From Learning Outcome to Assessment: Measuring for Success

2014
AALHE

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Art Credit: Digital Mountains, by Jay Savage

Presentation Objectives

By the end of this workshop, participants will be able to:

1. Determine the intended use(s) and user(s) of the assessment results.

2. Compare and contrast the goals for using several categories of assessment methodologies, including formative and summative; direct and indirect; and qualitative vs. quantitative.

3. Discuss how the level of cognitive performance targeted by the outcome directs the appropriate methodology for assessment of that performance.

4. Explain the importance of alignment between learning activities, assessments, and course student learning outcomes.

5. Explain the differences and relationships between grading, course evaluation, and learning outcomes assessment.

6. Explain how utilizing "authentic" assessment methods can improve student learning by focusing on complex, ill-structured, and real-life challenges.

7. Design a variety of effective learning activities and assessments from a student learning outcome.

Agenda

I. Introduction

II. Levels and Types of Assessment

III. Designing Learning Activities and Outcome Measurements

IV. Putting it Together – Measuring for Success

REVIEW: Defining a Student Learning Outcome

Student learning outcomes

clearly state

the expected knowledge, skills, attitudes, competencies, and habits of mind

that students are expected to acquire

when they complete:
- **a course**
- **a program, or**
- **a certificate or degree**

REVIEW: Anatomy of a Student Learning Outcome

A **learning outcome statement** contains

1. a **verb** (an action) and
2. an **object** (usually a noun).

Analyze how **situational variables shape communicative interaction (verbal, non-verbal, and paralinguistic) and behavior** in significant ways.

REVIEW: Anatomy of a Student Learning Outcome

WORKSHOP LO – Intercultural Competence:
Analyze how situational variables shape communicative interaction (verbal, non-verbal, and paralinguistic) and behavior in significant ways.

*Situational variables: e.g., context and role expectations, including power differentials, and social variables such as age, gender, social class, religion, ethnicity and place of residence

In its broadest sense, **intercultural competence** can be defined as "a complex of abilities needed to perform *effectively* and *appropriately* when interacting with others who are linguistically and culturally different from oneself."

(ICC: Sinicrope, Norris, & Castle, 2006)

Three steps to get from *learning outcome* to *assessment*:

1. Identify the level of assessment (who?) and the purpose of the assessment (why?)
2. Determine what types of assessment tasks are aligned with the target level of knowledge (e.g. Bloom's taxonomy) in the learning outcome
3. Choose assessment methods that accurately and effectively measure student performance as determined by the course student learning outcome

How do I choose the right method of assessment?

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III. Designing Learning Activities and Outcome Measurements

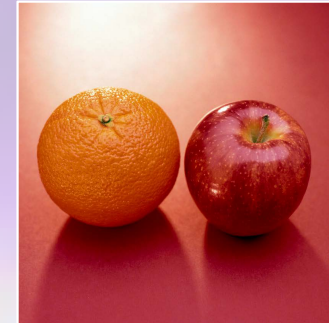IV. Putting it Together – Measuring for Success

Types of Assessment

Formative & Summative

Qualitative & Quantitative

Direct vs. Indirect

What's "*authentic*" about authentic assessment?

"...**Engaging and worthy problems or questions of importance, in which students must use knowledge to fashion performances effectively and creatively. The tasks are either replicas of or analogous to the kinds of problems faced by adult citizens and consumers or professionals in the field**."

-Grant Wiggins
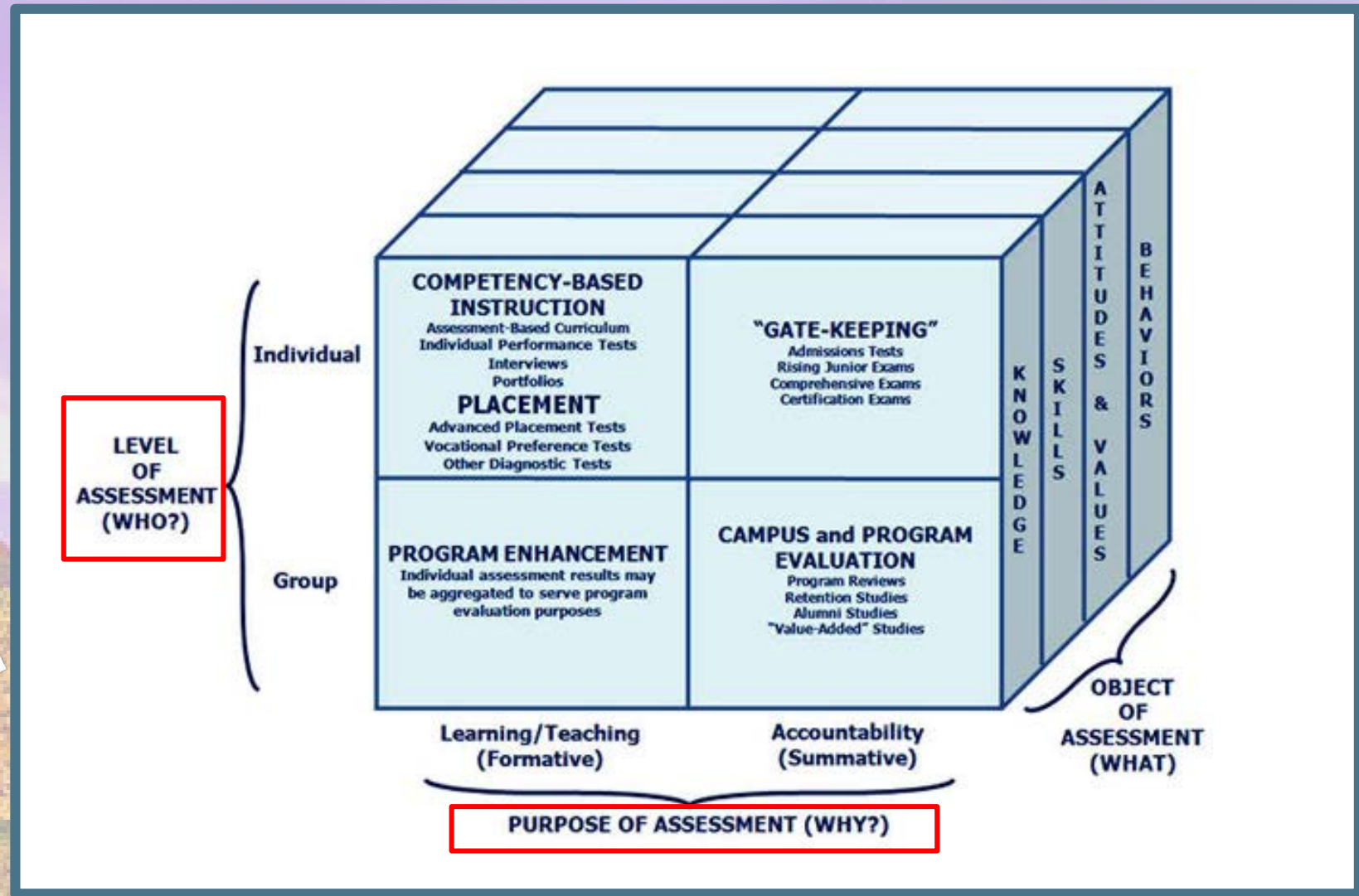
Who is the assessment data for? Why is it needed?

Photo Credit: Terenzini, P. T. (Nov/Dec 1989). Assessment With Open Eyes: Pitfalls in Studying Student Outcomes." *Journal of Higher Education*, Vol. 60, No. 6, pp. 644-664.

Formative & Summative Assessment Definitions

Formative Assessment	Summative Assessment
Goal: To gather feedback from formal or informal processes that can be used by the instructor and the students to gather evidence for the purpose of improving learning. These may be low stakes assessments.	Goal: To measure the level of success or proficiency that has been obtained at the end of an instructional unit, by comparing it against some standard or benchmark. *The outcome of a summative assessment can be used formatively when students or faculty use the results to guide their efforts and activities in subsequent courses.*

EXAMPLES

Formative Assessment

Weekly applications:

Students will be able to *analyze* themselves *using* psychological principles, and *plan* how to improve their lives.
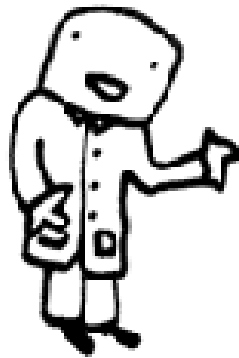
Summative Assessment

Service Learning:

Students will be able to collectively *develop* and *carry out* psychological research procedures.

Qualitative and Quantitative Definitions

Which methodology should we use to measure a gluteus maximus?
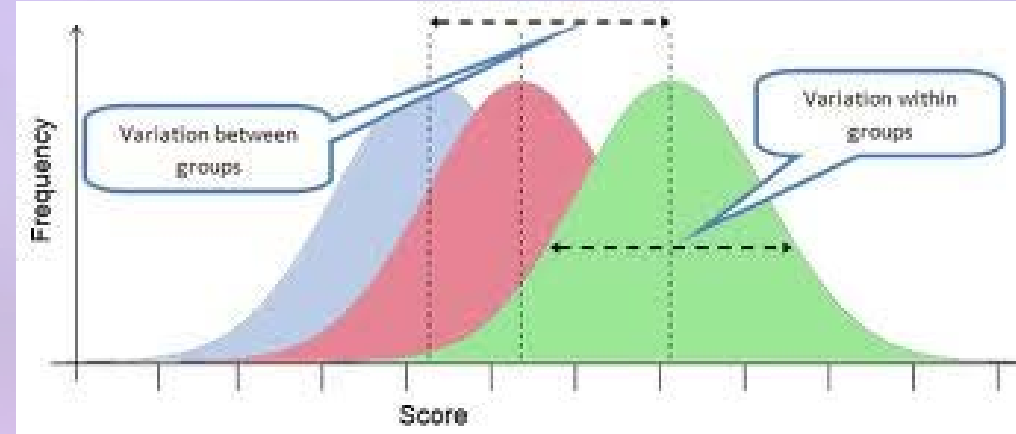
QUALITATIVE RAP

The butt was approximately spherical in shape, light-brown, and firm yet yielding to pressure.

QUANTITATIVE RAP

Numerous attempts were made to measure the volume, density, and elasticity of the butt; however, the subject refused repeatedly and became hostile.

Cartoon credit: Toothpaste For Dinner - http://www.toothpastefordinner.com/index.php?date=062410

EXAMPLES

Qualitative Assessment

Oral Competency:

Students will be able to *identify* importance of developing statistical skills by hand while *recognizing* that social scientists utilize statistical software for their professions.

Quantitative Assessment

Written Competency:

Students will be able to *identify* the appropriate hypothesis testing method and *carry out* the identified method's procedure.

Types of Assessment Methods

Assessment methods = tools/techniques used to determine the extent to which the learning outcomes are achieved

Direct Assessment Methods	Indirect Assessment Methods
Involves looking at *actual samples of student work* produced in our courses and programs.	Involves gathering information about student learning by looking at *indicators of learning* other than student work output.

Average Job Placement Rate of All New College Graduates and Nursing Graduates

ACTIVITY 1: Types of Assessment Methods

Direct Assessment Methods	Indirect Assessment Methods

ACTIVITY 1: Types of Assessment Methods

Direct Assessment Methods	Indirect Assessment Methods
• Course and homework assignments • Exams and quizzes • Locally developed pre- and post- tests • Performance assessment for graduates • Writing proficiency exams • National Major Field Achievement Tests • Certification exams, licensure exams • Reflective journals • Portfolio evaluations / Capstone courses *(program assessment)* • Internship evaluations • Grading with scoring rubrics*	• Peer institutions comparison • Job placement rates • Employer surveys • Transfer student performance at 4-yr college • Student graduation/retention rates • Exit interviews of graduates • Focus group discussions • Alumni surveys • Tracking of alumni awards, achievements (national, state, international, etc.) • Classroom assessment techniques (minute papers, muddiest point)

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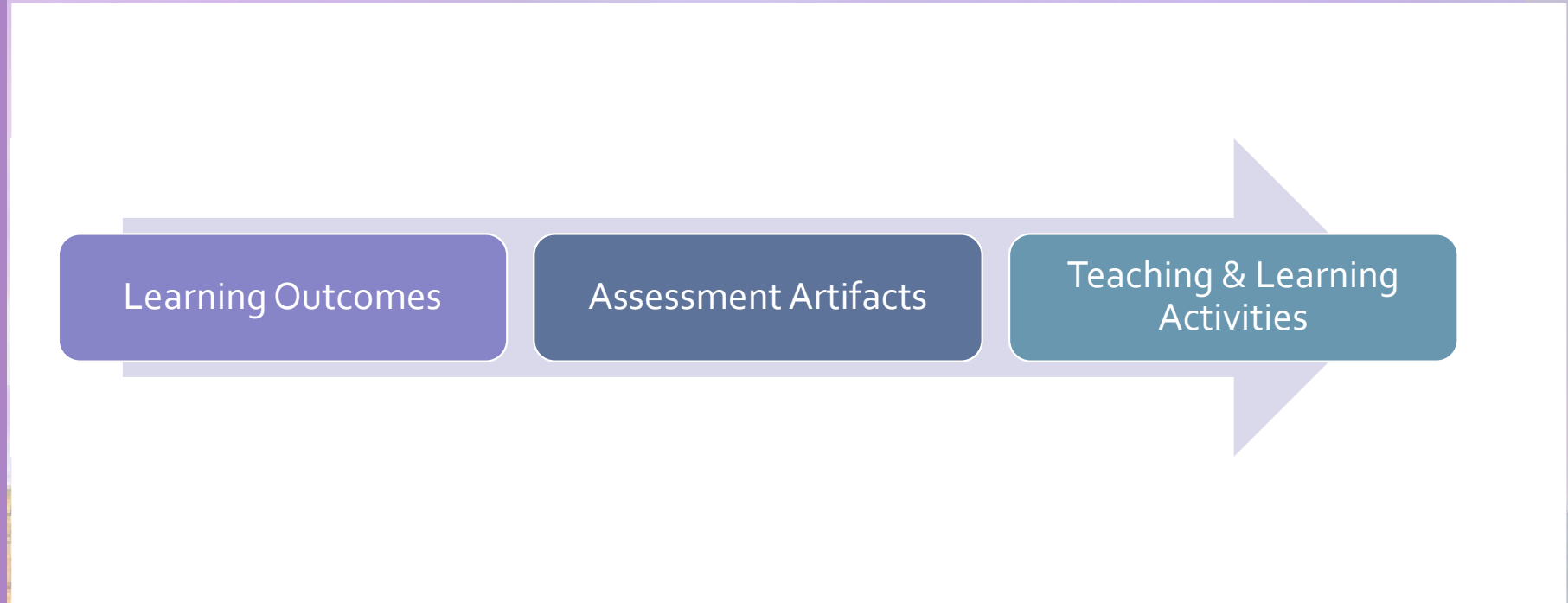III. Designing Learning Activities and Outcome Measurements

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Backwards Design

Learning Outcomes → Assessment Artifacts → Teaching & Learning Activities

Example: Using Backwards Design

Competency Based Education Planning for PSY2265 Cognitive Psychology - Asako Stone

Competencies (what students will master)	Student Learning Outcomes (what students will do through model, practice, and application)
Critical Analysis: Students will be able to *analyze* their thought processes *using* cognitive psychological principles, and *plan* how to improve their thought processes. ○ Application level: personal ○ Spiral 1: Application of individual principles at the chapter level (How could I improve my own life by applying cognitive psychology?)	○ **Remembering**: Students will *name* cognitive psychological principles applicable to their current thought processes. ○ **Understanding**: Students will *paraphrase* research methods and main findings based on research articles. ○ **Applying**: Students will *employ* identified cognitive psychological principles to their own thought process. ○ **Analyzing**: Students will *deconstruct* their own thought processes through identified cognitive psychological principles. ○ **Evaluating**: Students will *critique* their own thought processes, and critique their peers' applications. ○ **Creating**: Students will *plan* ways to improve their thought processes, and *rewrite* their applications based on their peers' critiques.
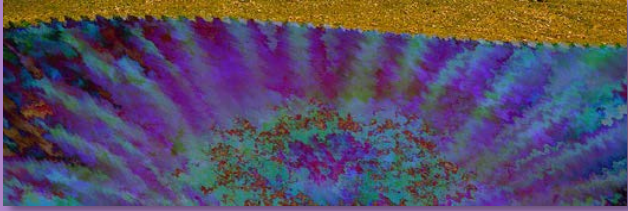
Level of Bloom's Taxonomy

WORKSHOP LO – Intercultural Competence:
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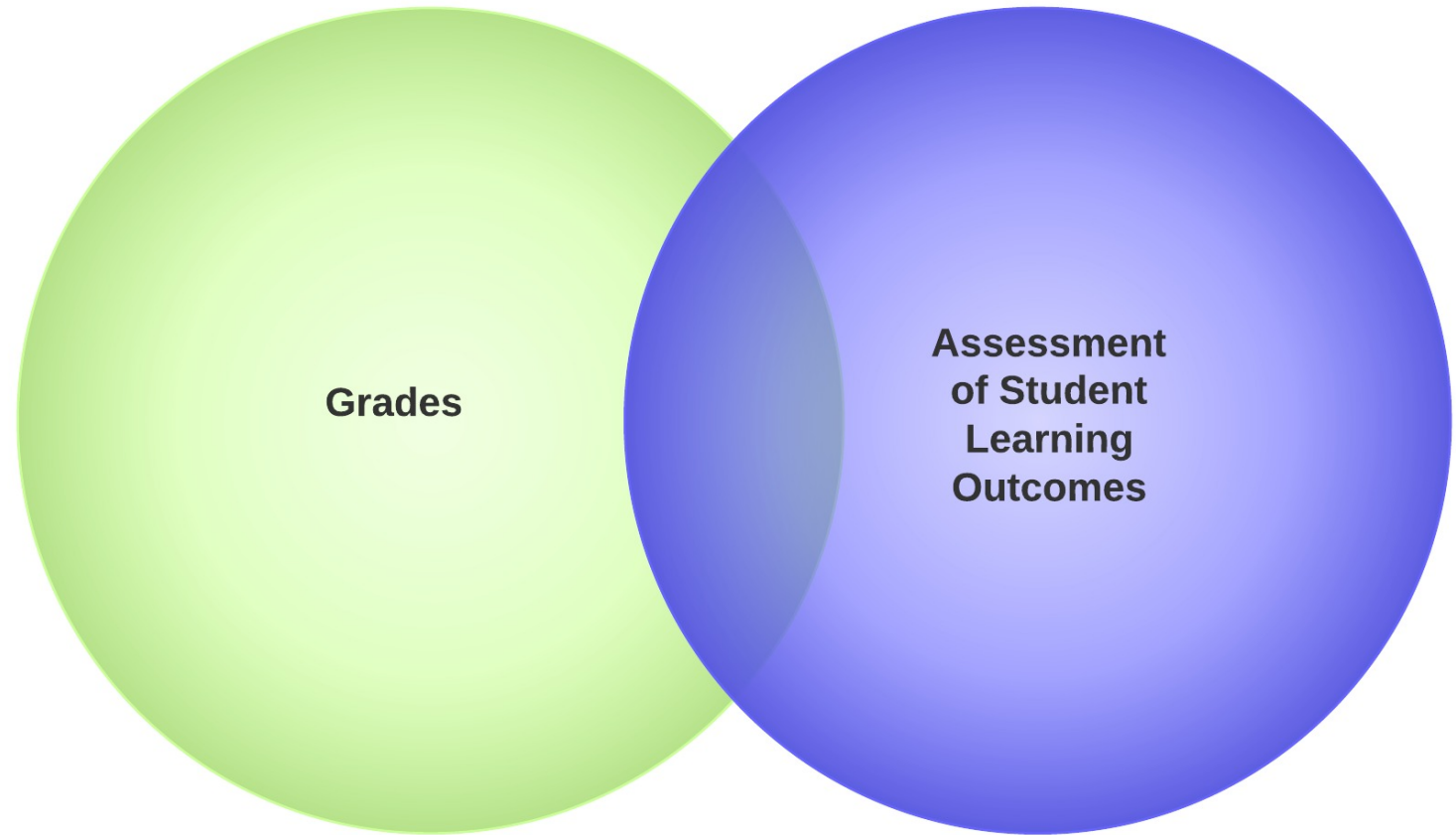
Importance of Matching level of SLO with Assessment Tasks
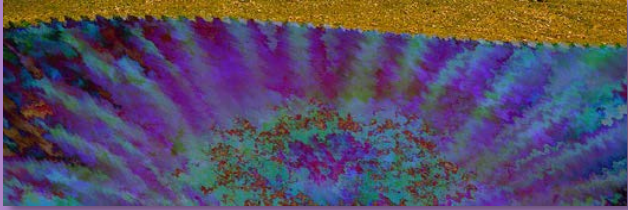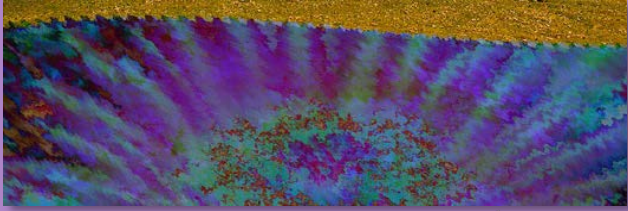
Why exam and course grades may not necessarily measure ability to meet a learning outcome:
- inconsistent evaluations within course, between courses, semesters, campuses
- grades can depend on instructor-specific factors: weight for assignments, importance of additional topics
- grades can depend on student behavior missed or late assignments

ACTIVITY 3: What are the pros and cons of using rubrics?

PROS	CONS

ACTIVITY 4: SLO - Professionalism

Skill/ Outcome	Identify components of professionalism (Exam 1) 15pt	Identify components of professionalism (HW1) 20pt	Demonstrate Professionalism (Clinical 1) 10 pt	Demonstrate Professionalism (Clinical 2) 10 pt	Total Identify components 35 pt	Total demonstrate professionalism 20 pt	Total Score/ Grade 55 pts
Std 1	10	15	6	9	25	15	40=C
Std 2	14	18	10	8	32	18	50=B
Std 3	14	17	5	5	31	10	41=C
Class Average	12.67	16.67	7	7.33	29.34	14.33	

SLOs:
1) Identify components of professionalism in the workplace.
2) Demonstrate professionalism in the workplace.

See TSJC Professionalism Rubric

ACTIVITY 5: SLO – Communication

Grading Criteria (10 points each)	Student										
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	AVG
1. Clearly state the purpose.	9	8	7	9	7	9	10	8	9	9	8.3
2. Clearly understand the audiences' values, attitudes, goals, and needs.	7	8	7	7	5	6	7	6	7	9	6.9
3. Evaluates evidence (data) for accuracy and relevance.	8	9	8	9	6	7	8	7	8	9	7.9
4. Use vocabulary appropriate to the subject and purpose(s)	7	8	9	9	5	9	8	7	8	10	7.6
5. Use correct reference forms.	7	6	7	6	5	6	7	8	9	9	6.7
6. Use correct grammar, syntax (word order), punctuation, and spelling.	8	9	7	8	6	7	8	9	8	10	8
7. Present accurate information.	9	7	8	9	7	6	8	9	9	8	8
8. Develop patterns or organization for ideas.	6	7	8	9	7	8	9	7	9	9	7.9
9. Identify strengths and weaknesses of an argument, situation, or action.	7	6	7	9	5	7	7	8	7	9	7
10. Summarize the main ideas clearly.	8	7	8	9	7	6	7	8	10	10	7.9
TOTAL GRADE:	76	75	76	84	60	71	79	77	84	92	

SLO: Explain and defend ideas orally and in writing.
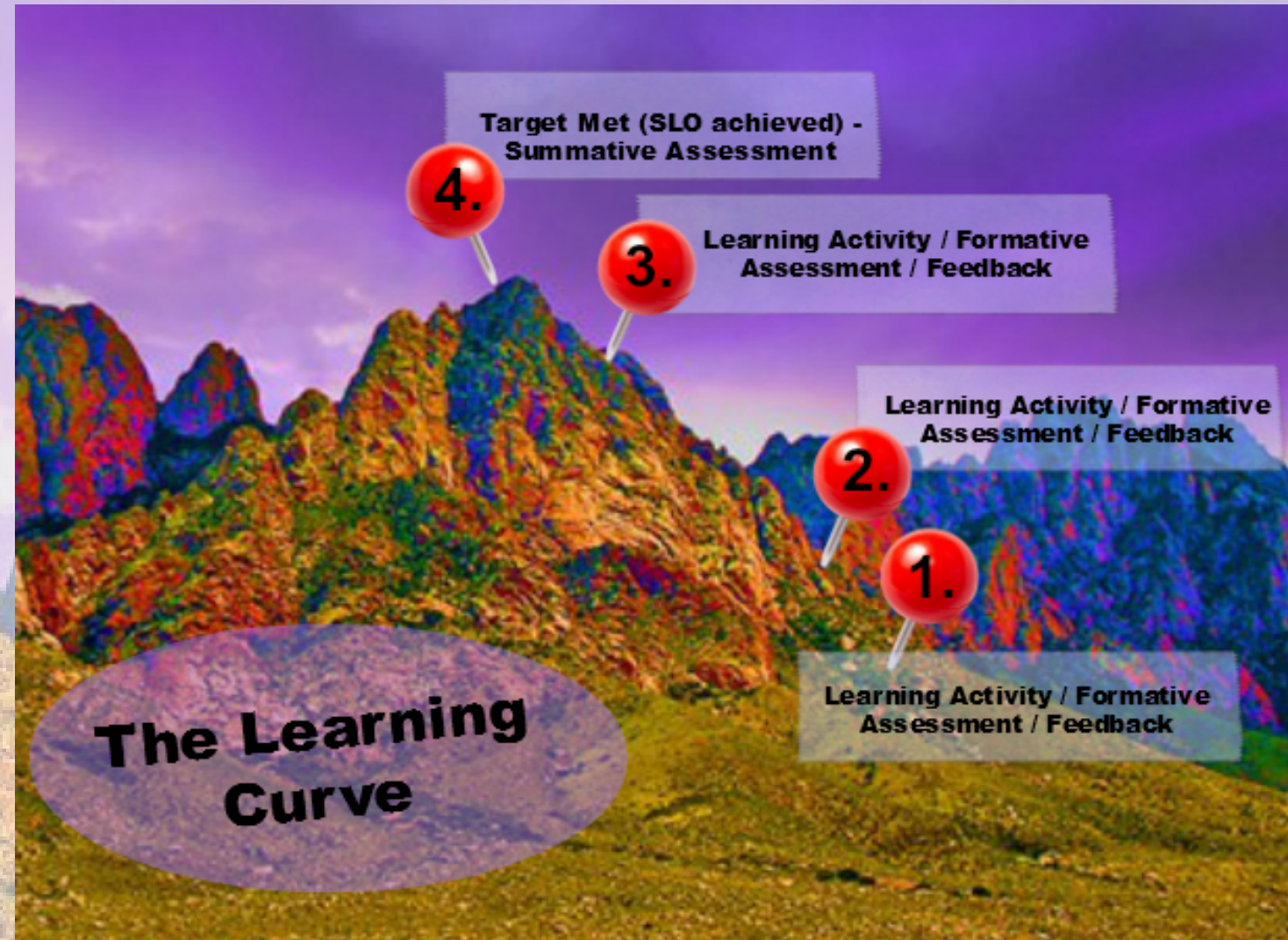
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ACTIVITY 6: Putting it All Together

Target Met (SLO achieved) - Summative Assessment

4.

3. Learning Activity / Formative Assessment / Feedback

Learning Activity / Formative Assessment / Feedback

2.

1.

Learning Activity / Formative Assessment / Feedback

The Learning Curve

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References & Resources

LEARNING OUTCOMES ASSESSMENT

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- Terenzini, P.T. (Nov/Dec 1989). Assessment with open eyes: Pitfalls in studying student outcomes. *Journal of Higher Education*, Vol. 60, No. 6, pp. 644-664.

References & Resources

AREN'T GRADES ASSESSMENT?

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- Carnegie Mellon University (n.d.). *Grading vs. Assessment of Learning Outcomes: What's the difference?* Retrieved from: http://www.cmu.edu/teaching/assessment/howto/basics/grading-assessment.html

References & Resources

RUBRICS

- **Introduction to Rubrics** – DePaul Teaching Commons – LINK

- **Creating Rubrics** – a five-part tutorial on rubric creation and implementation: LINK

- **American Association of Colleges & Universities (AAC&U) VALUE Rubrics** - LINK