An Introduction to Classroom Assessment
Finding Out How Well Students Are Learning What We're Teaching

Workshop I for Academic Staff of
The University of Alberta

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The **RSQC2** Technique

Recall

Summarize

Question

Comment

Connect

Reference: Angelo, T.A. & Cross, K.P. (1993). Classroom Assessment Techniques: A Handbook for College Teachers, 2nd edition. San Francisco: Jossey-Bass, pp. 344-348.

Five Promising Pathways into
Classroom Assessment

We can begin by focusing on . . .

Goals/Objectives

Example: Page 3

Principles from Research and Best Practice

Examples: Pages 4 & 5

Persistent Problems

Examples: Pages 7 & 8

Practice-based Hypotheses

Examples: Pages 9-11

Strengths/Successes

Examples: Pages 12 & 13

An Example of *Starting with Goals*

Goal Ranking & Matching Exercise

What do you hope to get out of today's session? Will it address your needs and expectations? This is a Classroom Assessment Technique (CAT) designed to help you identify your expectations and share them with the session leader -- and each other. You'll also review the presenter's goals are for this workshop, and see how well those goals match yours.

1. On the lines below, please list three or four goals you hope to achieve – things you hope to learn or questions you hope to answer – through participating in today's session.

Your <u>learning goals</u> for this workshop

_____

_____

_____

_____

2.   Now, rank your goals in terms of their relative importance <u>to you</u>. Make the most important goal #1, the next most important #2, etc.

3.   As you hear the presenter's goals, circle any of your goals which match those he mentions.

4.   Prepare to talk about any important goals you have which are <u>not</u> included in the presenter's list of goals and/or to ask questions about those goals.

Reference: Angelo, T.A. & Cross, K.P. <u>Classroom Assessment Techniques: A Handbook for College Teachers</u>, 2nd edition. San Francisco: Jossey-Bass, 1993, pp. 290-294.

1st example of *Starting with Principles*

Background Knowledge Probe #1

In response to each name, term, or concept in bold print below, circle the number that best represents your current knowledge:

No. of Responses

1. Federalism

(1) Have never heard of this	0
(2) Have heard of it, but don't really know what it means	14
(3) Have some idea what this means, but not too clear	15
(4) Have a clear idea what this means and can explain it	1

2. Separation of Powers

(1) Have never heard of this	1
(2) Have heard of it, but don't really know what it means	6
(3) Have some idea what this means, but not too clear	18
(4) Have a clear idea what this means and can explain it	5

3. Republic

(1) Have never heard of this	0
(2) Have heard of it, but don't really know what it means	5
(3) Have some idea what this means, but not too clear	23
(4) Have a clear idea what this means and can explain it	2

4. The *Constitution* of the U. S.

(1) Have never heard of this	0
(2) Have heard of it, but don't really know what it means	2
(3) Have some idea what this means, but not too clear	8
(4) Have a clear idea what this means and can explain it	18

5. The *Articles of Confederation*

(1) Have never heard of this	7
(2) Have heard of it, but don't really know what it means	13
(3) Have some idea what this means, but not too clear	6
(4) Have a clear idea what this means and can explain it	4

6. James Madison

(1) Have never heard of this person	3
(2) Have heard of him, but don't really know who he was	8
(3) Have some idea who this was, but not too clear	15
(4) Have a clear idea who this was and can explain	4

2 more examples of Starting with Principles:

_____

Stats for Everyday Life – Spring 2004 - Angelo

First Concept Review

Circle the variable in each pair that you would expect to have the <u>largest</u> standard deviation:

1.1 *peoples' heights*   *peoples' weights*

1.2 *domestic dogs' weights*   *domestic cats' weights*

1.3 *language skills of 12-year-olds*   *math skills of 12-year-olds*

1.4 *hours students spend*   *hours students spend studying*
     <u>in</u> this classroom   *<u>for</u> this class*

Good Practice in Undergraduate Education . . .

1. ## Encourages student-faculty contact.
   (Especially contact focused on the academic agenda.)

2. ## Develops cooperation among students.
   (Teaching them to work productively with others.)

3. ## Encourages <u>active</u> learning.
   (Thinking, doing, and thinking about what they're doing.)

4. ## Gives prompt feedback.
   (And helps students figure out what to do in response.)

5. ## Emphasizes time on task.
   (Provides lots of useful, productive, guided practice.)

6. ## Communicates high expectations.
   (And encourages students to have high self-expectations.)

7. ## Respects diverse talents and ways of learning.
   (And engenders respect for intellectual diversity.)

1st example of *Starting with Persistent Problems*

Macroeconomics Essay Grading Grid

<u>**Assignment:**</u> Write a well-structured, enlightened critical essay about current economic conditions that demonstrates command of existing economic knowledge, appropriate interpretation and application of that knowledge, and demonstrates appropriate use of data and argumentation to support well-reasoned policy recommendations.

Basic Questions to Address:

What is the current macroeconomic situation in the U.S.?

What is the likely prognosis for the next 12 to 24 months?

What are your economic policy recommendations?

Thanks to Dr. Richard Stratton of the University of Akron for permission to use this example.

1st example of *Starting with Persistent Problems*

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2nd example of *Starting with Persistent Problems*

Discussion Draft Questions for an
Undergraduate Course/Teaching Evaluation Form

Questions about yourself   **(1= Always, 2=Usually, 3=Sometimes, 4=Rarely, 5=Never, NA= Not Applicable)**

I was self-motivated to learn this course material	1	2	3	4	5	NA

2.   I was well-prepared for each class
     session   1   2   3   4   5   NA

I asked the instructor for help/guidance when I needed it	1	2	3	4	5	NA
I invested enough time and energy to meet/exceed course requirements	1	2	3	4	5	NA
I participated actively and contributed thoughtfully in class sessions	1	2	3	4	5	NA
I attended class sessions and/or individual appointments	1	2	3	4	5	NA
Overall, I gave my best possible effort to learning in this course	1	2	3	4	5	NA

Questions about the course   **(1= Always, 2=Usually, 3=Sometimes, 4=Rarely, 5=Never, NA= Not Applicable)**

8. The course was well-organized to help students learn	1	2	3	4	5	NA
9. The objectives and criteria for meeting them were made clear	1	2	3	4	5	NA
10. The assignments contributed to my learning	1	2	3	4	5	NA
11. The assessments/evaluations were clearly connected to the objectives	1	2	3	4	5	NA
12. The amount of work required was appropriate to the objectives	1	2	3	4	5	NA
13. The level of intellectual challenge was high	1	2	3	4	5	NA

Questions about the instructor   **(1= Always, 2=Usually, 3=Sometimes, 4=Rarely, 5=Never, NA= Not Applicable)**

The instructor clearly connected the course objectives to course activities, assignments, and
     assessments   1   2   3   4   5   NA

15. The instructor encouraged me to connect my experience to the course	1	2	3	4	5	NA
16. The instructor provided clear and useful feedback to improve learning	1	2	3	4	5	NA
The instructor inspired interest and excitement in the course material	1	2	3	4	5	NA
The instructor was available and helpful when asked	1	2	3	4	5	NA

The instructor communicated ideas and information
     clearly and effectively   1   2   3   4   5   NA

20. The instructor evaluated and graded fairly	1	2	3	4	5	NA
21. The instructor treated students and their ideas with respect	1	2	3	4	5	NA

22. The instructor used required texts/other required materials effectively   1   2   3   4   5   NA

Summary Questions: Compared w/ other courses: (1=extremely high, 2=high, 3=adequate, 4=low, 5=very low)

23. This course increased my desire to continue learning about this material   1   2   3   4   5   NA
24. If a friend asked about taking this course, my recommendation would be   1   2   3   4   5   NA

25. Overall, I would rate the quality of this course as   1   2   3   4   5   NA

26. Overall, I would rate the effectiveness of the instructor as   1   2   3   4   5   NA
27. Overall, I would rate the amount I learned in this course as   1   2   3   4   5   NA
28. Overall, I would rate the value of what I learned in this course as   1   2   3   4   5   NA

1st example of *Starting with Hypotheses*

The Minute Paper

Please answer each question in 1 or 2 sentences:

1) What was the most useful or meaningful thing you learned during this session?

2) What question(s) remain uppermost in your mind as we end this session?

Reference: Angelo, T. A. & Cross, K. P. <u>Classroom Assessment Techniques: A Handbook for College Teachers</u>, 2nd edition. San Francisco: Jossey-Bass, 1993, pp. 148-153.

*The "Muddiest" Point**

What was the "muddiest" point in this session?
(In other words, what was least clear to you?)

*   This Classroom Assessment Technique was developed by Dr. Frederick Mosteller, a distinguished professor of statistics at Harvard University. For a detailed account of its development and use, see his article, *The "Muddiest Point in the Lecture" as a Feedback Device* in <u>On Teaching and Learning: The Journal of the Harvard-Danforth Center</u>, Vol. 3, April 1989, pp. 10-21.

A Revision of Bloom's Taxonomy
(From Anderson & Krathwohl, 2001)

CREATE
Generate, Plan, Synthesize, Produce the New

EVALUATE
Critique or Judge based on Explicit Standards/Criteria

ANALYZE
Break Down, Relate Parts & Whole, Organize

APPLY
Follow Procedures to Solve Problems or Carry Out Tasks

UNDERSTAND
Connect New Learning to Prior Knowledge by Interpreting, Classifying, Comparing, Summarizing, etc.

REMEMBER
Elaborate, Encode, and Retrieve Information from Long-term Memory

2nd example of *Starting with Hypotheses*

The *RSQC2 Technique*

Recall

Summarize

Question

Comment

Connect

Reference: Angelo, T.A. & Cross, K.P. (1993). Classroom Assessment Techniques: A Handbook
for College Teachers, 2nd edition. San Francisco: Jossey-Bass, pp. 344-348

Groupwork Exercise

Sharing What Has Worked & Learning Lessons from Success

DIRECTIONS: Focus on **a specific unit, lesson, concept, or skill** that you teach particularly well. With that successful experience in mind, **take the next 5 minutes** to jot down answers to the following questions.

As you write, prepare to explain your example to your colleagues in the small group in <u>no more than</u> 3 minutes.

1. **What course is your example taken from?**

2. **What exactly were you trying to teach?**
   (What was your teaching goal or objective?)

3. **How did you <u>teach</u> it?**
   (What, specifically, did you <u>do</u> that promoted success?)

4. **How did you know that students had learned it?**
   (How did you assess/evaluate/test their achievement of your goal?)

5. **What did y<u>ou</u> learn, as a teacher, from that experience?**

6. **What's the "big lesson" (general principle) about effective teaching and assessing that your example illustrates?**
   (How would you explain this to a beginning teacher who's not in your discipline?)

2ND example of *Starting with Strengths/Successes*
Applications Card

DIRECTIONS: **Please take a moment to recall the ideas, techniques, and strategies we've discussed –
and those you've thought up – to this point in the session. Quickly list as many possible applications as
you can. Don't censor yourself! These are merely <u>possibilities</u>. You can always evaluate the desirability
and/or feasibility of these application ideas later.**

*Interesting
IDEAS/TECHNIQUES
<u>from this session</u>*

*Some possible
APPLICATIONS of those
<u>ideas/techniques to my work</u>*

Reference: Angelo, T.A. & Cross, K.P. (1993). <u>Classroom Assessment Techniques: A Handbook
for College Teachers</u>, 2nd edition. San Francisco: Jossey-Bass, pp. 236-239.

ANGELO'S SEVEN AXIOMS
OF
CLASSROOM ASSESSMENT

1. Don't ask if you don't want to know.

2. Don't collect more <u>data</u> than you can
    easily and quickly turn into useful <u>information</u>.

3. Don't simply <u>adopt</u> methods and techniques from
    others, <u>adapt</u> them to your subject and students.

4. Before using a CAT, always ask yourself: How might
    responses to this question help me and my
    students improve learning? (If you can't answer
    that, the assessment is probably not worth doing.)

Take advantage of the "Hawthorne Effect."
    Let students know why you are using CATs and
    how you hope it will benefit them. You'll be
    more likely to find what you're looking for.

Remember: If an assessment is worth doing,
    it's worth teaching students how to do it well.

Make sure to close the "feedback loop" by letting
    students know what you've gleaned from their
    Responses -- and how you and they can use that
    information to improve learning.

A Few Key Ideas on
The Scholarship of Teaching & Learning

ARE EFFECTIVE AND SCHOLARLY TEACHING RELATED?

Effective Teaching is <u>not</u> equal to subject matter expertise. Such expertise is necessary, but not sufficient – and not well correlated with teaching effectiveness.

Effective Teaching results in students' demonstrable achievement of meaningful, long-lasting learning objectives at or above an agreed-upon, public standard of quality.

Scholarly Teaching is demonstrably informed by the best, current, relevant research and good practice literature.

N.B. Teaching can be effective without being scholarly, or scholarly without being effective – or neither, or both.

DEFINING FEATURES OF THE SCHOLARSHIP OF TEACHING & LEARNING?

According to Hutchings and Shulman (1999) –

"A scholarship of teaching is *not* synonymous with excellent teaching. It requires a kind of 'going meta,' in which faculty frame and systematically investigate questions related to student learning – the conditions under which it occurs, what it looks like, how to deepen it, and so forth – and do so with an eye not only to improving their own classroom but to advancing practice beyond it" (p. 12).

A Few Key Ideas on the Scholarship of Teaching & Learning – continued

Throughout, Carnegie Academy for Scholarship of Teaching and Learning (CASTL) materials characterize the scholarship of teaching and learning as:

- discipline-based

- public ("community property")

- open to critical peer review and evaluation

- capable of being adapted and used by other teachers in the same discipline.

The Scholarship of Teaching & Learning . . . is <u>not</u> simply effective teaching or scholarly teaching – although both of these are valuable and valued. It is disciplined, systematic inquiry into teaching and learning that results in work that can be communicated to, critiqued by, and used by peers to improve understanding, practice, and outcomes.

WHAT CRITERIA CAN WE USE TO ASSESS THE QUALITY OF SCHOLARSHIP OF TEACHING AND LEARNING EVIDENCE?

The Carnegie Foundation's "Six Standards for Assessing Scholarly Work" provide a powerful set of criteria:

- CLEAR GOALS

- ADEQUATE PREPARATION

- APPROPRIATE METHODS

- SIGNIFICANT RESULTS

- EFFECTIVE PRESENTATION

- REFLECTIVE CRITIQUE

From: Glassick, C.E., Huber, M.T., & Maeroff, G.I. (1997). <u>Scholarship Assessed: Evaluation of the Professoriate</u>. San Francisco: Jossey-Bass.

Three Workshop Definitions

Higher learning is an active, interactive, self-aware process that results in meaningful, long-lasting changes -- in knowledge, understanding skills, behaviors, attitudes, beliefs, opinions, and/or values -- that can <u>not</u> be attributed primarily to maturation.

Angelo, T. A. *A 'Teacher's Dozen': Fourteen General, Research-based Principles
   for Improving Higher Learning in Our Classrooms.* <u>The AAHE Bulletin</u>, *45* (8),
   April 1993, pp. 3-7 & 13.

Classroom Assessment is a simple method faculty can use to collect feedback, early and often, on how well their students are learning what they are being taught. The purpose of classroom assessment is to provide faculty and students with information and insights needed to improve teaching effectiveness and learning quality. College instructors use feedback gleaned through Classroom Assessment to inform adjustments in their teaching. Faculty also share feedback with students, using it to help them improve their learning strategies and study habits in order to become more independent, successful learners. . . . Classroom Assessment is one method of inquiry within the framework of Classroom Research, a broader approach to improving teaching and learning.

Angelo, T. A. (1991). Ten easy pieces: Assessing higher learning in four dimensions.
   In T. A. Angelo (ed.) *Classroom Research: Early Lessons from Success.* San Francisco:
   Jossey-Bass. New Directions for Teaching and Learning, no. 46, 17-31.

Collaborative Learning refers to those learning activities intentionally designed and assigned to be carried out by pairs or small groups of students. In addition to intentional design, two other elements are key to this definition. Co-laboring is the second necessary element. All participants in the group must engage actively in working together toward the stated objectives. If only one of two, or two of five group members complete a group task while the others watch, that does not constitute collaborative learning – or at least not effective collaborative learning. Whether all group members are assigned exactly the same task, or different pieces of a large assignment, they must all contribute more or less equally. Even active, equitable engagement of each member of the group in completing an assigned collaborative task is not sufficient, however. The third requirement is that meaningful learning – achieving the intended instructional goals – take place through that intentional, engaged collaboration. Others call this kind of activity <u>cooperative learning</u>, <u>team learning</u>, g<u>roup learning</u>, or <u>peer-assisted learning</u> – and philosophical differences sometimes lie behind the different labels. . . . <u>Collaborative Learning Techniques</u>, or <u>CoLTs</u> for short – as K. Patricia Cross has named them -- are mainly simple and flexible tools that can be adapted to fit a wide variety of disciplines, instructional goals, and learning contexts.

Angelo, T.A. (2003).

A Few Key References
On Improving Teaching & Learning

Boice, R. First-Order Principles for College Teachers: Ten Basic Ways to Improve the Teaching Process.
Bolton, MA: Anker, 1996.

Bean, J.C. Engaging Ideas: The Professor's Guide to Integrating Writing, Critical Thinking, and Active
Learning in the Classroom. San Francisco: Jossey-Bass, 1996.

Bransford, J.D., Brown, A.L, and Cocking, R.R. (Eds.). How People Learn: Brain, Mind, Experience,
and School. Washington, DC: National Academy Press, 1999.

Cross, K.P & Steadman, M.H. Classroom Research: Implementing the Scholarship of Teaching.
San Francisco: Jossey-Bass, 1996.

Davis, B.G. Tools for Teaching. San Francisco, CA: Jossey-Bass, 1993.

Erickson, B.L & Strommer, D.W. Teaching College Freshmen. San Francisco, CA: Jossey-Bass, 1991.

McKeachie, W.J & Associates. Teaching Tips: Strategies, Research, and Theory for College and
University Teachers, 11th Edition. Boston: Houghton Mifflin, 2002

Walvoord, B.E. & Anderson, V. Effective Grading: A Tool for Learning and Assessment.
San Francisco: Jossey-Bass, 1998.

Weimer, M. Learner-Centered Teaching: Five Key Changes to Practice. San Francisco, CA: Jossey
Bass, 2002.

Workshop I Evaluation Form

1. Please rate the overall <u>quality</u> of this session on the scale below:

1	**2**	**3**	**4**	**5**
very poor	poor	acceptable	good	excellent

2. Please rate the overall <u>usefulness</u> of the session below:

1	**2**	**3**	**4**	**5**
useless	not very	somewhat	very	extremely

3. Please rate the <u>effectiveness</u> of the presenter below:

1	**2**	**3**	**4**	**5**
not at all	not very	somewhat	very	extremely

4. What did you learn that <u>you can apply</u> to your work? (Please be specific.)

5. How could the session have been more useful to you? (Please be specific.)

6. What kinds of follow up would be most helpful to you?