

Assessment and Feedback for Authentic Learning **How Less Can Often Be More**

A keynote session at
The 2017 DePaul University Teaching and Learning Conference
Beyond Grades: Capturing Authentic Learning

Friday 5 May 2017 – 9:15 to 10:45 AM

Tom Angelo

Clinical Professor of Educational Innovation & Research
UNC Eshelman School of Pharmacy
University of North Carolina at Chapel Hill

I. Assessing Values – Values Affirmation [1]

Schnabel (2013) & Steele (2010)

On the lines below, jot down 2 or 3 educational/professional/personal values you hold that motivate you to invest time and energy in efforts like today's *Teaching and Learning Conference*.

II. Assessing Goals – Goal Ranking & Matching [2]

Morisano, D., et al. (2010)

What specifically do you hope to learn/gain through participating in today's Conference sessions?
On the lines below, please list two or three specific learning goals you hope to achieve and/or questions you hope to answer through participating today.

Your Learning Goals/Burning Questions for the *2017 Teaching & Learning Conference*

A First 'Balcony' Question

Are there any ways in which having assessment data on your students' learning-related values and/or goals could possibly help you and your colleagues promote authentic learning?

III. Assessing Interests – Instant Polling [1 & 3]

Please circle only the two or three questions below which most interest you.

1. What is authentic learning?
 2. What is authentic assessment and feedback? (And what’s inauthentic?)
 3. Why might learners need authentic assessment and feedback?
 4. Why do learners so often ignore feedback?
 5. What kinds of assessment and feedback do learners need?
 6. When is feedback most effective?
 7. Whose feedback is most effective for what?
 8. How can we ensure our feedback is taken seriously?
 9. How can we be both authentic and efficient in assessing and giving feedback?
 10. Write in your own question(s): _____
-

IV. Assessing Prior Knowledge – Plus-Minus-Question Mark [1 & 3]

Some key terms and concepts that *might* be of use . . .

- Formative and summative assessment
 - Motivated reasoning
 - Confirmation bias
 - Stereotype threat
 - *Bus Test, Parrot Test, and Parking Lot Test*
 - Effect size
 - Cognitive load
 - Metacognition
 - *The Dance Floor and The Balcony*
 - Reflection
 - Deliberate practice
 - Novice-Expert differences
-

A Second ‘Balcony’ Question

Are there any ways in which having assessment data on your students’ learning-related interests and/or prior knowledge could help you and your colleagues promote authentic learning?

V. SIX DIMENSIONS OF HIGHER LEARNING OUTCOMES [1, 2 & 4]

Approximate percentage of the assessment & feedback *you* received during your own undergraduate degree program that focused on . . .

What percentage of assessment & feedback *your* future students will need during their degree programs that focuses on . . .

_____	FACTUAL LEARNING Learning <i>What (Level 1)</i> Learning facts and principles	_____
_____	CONCEPTUAL LEARNING Learning <i>What (Level 2)</i> Learning concepts and theories	_____
_____	PROCEDURAL LEARNING Learning <i>How</i> Learning skills and procedures	_____
_____	CONDITIONAL LEARNING Learning <i>When and Where</i> Learning applications	_____
_____	METACOGNITIVE LEARNING Learning <i>How to Learn</i> Learning to direct and manage one’s own learning	_____
_____	REFLECTIVE LEARNING Learning <i>Why (and Why Not)</i> Developing self-knowledge, cultural awareness, ethics, etc.	_____
100%		100%

Third ‘Balcony’ Question

VI. Bloom’s Cognitive Domain Taxonomy (Revised) [1, 3 & 4] Anderson & Krathwohl (2001)

(6) CREATE

Generate, Plan, Synthesize, Produce the New

(5) EVALUATE

Critique or Judge based on Explicit Standards/Criteria

(4) ANALYSE

Break Down, Relate Parts and Whole, Organize

(3) APPLY

Follow Procedures to Solve Problems or Carry Out Tasks

(2) UNDERSTAND

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

(1) REMEMBER

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

“*Blooming*” - Categorizing Questions by Bloom’s Taxonomy [1, 3 & 4] Cook, E., et al. (2013)

Directions: Using the numbers 1-6 to represent the levels of Bloom’s revised taxonomy (above), please identify the level of each question below.

- ___A. Give an example of “seasonal change”
- ___B. Why do the Earth’s seasons change?
- ___C. What causes the Earth’s seasons to change? (Explain how it works.)
- ___D. When it is winter in Chicago, IL, USA what season is it in Canberra, ACT, Australia?
- ___E. Where on Earth would you predict the greatest seasonal variation occurs? Why?
- ___F. What contribution, if any, will global warming likely make to seasonal change? Explain your reasoning.
- ___G. What would happen to seasonal change in Chicago, IL if the Earth’s degree of tilt on its axis changed to:
 - i. 45 degrees?
 - ii. 90 degrees?
 - iii. 180 degrees?
 - iv. 0 degrees?
- ___H. If the Earth’s orbit moved it significantly further away from the Sun, what difference, if any, would you predict that increased distance would make to seasonal change? Explain your answer.
- ___I. If you were teaching how and why the seasons change to a 5-year-old, how would you explain it?
- ___J. If astronomers discovered an Earth-like planet with no seasonal variation, what would you predict about that planet’s orbit, etc.? Explain your reasoning.

VII. Bondy’s Clinical Performance (Skills) Rating Scale [1, 3 & 4] Bondy, K.N. (1983)

(6) EXPERT INSTRUCTOR *

Safe – Very Proficient – Capable of assessing, demonstrating, instructing & supporting learners in levels 1-5

(5) INDEPENDENT

Safe – Very Proficient – Requires no support

(4) SUPERVISED

Safe – Proficient – Requires only occasional support and direction

(3) ASSISTED

Safe – Mostly Proficient – Requires frequent support and direction

(2) MARGINAL

Safe only when supervised – Unskilled – Requires continuous support and direction

(1) DEPENDENT

Unsafe & Unaware – Unable to demonstrate skill – Requires direct instruction and continuous support

*Level Six is not in the original Bondy Scale, but is implicit in its use as a criterion-based assessment tool.

Skills Self-Assessment Exercise – [1, 3 & 4]

Using the Bondy Scale above, and thinking of skills you already possess and your current levels of competence, confidence and independence in those skills: Identify at least one of your skills in which you are currently “Dependent,” another skill(s) in which you are “Marginal,” and so on all the way up.

Bondy Levels

My Skills

Expert Instructor (6)

Independent (5)

Supervised (4)

Assisted (3)

Marginal (2)

Dependent (1)

VIII. Sample Self- and Peer Assessment and Grading Rubric [4, 6 & 7]

UNC Eshelman School of Pharmacy – Spring 2017

PACE 809.2 – Effective Teaching Strategies for Health Sciences Education – Tom Angelo

Please note: In the text below, the terms “learner” and “learners” will be used to signify any and all of the specific intended “target audiences” – e.g., students, patients, residents, preceptors, pharmacists and/or other health professionals – for whom Significant Learning Experience Designs (SLED) have been developed.

<p>32-35 Points [High Pass or A]</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Fully meets all the criteria for “Pass/B” listed below – and at least 3 of the 5 criteria below: <input type="checkbox"/> Goes beyond Pass-level expectations in integrating relevant current research and practice literature <input type="checkbox"/> Goes beyond Pass-level expectations in integrating effective strategies and techniques <input type="checkbox"/> Demonstrates notable creativity and/or innovative thinking in content, execution and/or presentation <input type="checkbox"/> Contributes new information/ideas/concepts that, when shared, will contribute significantly to the learning, health, well-being and/or success of the intended “target audience” <input type="checkbox"/> Has already been accepted for inclusion and use in a course, patient ed., continuing ed. program, etc.
<p>28-31 Points [Pass or B]</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Presents a well-polished, highly readable document that could be shared, as is, with and benefit that “target audience(s) <input type="checkbox"/> Presents a well-integrated final document that contains both a text (prose) explanation and elaboration of the SLED and a detailed agenda, running sheet or storyboard – complete with timings – to serve as a guide for successful implementation of the SLED <input type="checkbox"/> Provides a complete, concise overview and introduction to the SLED, explaining: who the “target audience(s) is/are; what the overall purpose is; why and how it is likely to be significant and beneficial to that audience(s); where, when, and how it could be implemented; what the key design assumptions are; and, what the author’s motivations were in proposing and developing it <input type="checkbox"/> Provides an appropriate number (+/- 3-7) of well-framed, levelled (i.e., using Bloom’s and/or Bondy’s scale) and assessable intended learning outcomes (ILOs) <input type="checkbox"/> Explains what will motivate the “target audience(s)” to participate and how the audience(s) will be engaged and activated – including appropriate strategies and/or techniques <input type="checkbox"/> Provides a teaching and learning plan for presenting the SLE, including appropriate strategies and techniques – all clearly aligned with the ILOs <input type="checkbox"/> Provides an assessment and feedback plan, including appropriate strategies and techniques – all clearly aligned with the ILOs <input type="checkbox"/> Integrates a minimum of five research-based, demonstrably effective, appropriately referenced teaching, learning, assessment and/or feedback strategies <u>overall</u> – aligned with the ILOs <input type="checkbox"/> Explains succinctly how each strategy and technique aligns with the relevant ILO and why it is appropriate and likely to be effective in promoting that ILO <input type="checkbox"/> Explains succinctly what the appropriate criteria would be for SLED success/effectiveness and how the degree of success/effectiveness in an actual implementation might be determined and/or measured <input type="checkbox"/> Includes a brief reflection on the lessons learned from the SLED exercise and from feedback on it that are likely to be relevant and useful in future coursework, experiential learning, and/or practice <input type="checkbox"/> Provides relevant references from the literature that support all key SLED elements <input type="checkbox"/> Cites and references correctly 95%-100% of the time, using AMA citation & referencing style <input type="checkbox"/> Is written clearly, coherently and appropriately, with no significant errors in grammar, spelling, or usage
<p>24-30 Points [Low Pass or C]</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Responds to all the requirements for “Pass/B” listed above, but displays some non-critical shortcomings in quality and/or execution. Essentially, a Low Pass or C-level SLED would require at least one additional revision cycle to meet the “Pass/B” criteria.
<p>0-23 Points [Fail]</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Fails to respond fully to all the requirements because it is incomplete or, if complete, because some elements are of poor/unacceptable quality

IX. Authentic Formative Feedback – Some Discussion Points [4]

WHY GIVE LEARNERS FEEDBACK?

- TO IMPROVE PERFORMANCE & ACADEMIC SUCCESS
 - TO INCREASE INTEREST & MOTIVATION TO LEARN
 - TO ILLUMINATE AND UNDERMINE MISCONCEPTIONS AND BIASES
 - TO PROMOTE SELF-ASSESSMENT & SELF-REGULATION
 - TO DEVELOP INDEPENDENCE AS LIFELONG LEARNERS
-

TO USE FEEDBACK WELL, LEARNERS NEED M.O.M.

- **MOTIVATION – REASONS TO USE THE FEEDBACK**
 - **OPPORTUNITIES – FOR SAFE, GUIDED, PRODUCTIVE PRACTICE**
 - **MEANS – KNOWLEDGE & SKILLS REQUIRED FOR SELF-IMPROVEMENT, AND METACOGNITIVE SKILLS ARE CRITICAL IN THIS REGARD**
-

THE ORDER IN WHICH WE GIVE FEEDBACK MATTERS

CONSIDER THE FOLLOWING FIVE STEPS:

1ST - GOOD NEWS: WHAT WAS DONE WELL

2ND - BAD NEWS: WHAT STILL NEEDS IMPROVEMENT

3RD - OPTIONS: WHAT CAN BE DONE TO IMPROVE IT

4TH - PLANS: WHAT THE LEARNER INTENDS TO DO

5TH - COMMITMENTS: WHAT BOTH PARTIES AGREE TO DO, HOW, TO WHAT STANDARD, AND BY WHEN

X. *Effective, authentic feedback for deeper learning . . .*

- Feeds forward: Focuses on improving future performance
 - Is iterative – part of a robust, regular process
 - Is consequential to and intrinsically valued by the learner
 - Comes from multiple, credible and trusted sources
 - Focuses on outcomes and/or behaviors; not on the person or their qualities
 - Is criteria and standards referenced, not norm-referenced
 - Is specific and limited to what matters most
 - Provides sufficient evidence to support judgments and decisions made
 - Can be implemented by the learner, given skills and time available
 - Offers some choices regarding follow up
 - Encourages and promotes self-assessment, as appropriate
-

XI. *The GIFT – Gathering Informal Feedback on Teaching*

A Mid-Semester/Mid-Quarter Feedback Technique

1. Please give two or three examples of specific things your instructor does that help you learn effectively in this course.

At the end of each example, please indicate whether that specific thing is:

(1) Very important; (2) Somewhat important; or (3) Not very important in helping you learn.

2. Please suggest two or three specific, practical and constructive changes your instructor could make to help you learn more effectively in this course.

At the end of each suggestion, please indicate whether that specific change is likely to be:

(1) Very important; (2) Somewhat important; or (3) Not very important in improving your learning.

3. Please suggest two or three specific, practical and constructive changes you and/or your classmates could make to help you learn more effectively.

At the end of each suggestion, please indicate whether that specific change is likely to be:

(1) Very important; (2) Somewhat important; or (3) Not very important in improving your learning.

4. Any further comments?

XII. Draft Questions for a Course/Teaching Feedback Form [1, 3 & 4]

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

1. 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
3. I asked the instructor for help/guidance when I needed it	1	2	3	4	5	NA
4. I invested enough time and energy to meet/exceed course requirements	1	2	3	4	5	NA
5. I participated actively and contributed thoughtfully in class sessions	1	2	3	4	5	NA
6. I attended class sessions and/or individual appointments	1	2	3	4	5	NA
7. 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)

14. The instructor clearly connected the course objectives/outcomes 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
17. The instructor inspired interest and excitement in the course material	1	2	3	4	5	NA
18. The instructor was available and helpful when asked	1	2	3	4	5	NA
19. 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/instructors: (1=extremely high, 2=high, 3=adequate, 4=low, 5=very low)

23. Overall, I would rate the instructor’s effectiveness as a teacher as	1	2	3	4	5	NA
24. Overall, I would rate the amount I learned in this course as	1	2	3	4	5	NA
25. Overall, I would rate the value of what I learned in this course as	1	2	3	4	5	NA
26. Overall, I would rate the quality of this course as	1	2	3	4	5	NA
27. My motivation to continue learning about this material in the future is	1	2	3	4	5	NA
28. The likelihood I’d recommend this course to a good friend is	1	2	3	4	5	NA

Another ‘Balcony’ Question

Are there any sections and/or items in the form above that either differ significantly from or are entirely absent from your current course and teaching feedback form?

XIII. Applications Card [5]

Angelo, T.A. & Cross, K.P. (1993)

*Interesting or promising
IDEAS/TECHNIQUES
from this session*

*Some possible, potential
APPLICATIONS of those
ideas/techniques to my work*

XIV. Seven Levers for Deeper, More Authentic Learning

Research-based Guidelines for Effective Teaching and Learning

Overall, research suggests that virtually all students can learn more – and more deeply – when we help them to . . .

1. Become explicitly aware of their own relevant prior knowledge, beliefs, preconceptions, and values – and unlearn, as needed
2. Set and maintain realistically high and personally meaningful learning goals and expectations for academic success
3. Learn how to learn effectively – given their own individual histories, talents, preferences, and goals – so they become increasingly self-directed and independent learners
4. Understand the criteria, standards, and methods used in assessing and evaluating their learning and get useful, timely feedback on their performance against those standards
5. Seek and find connections to and personally meaningful real-world applications of the facts, concepts and skills they are learning in and through the curriculum and co-curriculum
6. Collaborate regularly and effectively with other learners, staff and teachers to achieve meaningful, shared learning goals
7. Invest as much actively engaged time and high-quality effort as possible in their academic work

XV. A FEW USEFUL REFERENCES ON TEACHING, ASSESSMENT AND LEARNING

- Anderson, L. & Krathwohl, D.R. (Eds.) (2001). *A Taxonomy for Learning, Teaching, and Assessment: A Revision of Bloom’s Taxonomy of Educational Objectives (Abridged Ed.)*. New York: Allyn & Bacon.
- Angelo, T. (2012). Designing subjects for learning: Practical, research-based principles and guidelines. In Hunt, L. & Chalmers, D. *University Teaching in Focus: A Learning-centred Approach*. London: Routledge, 93-111.
- Angelo, T.A. & Cross, K.P. (1993). *Classroom Assessment Techniques, 2nd Ed*. San Francisco: Jossey-Bass.
- Bondy, K.N. (1983). Criterion-referenced definitions for rating scales in clinical evaluation. *Journal of Nursing Evaluation*, 22(9), 376-382.
- Cook, E., Kennedy, E. & McGuire, S.Y. (2013). Effect of teaching metacognitive learning strategies on performance in general chemistry courses. *J. Chem. Educ.* 90 (8), 961-967. DOI: 10.1021/ed300686h.
- Dewey, J. (1938). *Experience and Education*. New York: Collier.
- Dweck, C. (2000). *Self-theories: Their Role in Motivation, Personality, and Development*. Philadelphia, PA: Taylor Francis.
- Dunlosky, J., et al. (2013). Improving students’ learning with effective learning techniques: Promising directions from cognitive and educational psychology. *Psychological Science in the Public Interest*, 14(1), 4-58.
- Ericsson, K.A., Krampe, R.T. & Tesch-Romer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review*, 100(3),363-406.
- Freeman, S. et al. (2014). Active learning increases student performance in science, engineering, and mathematics. *PNAS Early Edition*. Downloaded 14 April 2014 from www.pnas.org/cgi/doi/10.173.pnas.1319030111
- Gross, D., et al. (2015). Increased pre-class preparation underlies student outcome improvement in the flipped classroom. *CBE-Life Sciences Education*, 14, 1-8.
- Hattie, J. & Yates, G. (2014). *Visible Learning and the Science of How We Learn*. New York: Routledge.
- Kruger, J. & Dunning, D. (1999). Unskilled and unaware of it: How difficulties in recognizing one’s own incompetence leads to inflated self-assessments. *Journal of Personality and Social Psychology*, 77(6), 1121-1134.
- Kuh, G. (2008). *High-Impact Educational Practices: What They Are, Who Has Access to Them, and Why They Matter*. Washington, DC: American Association of Colleges & Universities.
- Li, J. & De Luca, R. (2012). Review of assessment feedback. *Studies in Higher Education*. DOI:10.1080/03075079.2012.709494
- Morisano, D, et al. (2010). Setting, elaborating, and reflecting on personal goals improves academic performance. *Journal of Applied Psychology*, 95 (2), 255-264. DOI: 10:1037/a0018478
- Nichol, D.J. & Macfarlane-Dick, D. (2007). Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. *Studies in Higher Education*, 31(2), 199–218.
- Rhodes, T.L. (Ed.) (2010). *Assessing Outcomes and Improving Achievement: Tips and Tools for Using Rubrics*. Washington, DC: American Association of Colleges & Universities.
- Schnabel, N. et al. (2013). Demystifying values affirmation interventions: Writing about social belonging is a key to buffering against identity threat. *Personality and Social Psychology Bulletin*, 39: 663. DOI: 10.1177/01461672213480816.
- Sheldon, O.J., Dunning, D. & Ames, D.R. (2014). Research report – Emotionally unskilled, unaware, and uninterested in learning more: Reactions to feedback about deficits in emotional intelligence. *Journal of Applied Psychology*, 99(1), 125-137.
- Splitter, L.J. (2009). Authenticity and constructivism in education. *Studies in Philosophy and Education*, 28(2), 135-151.
- Steele, C.M. (2010). *Whistling Vivaldi: How Stereotypes Affect Us and What We Can Do*. New York: Norton
- Stone, D. & Heen, S. (2014). *Thanks for the Feedback: The Science and Art of Receiving Feedback Well*. New York: Penguin.
- Svinicki, M.D. (2004). *Learning and Motivation in the Postsecondary Classroom*. Bolton, MA: Anker.
- Wiggins, G. (2006). Healthier testing made easy: The idea of authentic assessment. *Edutopia*.
Downloaded on 28 April 2017 from www.edutopia.org/authentic-assessment-grant-wiggins
- Wiggins, G. (2012). Seven keys to effective feedback. *Educational Leadership*, 70(1), 10-16.
- Wiggins, G. & McTighe, J. (2005). *Understanding by Design, Expanded 2nd ed*. Mahwah, NJ: Merrill-Prentice-Hall