Learner-Centered Assessment in Online Courses
Using Self-Evaluation and Peer Review to Document Student Learning Outcomes

Shawntel Landry, Ed. D.
Alana Sloan, Ed. D.
Assessment Institute
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Agenda

1. Background/Set the Stage
2. Assessment System
3. Learner-Centered Assessment
4. Learner-Centered Assessment: Study 1
5. Learner-Centered Assessment: Study 2
6. Overall Findings and Continuous Improvement
Background and Set the Stage

American College of Education

- Regionally accredited graduate-level education college
- Located in Indianapolis, IN
- Programs
  - 16 graduate certificates
  - 23 master's programs
  - 1 specialist program
  - 1 doctoral program
Setting the Stage

• Moved in 2013 from a proprietary learning management system (LMS) to Canvas LMS
• Increased interactivity and opportunity for learner-centered assessment through more automated survey capabilities and peer review assessment
• Prior to 2013:
  - pre- and post- self-assessments were in Word documents, and data were analyzed by hand.
  - peer reviews could only be conducted in discussion boards.

Guiding Questions

• How can learner-centered assessment provide evidence of student mastery of learning outcomes?
• What measures can serve as rich data sources?
Research Question
Can learner-centered assessment be used to provide evidence of student mastery of learning outcomes?

Let’s take a poll...

Poll Results
Do you use learner-centered assessment as part of your assessment system?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>8</td>
</tr>
</tbody>
</table>
Assessment System

Assessment System
Four Components

Student Learning Outcomes
- Quantitative
- Qualitative
- Performance
- Learner-Centered
SLO Alignment

Academic Outcomes
- rubrics
- surveys
- institution-wide

Program Outcomes
- state and nat. standards
- discipline-specific standards

Course Objectives

Module Objectives

Program Blueprint and SLO Alignments

Program Outcomes:
1. Design and deliver instruction that is responsive to student diversity and differences and promotes high achievement.
2. Use standards-based, data-driven decision-making and integrated, differentiated instruction that effectively integrates technologies and tools and supports the learning of all students.
3. Explain the multiple forms of assessment, and use assessment results to inform instructional decision making.
4. Construct well-organized, positively managed, and safe learning environments that positively impact instructional effectiveness and student achievement.
5. Validate participation in activities that promote continuous professional growth, inquiry, research, and collaboration with the goal of improving student achievement and to maintain the high ethical standards of the teaching profession.
6. Apply knowledge of scientifically-based research to plan and deliver instruction in content areas, including reading, language arts, mathematics, science, social studies, fine arts, health, wellness, and physical education, for the purpose of improving the achievement of all students.

Course 1

<table>
<thead>
<tr>
<th>Course 1</th>
<th>Course 2</th>
<th>Course 3</th>
<th>Course 4</th>
<th>Course 5</th>
<th>Course 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>SME: Dr. XX</td>
<td>SME: Dr. XX</td>
<td>SME: Dr. XX</td>
<td>SME: Dr. XX</td>
<td>SME: Dr. XX</td>
<td>SME: Dr. XX</td>
</tr>
</tbody>
</table>

AI
1. Identify critical elements impacting literacy instruction. (PO: 4)
2. Identify the working relationship between phonemic awareness and phonics. (PO: 4)
3. Compare and contrast effective instructional approaches to enhance fluency, vocabulary development, and comprehension, including evidence-based extensions and interventions. (PO: 1)
4. Demonstrate computational skills and understanding of fundamental concepts and processes of mathematics, including number systems and operations, algebraic thinking, measurement, geometry, and probability. (PO: 4)
5. Describe components of scientific, inquiry-based instructional practices. (PO: 3)
6. Describe characteristics impacting age-appropriate instruction. (PO: 1, 4)

Indiana School Setting Development Standards – Elementary Education – 1, 2, 3, 4, 5, 6, 7.1, 1.2, 2.2, 3.2, 4.2, 5.2, 6.2
Indiana Content Standards for Educators (IESA) – Elementary Generalist – 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6
Indiana Developmental Standards for Educators – School Setting Development Standards – Elementary Education – 1.1, 1.6
Indiana Developmental Standards for Educators – School Setting Development Standards – Elementary Education – 1.1, 1.6
Indiana Developmental Standards for Educators – Elementary Generalist – 1.1, 1.6
Indiana Developmental Standards for Educators – Elementary Education – 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
Indiana Content Standards for Educators (IESA) – Elementary Generalist – 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, 2.1, 2.2, 2.3, 2.4, 2.5

NABTS Core
Assessment Alignment

- Program Level
  - Program Alignment Map

- Course Level
  - Course Alignment Map (Signature Assessments, Peer Review)
  - Course TOTS Alignment Map

Learner-Centered Assessment
Learner-Centered Assessment

“An activity designed by the professor that yields comprehensive information for analyzing, discussing, and judging a learner’s performance on valued abilities and skills” (p. 12)

- Huba & Freed (2000)

Let’s take a poll...

Poll Results

Can learner-centered assessment be used to provide evidence of student mastery of learning outcomes?

- Start this poll to accept responses

Yes: 15
No: 2
Only in certain situations: 2

0 3 6 9 12
Benefits of a Learner-Centered Approach

At the student level:
- Students become “active participants rather than passive consumers of content” (p. 903).
  - Bayat (2012)
- Learner-centered assessment:
  - helps students synthesize learning experiences.
  - Huba & Freed (2000)

At the institutional level, learner-centered assessment:
- promotes high expectations in the learning environment.
- demonstrates respect for diverse talents and learning styles.
- promotes coherence in providing data to improve curriculum and guide revisions.
  - Huba & Freed (2000)
Learner-Centered Assessment: Two Studies

1. Pre- and Post-Course Self-Evaluation to measure Student Learning Outcomes (SLOs)

2. Peer Review Assessment to measure SLOs

Learner-Centered Assessment: Study 1 (Self-Assessment)
Self-Assessment

Definitions

...The involvement of learners in making judgments about their own learning, particularly about their achievements and the outcomes of their learning.
- Boud & Falchikov (1989)

...Evaluations learners make about their current knowledge levels or increases in their knowledge levels in a particular domain.

Benefits of Self-Assessment

Debate: Are self-assessment results more representative of cognitive or affective learning growth?

Self-assessment can be used as a triangulation technique to supplement information (about student learning) acquired through direct measures.
- Moskal (2010)

Change in students’ psychological perspectives resulting in:
- Metacognitive knowledge
- Learning constructivism
- Development of self-efficacy
Benefits of Self-Assessment

Self-assessments of knowledge have a critical role in the learning process; learners benefit from having an accurate understanding of their knowledge levels.

- Dunning et al. as cited in Sitzman et al. (2010)

Guiding Questions

- What data can we harvest from pre- and post-course self-evaluations?
- How can we graphically show this data?
Research Question

• Can self-assessment provide evidence of mastery of student learning outcomes?

Study 1 Design

• Three programs – M. Ed. in Curriculum and Instruction, Educational Leadership, Educational Technology
• Random term selected from 8 terms in 2013
• From the term, 10% of the total number of courses randomly selected from a numbered course list
• Pre- and Post- Self-Evaluations collected and analyzed from all student sections of selected courses
Study 1 Design

<table>
<thead>
<tr>
<th>Curriculum &amp; Instruction</th>
<th>Educational Leadership</th>
<th>Educational Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term (1-8)</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Number of Courses Per Term Per Program</td>
<td>8</td>
<td>5</td>
</tr>
</tbody>
</table>

Numbers and Titles of Courses Per Term

1. CI5033
2. CI5313
3. CI5333
4. CI5353
5. CI5393
6. CI5423
7. CI5453
8. CI5503

1. EL5033
2. EL5623
3. EL5633
4. EL5753
5. EL5903

1. ET5013
2. ET5023
3. ET5033

Randomly Selected Course Numbers (10% of total courses per selected term)

1. CI5393
2. EL5623
3. ET5033

Number of Sections Per Selected Course

2 (56)
5 (153)
1 (30)

Number of Students Completing Pre- and Post-Self-Evaluations

Pre - 35
Post - 29
Pre - 136
Post - 101
Pre - 22
Post - 21

Data Comparisons: C&I
Data Comparisons: EL

Data Comparisons: ET
Findings

- In all selected courses and across programs, students self-reported significant growth in the acquisition of student learning outcomes when pre- and post-results were compared.
- Across programs, post-course results showed an overwhelming majority of students rating their knowledge level as a 3 or 4.

4-Point Likert Scale
1. I am unfamiliar with this concept.
2. I have heard of this but need to learn more.
3. I am fairly confident in my knowledge of this and can implement this on my own.
4. I can teach or consult with someone else to help them implement this.

Findings: Item 1 Perceived Growth Comparison
Peer Assessment

A method in which students evaluate each other's work based on set criteria

- Falchikov (2001) & Gouli et al. (2006)
Benefits of Peer Assessment

Peer evaluations help students who are being evaluated by “adding insight of people (fellow students) with different perspectives than their professor.”

“The act of evaluating peer work can strengthen critical thinking skills and help students understand faculty expectations…”

- Suskie & Banta (2009)

Guiding Questions

- What is the level of student involvement in the peer review assessment process?
- To what extent are students applying peer feedback to improve their work prior to final submission?
Research Question

• How can peer assessment provide evidence of student mastery of learning outcomes?

Peer Review Assessment Setting the Stage

• Signature assessments are chosen by department chairs for inclusion in selected courses.
  - Are assignments appropriate for inclusion in the student’s portfolio?
• All signature assessments are aligned to course objectives and learning outcomes.
Peer Review Assessment Setting the Stage

- Peer review is an interactive capability within the Canvas LMS.
- Currently, 38 courses in master’s programs have signature assessments with a peer review component.
- Peer review is a pre-step to final submission of a signature assessment. The peer review portion of the assignment is non-graded.
- The professor assigns peer review partners in the LMS.
- Each student is directed to submit the draft of the signature assessment for peer review.
- Partners review and critique each other’s papers.

Peer Review Assessment Setting the Stage

- Peer review tools:
  - Rubric aligned to academic outcomes (identical to the rubric the professor uses to grade final signature assessment)
  - Comments within each rubric category
  - Comments in a discussion format – upload of critique
  - Tracked changes and comments in document
Evaluation Tools

Study 2 Design

• The 38 courses with peer assessments spread across all master’s degree programs served as the data pool for the study.
• Random term was selected from 8 terms in 2013.
• From the total courses with peer reviews, 25% of the courses were randomly selected.
• From the selected courses, 25% of the sections in the identified term were randomly chosen.
• From each identified section, 25% of the students were randomly chosen.
### Study 2 Design

<table>
<thead>
<tr>
<th></th>
<th>Curriculum &amp; Instruction</th>
<th>Educational Leadership</th>
<th>Educational Leadership (TX)</th>
<th>Core</th>
<th>C&amp;I ESL/Bilingual</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term (1–8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Total # of Sections Peered Assessed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>38</td>
</tr>
<tr>
<td>Randomly Selected Course (25% of all courses of 10)</td>
<td>1. CI5333</td>
<td>1. EL5033</td>
<td>1. ED5555</td>
<td>1. CI5123</td>
<td>1. CI5153</td>
<td>1. BE5013</td>
</tr>
<tr>
<td>Number of Sections Per Selected Course (25% of total sections per selected course)</td>
<td>1(13)</td>
<td>1(13)</td>
<td>1(13)</td>
<td>1(13)</td>
<td>1(13)</td>
<td>1(13)</td>
</tr>
<tr>
<td>Number of Students Randomly Selected (25% of total per randomly selected section)</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Number of Selected Students Participating in Peer Assessment Per Course</td>
<td>7/8</td>
<td>8/9</td>
<td>8/9</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
</tr>
</tbody>
</table>

### Guiding Question 1

- What is the level of student involvement in the peer review assessment process?
Peer Review Level of Involvement (87%)  
n = 53 students in sample

Peer Reviewers Completing Scoring Rubric (85%)  
n = 46 participants of the 53 sampled
Peer Reviewers Using Tracked Changes (24%)
n = 46 participants of the 53 sampled

Peer Reviewers Making Rubric-Related Comments (96%)
n = 46 participants of the 53 sampled
Guiding Question 2

• To what extent are students applying peer feedback to improve their work prior to final submission?

Students Applying Peer Review Feedback Before Final Submission (63%)

n = 46 participants of the 53 sampled
Peer Review Feedback

<table>
<thead>
<tr>
<th>Course Objective Aligned to Program Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify methods to evaluate learner motivation and characteristics and contextual factors that affect learner motivation. (Instructional Program, Learning Environment)</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>CIS5333 Student Engagement - Assignment Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>In this module's Application, you will examine and reconstruct an existing curriculum unit through the lens of student engagement and motivation. In the process, you will apply the ARCS Model of Motivation and the TARGET framework.</td>
</tr>
</tbody>
</table>

You did a great job describing how the ARCS Model of Motivation is incorporated in the unit and what specific modification you would make to improve the unit. I think adding concrete ocean animals would increase the attention of your students. I also like your “frog-tastic” wall. I think it is a great way to display students work.

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Peer Review Feedback

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</table>

I enjoyed reading the unit you developed. I also teach Westward Expansion, so it was interesting to read someone else's perspective on teaching the content. I think your unit does focus on increasing intrinsic motivating and engaging students. Your paper was well written, but I think in order to make your points more powerful it would be helpful to incorporate more research. For example, you could cite why your choice of instructional activities are engaging and motivating. Finally, there were some minor APA errors. I have uploaded an edited paper with my formatting changes in red. Thanks!

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### Peer Review Feedback

<table>
<thead>
<tr>
<th>Course Objective Aligned to Program Outcomes</th>
<th>EDX5153 Research Methods - Assignment Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explain the characteristics of action research and the process for conducting a research project (Vision for Learning, Instructional Program)</td>
<td>In this module's Application, you will describe the methodology you will use to collect the data for your study. Your methodology is your data collection plan.</td>
</tr>
</tbody>
</table>

You're introduction definitely addresses a need for literacy improvement and very good use of data to support your need. I would recommend a little more specifics in the questions such as What effective strategies can be used to increase classroom journal writing among low socioeconomic African American students? The journal articles you selected provide good information and are directly linked to your research questions. I would recommend narrowing your focus. There are too many variables to keep track of with three separate strategies. The use of data is a good foundation, perhaps tying the questions together to address a single strategy would be more manageable for the timeframe we are working with.

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<table>
<thead>
<tr>
<th>Course Objective Aligned to Program Outcomes</th>
<th>BE5013 Foundations of ESL and Bilingual Education - Assignment Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe formal and informal assessment procedures and instruments (language proficiency and academic achievement) used in ESL programs (Assessment)</td>
<td>In this module, you will continue work on your unit by designing a formative assessment and rubric to measure student performance and an intervention activity for those who do not master an objective outcome for the first time.</td>
</tr>
</tbody>
</table>

I really like your unit. It seems like you have some great ideas to teach students about immigration. I had a bit of a hard time getting the full idea of your activity - I think it would be helpful to describe exactly what you are having the students read and answer in the first paragraph. One other idea - perhaps for your intervention, you could have the students complete summary outlines or graphic organizers to go along with the text, as they are reading it. I often find this to be helpful when I'm working with students who have difficulty understanding a longer text. Nice work.
Peer Review Feedback

<table>
<thead>
<tr>
<th>Course Objective Aligned to Program Outcomes</th>
<th>BE3013 Foundations of ESL and Bilingual Education - Assignment Description</th>
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<td>Describe formal and informal assessment procedures and instruments (language proficiency and academic achievement) used in ESL programs (Assessment)</td>
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</table>

Also, I think that your intervention is very thoughtful (as to the varying degrees of student participation and abilities). My only question being, are you listing all the students’ similarities and differences on the same chart paper? I feel as though students may wish to compare different cultures than one another (if given the choice). If so, this may get confusing when translating the information from the chart paper onto their individualized Venn Diagrams. For the intervention, if the main goal is to properly complete a Venn diagram by identifying similarities and differences, maybe you could have them vote on one culture they’d like to research/discuss together? This way the information for every Venn Diagram is the same. I hope this makes sense. I am truly impressed by your unit! Awesome Job!

Peer Review Findings

- Peer review is a valuable tool in strengthening the student-centered assessment component of our assessment system.
- Descriptions of 4 tools to be used in the peer review process should be defined in the instructions.
- Criteria for peer review must be well-defined.
- The stronger the construction of the criteria, the more measurable the outcomes.
- Criteria should stress key areas of instructional focus. For example, APA is a college-wide focus, which appeared as a gap in the peer review process.
Overall Findings and Continuous Improvement

Summary of Learner-Centered Assessment Studies

- Evidence we have collected thus far indicates that both pre- and post- self-evaluation and peer review are useful as learner-centered assessment approaches.

- Self-Evaluation
  - Student perceptions indicate that majority of students believe their knowledge and skills as aligned to program outcomes are increasing.

- Peer Review
  - 87% of students participated in the Peer Review process.
  - 73% of students used peer review to improve their final submissions.
  - Students' written comments are reflective of their knowledge of course objectives and program outcomes.
Continuous Improvement

- How can we maximize the use of learner-centered assessment?
- How can we clearly define the criteria for learner-centered assessment?
- How do learner-centered assessment data compare among the programs and degree levels?
- Triangulation of data sources: What other measures might be used to strengthen the learner-centered assessment component of the assessment system?

Future Research

- Compare learner-centered assessment data across programs and degree levels.
- Examine correlation between student and faculty ratings of performance on learning outcomes related to learner-centered assessment.
- Examine consistency of APA emphasis across programs and degree levels.

**REMAINING QUESTION**

- How do we use the learner-centered assessment data to inform decision-making about student performance?
References


Questions

Questions?

Contact Information:
Alana Sloan
lana.sloan@ace.edu

Shawntel Landry
shawntel.landry@ace.edu