Assessment, Achievement and Accountability: An Exercise in ... What?

“If everyone is thinking the same thing, someone’s not thinking!”

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Abstract

Assessment, achievement and accountability go hand in hand. Assessment must be used to propagate change and improve student outcomes. Measurements of achievement judiciously applied provide direction to improve student outcomes. Accountability must come from within all tiers of academics, i.e., the “system”, faculty, students, administrators and staff. Failure of one criterion guarantees failure of all three.

✓ Learning outcome: data must take the place of politics in driving academic change and improving student outcomes.

✓ Learning outcome: data must be made easily available to drive academic change and improve student outcomes.
Teaching: “[Professional activities] of sharing and explaining a body of knowledge with others.”
http://www.thefreedictionary.com/teaching

Studying: “to apply one's mind purposefully to the acquisition of knowledge or understanding of a subject; the practice of reading or writing, [e.g.,] at night, especially by artificial light.”
http://www.thefreedictionary.com/studying

Learning: “the cognitive process of acquiring skill or knowledge; the act of internalizing or studying a body of knowledge for purposes of expanding one’s self and society and demonstrating that knowledge.”
http://www.thefreedictionary.com/learning
Assessment

Assessment is “a process of gathering and documenting information about the achievement and skills of an individual or group of individuals ... and using that evidence-based information (data) to improve and increase student achievement for and in future courses.”

http://www.answers.com/topic/assessment
Achievement

Achievement is defined as “something completed or attained successfully”; students complete a course of study in such a manner, and at such a standard, that students are academically back grounded and prepared for their next course[s] or program[s] in their academic endeavors.

http://www.answers.com/topic/achievement
Accountability

Accountability is “the obligation to bear the consequences for failure to [achieve] as expected [or desired].”

http://www.answers.com/topic/accountability
Accountability

“The very notion that anyone might be opposed to teacher accountability is a stretch. But beware, for the phrase is not what it appears to be. In fact, in this age of urgency about standards, it has become a code phrase for blaming teachers. It means not just that teachers are supposed to be responsive to the needs of students or to provide high-quality instruction but that they must see that their students have high test scores [and course grades]—or else.”

http://www.nctm.org/resources/content.aspx?id=7814
(National Council of Teachers of Mathematics)
Case Study #1
Assessment: General Chemistry

1. Raw MATH Assessment Score v MATH Pre-Req Grade -- AVG Correct = 10/20
   - R² = 0.1141

2. Raw MATH Assessment Score (AVG 9.7/20) v MATH 120 Grade; n=16
   - R² = 0.0104

3. Raw MATH Assessment Score (9.9/20) v MATH 126, 127 or 128 Grade; n=15
   - R² = 0.0167

4. Raw MATH Assessment Score (13.1/20) v MATH 181, 182 or 283 Grade; n=7
   - R² = 0.071
Assessment: General Chemistry

Math Assessment by MATH Pre-Req Matriculated

- **120**
- **126, 7, 8**
- **181, 2, 3**
- **Class AVG**

- StDev
- AVG

*P < 0.05*

NSD

0 2 4 6 8 10 12 14 16 18 20 120, 7, 8 181, 2, 3 Class AVG MATH Pre-Req (Raw: Correct of 20)
Assessment: General Chemistry

3.8 X Greater Relationship

R² = 0.1391

R² = 0.5255
Assessment: General Chemistry

Final Exam Score (%) v MATH Pre-Req Grade (NSHE 4.0 Scale)

- **R² = 0.1354**
- **3.4 X Greater Relationship**

Final Exam Score (%) v Final Exam MATH Assessment (Raw)

- **R² = 0.4616**
Assessment: General Chemistry

4.185 X Greater Relationship
Assessment: General Chemistry

ACS Percentile v Matriculated
MATH Pre-Req -- NSD

- 120
- 126, 7, 8
- 181, 2, 3
- Class AVG

MATH Pre-Req Course
Assessment: General Chemistry

Modified ACS Percentile v Modified Final Exam Percentile

$R^2 = 0.4087$
Assessment: General Chemistry

2.4 X Greater Relationship
Group Participation

Assessment – Complete?

Achievement – How Would YOU determine if Students Have Achieved?

Accountability – How Would YOU Hold Students, Faculty, Administrators Accountable?
Assessment: BIOL

Conglomerate BIOL Mid-Term Exam Score v CHEM Grade

\[ R^2 = 0.0164 \]

Conglomerate BIOL Mid-Term Exam Score v Biochem Review

\[ R^2 = 0.9207 \]
Assessment: BIOL

Final BIOL Grade v CHEM Pre-Req Grade

R² = 0.0162

39 X Greater Relationship

BIOL Course Grade v Biochem Review Grade

R² = 0.6305
Assessment: Metabolism

**Metabolism v CHEM Pre-Req Grade**

- $R^2 = 0.064$

**Metabolism v Biochem Review Score**

- $R^2 = 0.5186$

8 X Greater Relationship
Group Participation

Assessment – Complete?

Achievement – How Would YOU determine if Students Have Achieved?

Accountability – How Would YOU Hold Students, Faculty, Administrators Accountable?
Conclusion

What Would YOU Conclude?

Failure of one criterion guarantees failure of all three.

Thank You for Attending and Sharing!