higher Education White Papers*, <http://www.winona.edu/air/documents/score.pdf> [pdf file])
 - Rose-Hulman Institute of Technology's comprehensive planning document has interesting graphic displays which include some student-opinion data (<http://www.winona.edu/air/documents/Comprehensiveplanningdocument.pdf>)
 - University of Wisconsin Oshkosh (<http://www.uwosh.edu/assessment/>, see *Grids showing status of program assessment plans*)
-

Regional accreditors' policies, standards, & criteria

- **Middle States Association of Colleges and Schools: Commission on Higher Education (MSA-CHE)**
 - Assessment information should be available to and used by those who develop institutional goals and carry out strategies that will improve teaching and learning.
 - Paraphrased from *Characteristics of Excellence in Higher Education: Eligibility Requirements and Standards for Accreditation*, <http://www.msche.org/publications/CHX06060320124919.pdf>. See especially *Standards 7, Institutional Assessment* and *14, Assessment of Student Learning*.
- **New England Association of Schools and Colleges: Commission on Institutions of Higher Education (NEASC-CIHE)**
 - The results of evaluation are used systematically for improvement and to inform institutional planning, especially as it relates to student achievement and resource allocation.
 - From *Standards for Accreditation*, http://www.neasc.org/cihe/standards_for_accreditation_2005.pdf. See *Standard 2.7, Institutional Effectiveness*.
- **North Central Association of Colleges and Schools: Higher Learning Commission (HLC)**
 - ...while strong assessment should provide data that satisfy any externally mandated accountability requirements, its effectiveness in improving student learning relies on its integration into the organization's processes for program review, departmental and organization planning, and unit and organizational budgeting.
 - From *Handbook of Accreditation*, <http://www.ncahlc.org/download/Handbook03.pdf>. See especially *The Commission Statement on Assessment of Student Learning* (p 3.4-2).
- **Northwest Association of Schools and Colleges: Commission on Colleges and Universities (NWCCU)**
 - The institution uses the results of its systematic evaluation activities and ongoing planning processes to influence resource allocation and to improve its instructional programs, institutional services, and activities [and] provides evidence that its assessment activities lead to the improvement of teaching and learning.
 - From *Accreditation Standards*, <http://www.nwccu.org/Standards and Policies/Accreditation Standards/Accreditation Standards.htm>. See *Standards 1.B, Planning and Effectiveness* and *2.B. Educational Program Planning and Assessment*.

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- **Southern Association of Colleges and Schools: Commission on Colleges (SACS-COC)**
 - The institution identifies expected outcomes for its educational programs (including student learning outcomes for educational program) and its administrative and educational support services; assesses whether it achieves these outcomes; and provides evidence of improvement based on analysis of those results.
 - From *Principles Of Accreditation: Foundations for Quality Enhancement, Interim edition*, [http://www.sacscoc.org/pdf/2007 Interim Principles complete.pdf](http://www.sacscoc.org/pdf/2007_Interim_Principles_complete.pdf). See *Comprehensive Standard 3.3.1, Institutional Effectiveness*.

- **Western Association of Schools and Colleges (WASC)**
 - **The Accrediting Commission for Community and Junior Colleges (ACCJC)**
 - The institution uses assessment results and ongoing and systematic evaluation and planning to refine its key processes and improve student learning.
 - From *Accreditation Reference Handbook*, [http://www.accjc.org/documents/Accreditation Reference Manual Rev Aug 31 2006.pdf](http://www.accjc.org/documents/Accreditation_Reference_Manual_Rev_Aug_31_2006.pdf). See especially *Standards I.B, Improving Institutional Effectiveness and II, Student Learning Programs and Services*.

 - **The Accrediting Commission for Senior Colleges and Universities (ACSCU)**
 - Assessment results are used to establish priorities and to revise institutional purposes, structures, and approaches to teaching, learning, and scholarly work. As much emphasis should be placed on how the institution is using the conclusions it has drawn to improve itself as on the information itself.
 - Paraphrased from *Handbook of Accreditation*, [http://www.wascenior.org/wasc/Doc_Lib/2001 Handbook.pdf](http://www.wascenior.org/wasc/Doc_Lib/2001_Handbook.pdf) and *Evidence Guide: A Guide To Using Evidence In The Accreditation Process*, http://www.wascenior.org/wasc/Doc_Lib/Evidence_Guide.pdf. See especially *Standard 4, Creating an Organization Committed to Learning and Improvement*.

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Brainstorming #1: Sources of Information (Slide #6)

Here are some "critical thinking" outcomes that a college/university might use, and some courses that the institution might offer.

Discuss

How could you get information about these outcomes from these courses (or from activities related to the courses)?

What's your experience? What sources of information about student learning do your programs use for planning/improving courses and curricula?

Outcomes

When faced with conflicting arguments or data, the student:

1. Describes the problem or dilemma to be resolved
2. Presents a well-developed critique of the arguments
3. Explicitly describes her own assumptions
4. Uses primary source information to buttress her points with examples
5. Predicts the consequences of alternative resolutions

Courses

Forest Management 114: Introduction to Ecology

History 252: Modern American History

General Ed 302: Research & Communication for the Social Sciences

Music 403: Music & Drama

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Brainstorming #2: Clarifying grades (Slide #10)

Outcomes (from Brainstorming #1)

When faced with conflicting arguments or data, the student:

1. Describes the problem or dilemma to be resolved
2. Presents a well-developed critique of the arguments
3. Explicitly describes her own assumptions
4. Uses primary source information to buttress her points with examples

Senior	ANTH 443: Environmental Anthropology	Prof. Chu
Seminars	ANTH 457: Cross-Cultural Perspectives on Women	Prof. Ramos
	ANTH 460: Anthropology of Religion	Prof. Edwards

Results

From group evaluation of senior research papers sampled across courses

Rating scale:

3. Exemplary
2. Adequate
1. Insufficient

	ANTH 443	ANTH 457	ANTH 460
Outcomes (average rating)			
1.	2.2	2.6	2.2
2.	2.1	2.3	2.2
3.	1.3	1.6	1.4
4.	2.5	2.8	2.6

Grades (frequency)

A	4	1	5
B	3	2	3
C	5	3	2
D	1	3	2
F	0	1	0
Average	2.8	1.9	2.9
# of students	13	10	12

Page 2 has charts and a verbal description of these data

Discussion Questions

What do the students' grades tell you about what's happening and what changes might be needed?

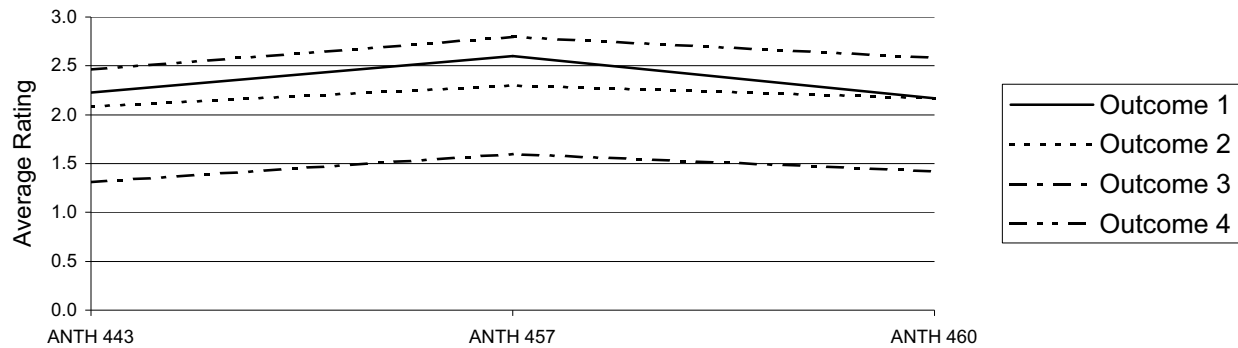
What do the outcomes ratings tell you?

What do the grades and the outcomes ratings *together* tell you?

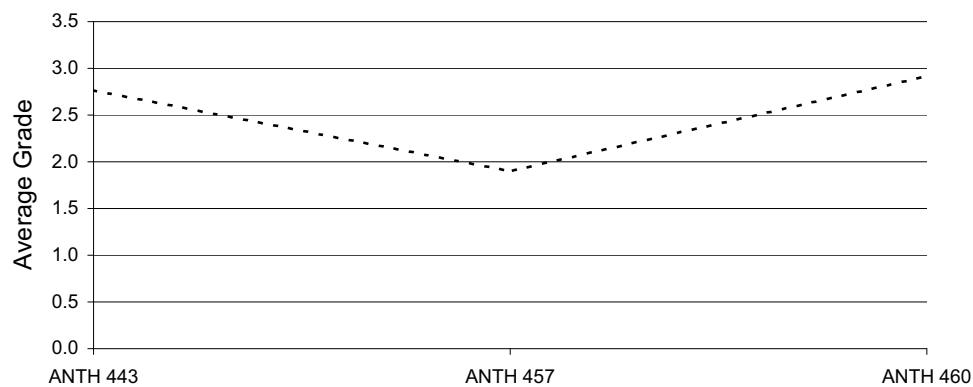
What other information might you need to understand what these data tell you?

Brainstorming #2: Clarifying grades (Slide #10)

Outcomes



Grades



Some things we can see in these data

The outcomes ratings have the same general pattern in all three courses

The outcomes ratings and the grades give different pictures of ANTH 457 -- it has the lowest average grades but the highest outcomes ratings

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Brainstorming #3a: Standardized Tests (Slide #13)

ETS MAPP (Measure of Academic Proficiency & Progress [replaces ETS' Academic Profile])

Online standard (2 hr) version

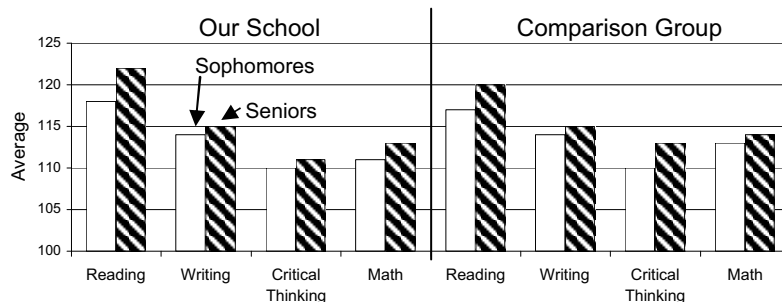
Our School: 6,500 UG; 1463 soph, 1625 sr; 10% samples (146, 163), 80% participation (117, 130)

Average scaled scores

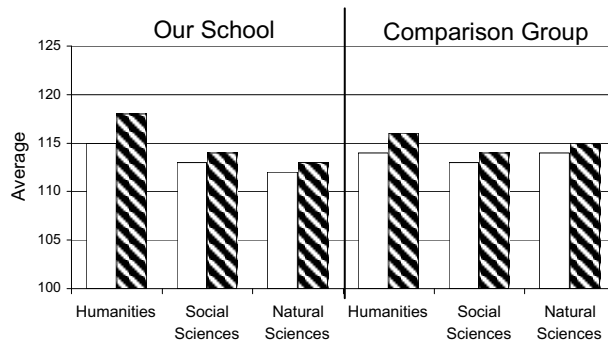
compared to criterion group of 14 selected baccalaureate institutions participating in MAPP

		Our School		Comparison Group	
		Sophomores	Graduating Seniors	Sophomores	Graduating Seniors
Skills	Reading	118	122	117	120
	Writing	114	115	114	115
	Critical Thinking	110	111	110	113
	Math	111	113	113	114
Context	Humanities	115	118	114	116
	Social Sciences	113	114	113	114
	Natural Sciences	112	113	114	115

ETS MAPP Skill Scores



Context Scores



Discussion questions and a verbal description of these data are on Page 2

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Page 2

Brainstorming #3a: Standardized Tests (Slide #13)

Some things we can see in these data

The "Skills" scores have the same general pattern for Our School and the Comparison Group

In the Comparison Group, the improvement from sophomores to seniors is greatest for reading and critical thinking. For Our School, it's greatest for reading *but not* for critical thinking.

The sophomore-to-senior improvement in the Humanities context score is greater for Our School than for the Comparison Group

Discussion Questions

What do these data suggest about what's happening and what changes might be needed?

What other information might you need to understand what these data tell you?

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Brainstorming #3b: Student Work Samples (Slide #13)

Faculty ratings of student work samples, for general education outcomes related to CT

From career portfolio: Student-selected samples to illustrate critical thinking

Faculty-selected, randomly sampled across lower-division gen-ed courses with CT outcomes

Faculty-selected, randomly sampled from capstone courses in majors

Outcomes (from Brainstorming #1)

When faced with conflicting arguments or data, the student:

1. Describes the problem or dilemma to be resolved
2. Presents a well-developed critique of the arguments
3. Explicitly describes her own assumptions
4. Uses primary source information to buttress her points with examples

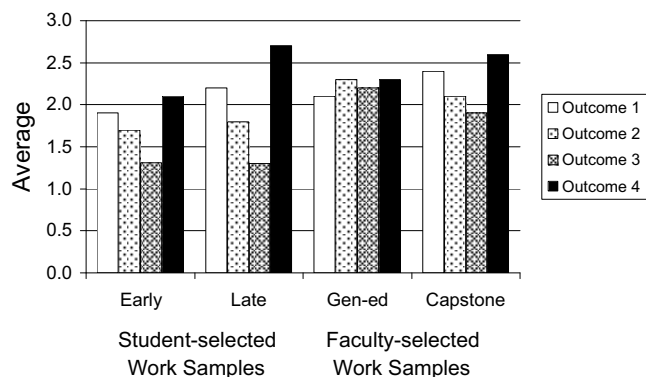
Results: From group evaluation of student papers

Rating scale:

3. Exemplary
2. Adequate
1. Insufficient

<i>Outcomes (average rating)</i>	Student-selected		Faculty-selected	
	Point in Career		Courses	
	Early	Late	Gen-ed	Capstone
1.	1.9	2.2	2.1	2.4
2.	1.7	1.8	2.3	2.1
3.	1.3	1.3	2.2	1.9
4.	2.1	2.7	2.3	2.6

Faculty Ratings



Discussion questions and a verbal description of these data are on Page 2

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Brainstorming #3b: Student Work Samples (Slide #13)

Some things we can see in these data

The faculty ratings for Outcomes 1 through 5 show the same general pattern in the two sets of student-selected work samples and in the faculty-selected samples from capstone courses

The faculty-selected samples from general education courses show a different pattern

Discussion Questions

What do these data suggest about what's happening and what changes might be needed?

What other information might you need to understand what these data tell you?

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IUPUI Assessment Institute, November 4, 2007

Brainstorming #4: Assessment Planning (Slide #20)

Chemistry program (some goals/outcomes*)

1. Knowledgeable about the factual and theoretical basis of chemistry
Some specific outcomes are: The student can
 - Describe the structure and composition of matter
 - Plan the synthesis and characteristics of inorganic and organic compounds
 - Apply theoretical and mechanistic principles to the study of chemical systems employing both qualitative and quantitative approaches
 - Use theories of microscopic properties to explain macroscopic behavior
 - Explain energy's role in determining the structure and reactivity of molecules
2. Access and retrieve specific chemical information from the chemical literature
3. Identify benefits and problems of modern chemistry for society
4. Communicate effectively both orally and in written form, using correct chemical nomenclature and mathematical representations of physical phenomena
5. Work cooperatively in problem solving situations

* Adapted from the University of Wisconsin Oshkosh (<http://www.uwosh.edu/chemistry/assess/plan.html>)

These outcomes are addressed in the following required courses:

Outcome				
1.	2.	3.	4.	5.
*				
*			*	
			*	*
*	*		*	
*	*		*	
			*	*
*	*	*	*	
*	*	*	*	
	*	*	*	*

105-106: General Chemistry I & II
235 & 335: Organic Chemistry I & II
221: Quantitative Analysis
370-371: Physical Chemistry I & II
305: Biochemistry
421: Instrumental Analysis
470: Inorganic Chemistry
400-level topical elective
490: Senior Seminar[*project*]

Pages 2 & 3 have the **Results**

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Results

ETS Major Field Test (MFT) averages

	Our School			MFT Norms		
	2004	2005	2006	2004	2005	2006
Total	146	146.8	146.2	147.3	148.2	147.7
Subscales						
Physical Chemistry	47.2	47.6	47.5	46.9	47.9	47.3
Organic Chemistry	45.9	46.5	46.3	47.5	48.4	48.1
Inorganic Chemistry	49.8	50.1	50.1	46.8	47.8	47.2
Analytical Chemistry	45.3	45.2	45.4	47.1	47.6	47.4

Senior projects: average ratings

From group evaluation of senior projects, across years

Rating scale:

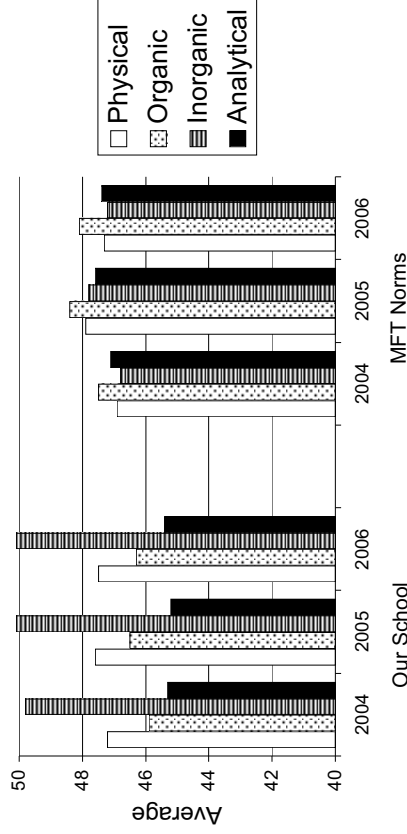
3. Exemplary
2. Adequate
1. Insufficient

	2004	2005	2006
Outcome 1.	2.1	2	2.3
2.	2.5	2.6	2.7
3.	1.5	1.4	1.7
4.	2	2.2	2.1
5.	1.7	1.8	1.6

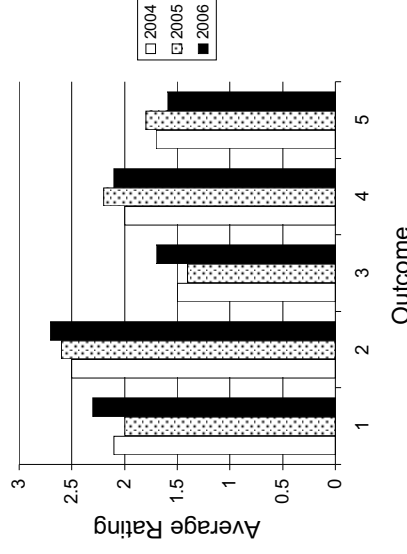
Page 3 has charts, a verbal description of these data. The discussion questions are on Slide #20.

Brainstorming #4: Assessment Planning (Slide #20)

MFT Chemistry Subscores



Senior Projects



Some things we can see in these data

In the Course * Outcomes matrix (page 1)

Outcome 3 seems to be addressed only in 400-level courses

Outcome 5 seems to be addressed only in the methods courses and the senior project

In the MFT scores

Our School's total scores lag behind the norms in all three years

The pattern across Our School's subscores is the same all three years --and is different from the pattern in the MFT Norms

Our School's Inorganic Chemistry subscore is consistently above the Norms. The Analytic Chemistry subscore is consistently below.

In the Senior Projects

The 2006 ratings for Outcomes 1, 2, & 3 are better than those in prior years. The Ratings for Outcomes 4 & 5 aren't.

The **Discussion Questions** are on Slide #20