Developing and Refining an Instrument to Measure Assessment System Maturity
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Royce L. Robertson, EdD
Le Moyne College
roberrol@lemoyne.edu

Martha J. Larkin, PhD
Walden University
martha.larkin@waldenu.edu

What is assessment system maturity?

- Think
  - 2 minute
  - Think to yourself - when someone says, "our assessment system is maturing," how would you observe it?
- Pair
  - 3 minute
  - Compare notes with a neighbor
- Share
  - 5 minutes
  - Share what resonated with you
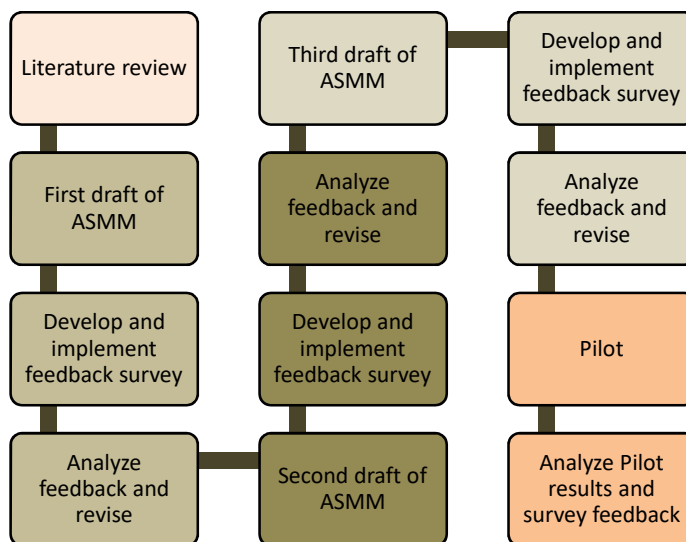
Assessment System Maturity

- Common problem as IHE evolves and grows
- Technology can advance or impede
- A need exists to define and measure:
  - emphasis on assessment and accountability
  - purpose and direction
  - process for planning and evaluating assessment goals
  - potential variables

http://quotesgram.com/img/deming-continuous-improvement-quotes/13172024/

Research Methodology

Literature review	Third draft of ASMM	Develop and implement feedback survey
First draft of ASMM	Analyze feedback and revise	Analyze feedback and revise
Develop and implement feedback survey	Develop and implement feedback survey	Pilot
Analyze feedback and revise	Second draft of ASMM	Analyze Pilot results and survey feedback

Research Question 1

- How is assessment system maturity measured?
  - A literature review revealed instruments used to measure various aspects of outcomes assessment.
  - No instrument located measures maturity as thoroughly as the proposed instrument.

Research Question 2

- How is assessment system maturity measured?
  - Shepard (2009) moving from a "less ordered less valuable state to a well organized structured state"
  - NILOA Assessment Transparency Framework (2011)…defines accessible and useable information…e.g., plans, outcomes, evidence
  - Hammer (2007)…provides basic dimensions of maturity as a process audit…e.g., design, infrastructure, metrics
  - Marchewka (2013)…as a baseline of improving process and planning…e.g., define, repeat, optimize

Research Question 3

- What is the ideal content of an instrument used to measure maturity?
  - Describes the development and delivery of assessment system actions, and the means for reporting what is learned about the system (Shepard, 2009)
  - Use of…meaningful, understandable information about student learning (NILOA, 2011)
  - Action and language emphasize performance of the organization (Hammer, 2009)
  - Describes maturity as observable trends across courses, programs, and "measures of assurance of learning" (Marchewka, 2013)

Assessment System Maturity Matrix (ASMM) Phases

Phases

- Preliminary Conditions
- Plan
- Build
- Implement
- Evaluate

Operational Outcomes

- Use literature review as a way of developing the first draft of the ASMM
- Perform the research in cycles to allow regular development and revision of subsequent ASMM drafts
- Create final instrument version using an instrument development methodology
  Richey & Klein (2005), Type 1

ASMM Design

- Emphasis of study is on design of the ASMM
  - Design mirrors common rubric construction

Element/Essential Question	Maturity Level				Not Applicable	No Evidence
	1: Start	2: Low	3: Medium	4: High		
PRELIMINARY CONSIDERATIONS						

Other sections:
Plan
Build
Implement
Evaluate

ASMM Content

- Phases of content revision
  - Preliminary work
    - Conduct Document and Literature Review
  - First cycle
    - Implement Process: Develop, Distribute, Collect Data, Analyze, Revise
  - Second cycle
    - Repeat "Process" from First Cycle
  - Pilot
    - Repeat "Process"
  - Revision and Practice

The ASMM

Element/Essential Question	Maturity Level				Not Applicable	No Evidence
	1: Start	2: Low	3: Medium	4: High		
PRELIMINARY CONSIDERATIONS						
PC1. Outcomes - Existence: At what levels of the institution do outcomes exist?	Outcomes are written for a specific segment of the institution, including either courses, programs, departments, schools/colleges, or the institution, but not more than one of these.	Outcomes are written for two specific segments of the institution, including either courses, programs, departments, schools/colleges, or the institution, but only two of these.	Outcomes are written for three specific segments of the institution, including either courses, programs, departments, schools/colleges, or the institution, but only three of these.	Outcomes are written for courses, programs, departments, schools/colleges, and the institution.		

This is an example of one row in the ASMM.

ASMM Themes

- Outcomes
- Structure
- Leadership
- Recognition
- Data
- Reporting
- Discussion
- Accreditation

Findings: First Cycle, Content

- Participants were asked to rank a list of 15 items related to assessment system maturity.
- The analysis of the resulted identified the ranked areas for assessment system maturity:
  1. Continuous Improvement (Evaluate)
  2. Data Analysis (Implement)
  3. Data Collection (Implement)
  4. Faculty Involvement (Build)
  5. Presence of an Assessment Team (Build)
- Ranked list did not prioritize "Plan" as high in the list
  - Not consistent with maturity models such as Hammer (2007), Marchewka (2013), etc.
  - **What does this mean in terms of your institution?**

Findings: First Cycle, Design

- Participants were asked to suggest ASMM design improvements based on one criterion (row).
- Feedback indicated the following considerations:
  - The ASMM should have four levels (i.e., columns)
  - The levels should be ordered left to right, lowest to highest
  - The criteria (i.e., rows) should have labels and numbers (e.g., PC1. Outcomes - Existence)
  - The criteria should be guided by essential questions (e.g., At what levels of the institution do outcomes exist?)
  - The criteria should allow for Not Applicable (N/A)
  - The criteria should allow for No Evidence (N/E)

The ASMM

Element/Essential Question	Maturity Level				Not Applicable	No Evidence
	1: Start	2: Low	3: Medium	4: High		
PRELIMINARY CONSIDERATIONS						
PC1. Outcomes - Existence: At what levels of the institution do outcomes exist?	Outcomes are written for a specific segment of the institution, including either courses, programs, departments, schools/colleges, or the institution, but not more than one of these.	Outcomes are written for two specific segments of the institution, including either courses, programs, departments, schools/colleges, or the institution, but only two of these.	Outcomes are written for three specific segments of the institution, including either courses, programs, departments, schools/colleges, or the institution, but only three of these.	Outcomes are written for courses, programs, departments, schools/colleges, and the institution.		

This is an example of one row in the ASMM.

Findings: Second Cycle, Content

- Participants were asked to suggest ASMM content improvements based on the entire instrument.
- Feedback from participants indicated the following content considerations:
  - The criteria clearly should differentiate among levels of the institution (e.g., course, program, school, institution).
  - There were no suggestions regarding missing internal forces (i.e., faculty involvement, budget, etc.).
  - There were multiple suggestions that the external forces were overestimated (i.e., too much emphasis on accreditation).
  - There was consensus that the essential questions made the criteria (rows) more meaningful.

Findings: Second Cycle, Design

- Participants were asked to suggest ASMM design improvements based on the entire instrument.
- Feedback from participants indicated :
  - There were multiple suggestions that the PBIE structure needed to be more visible in the ASMM design
  - There were multiple suggestions to include "prerequisite" assessment work, which inevitably became titled "Preliminary Considerations".
  - There were many disparate suggestions on the titles of the performance levels
    - Lack of consensus resulted in no change (e.g., Start – 1, Low – 2, Medium – 3, High – 4)

Findings: Pilot - PC

- Participants were asked to evaluate their own institution using the ASMM.
- Results of the pilot indicated the following about the **Preliminary Consideration** section:
  - The example implies that the **Low to Medium** levels may not align appropriate with the basic indicators of maturity models **(larger working groups are prerequisite for maturation).**

Data Example: Pilot - PC

| PC5. Assessment Structure: How are those responsible for assessment related work defined and organized?	n = 7	%
Start: ad hoc, short term, part time, or project oriented	0	0%
Low: individual(s), smaller duties, smaller scale	3	42.9%
Medium: multiple individuals, similar tasks coordinated	3	42.9%
High: refined structure, sustainable	1	14.3%
Not Applicable	0	0%
No Evidence	0	0%
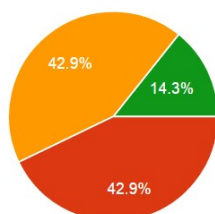
Findings: Pilot - Planning

- Feedback from participants indicated the following implementation results about the **Planning** section:
  - The example implies that the **Low to High** levels may not align appropriate with the basic indicators of maturity models **(leadership is driven by survival and reaction).**

Data Example: Pilot - Planning

| P5. Assessment Leadership Style: What is the assessment leadership style?	n = 7	%
Start: unaware, minimal action	0	0%
Low: survival	2	28.6%
Medium: act on existing, plan for potential	5	71.4%
High: systematic anticipate, plan, act	0	0%
Not Applicable	0	0%
No Evidence	0	0%
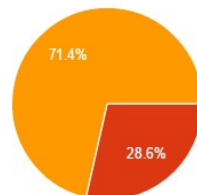
Findings: Pilot - Build

- Feedback from participants indicated the following implementation results about the **Build** section:
  - The example implies that the **Start to High** levels may not align appropriate with the basic indicators of maturity models **(culture shows broad representation of as needed to established practices).**

Data Example: Pilot - Build

| B1. Assessment Culture: Who influences the culture of assessment?	n = 7	%
Start: adhocracy	1	14.3%
Low: working groups	1	14.3%
Medium: hierarchy	4	57.1%
High: professional culture	1	14.3%
Not Applicable	0	0%
No Evidence	0	0%
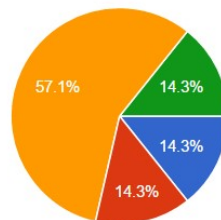
Findings: Pilot - Implement

- Feedback from participants indicated the following implementation results about the **Implement** section:
  - The example implies that the **Low to High** levels may not align appropriate with the basic indicators of maturity models **(leadership is driven by survival and reaction).**

Data Example: Pilot - Implement

| I4. Transparency Definition: How is the institutional definition of transparency determined?	n = 7	%
Start: individuals, limited	2	28.6%
Low: departmental, recommended	2	28.6%
Medium: institutional, shared	2	28.6%
High: institution, adapted	0	0%
Not Applicable	0	0%
No Evidence	1	14.3%
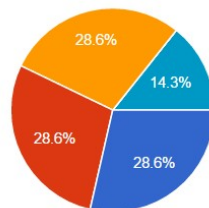
Findings: Pilot - Evaluate

- Feedback from participants indicated the following implementation results about the **Evaluate** section:
  - The example implies that the **Start to High** levels may not align appropriate with the basic indicators of maturity models **(range of practices related to evaluating outcome development process).**

Data Example: Pilot - Evaluate

E3. Outcomes – Development: To what degree are various actions and resources used to evaluate the process for developing outcomes?	n = 7	%
Start: no or little action	2	28.6%
Low: minimal action, based on strengths and weaknesses	1	14.3%
Medium: moderate action, process exists and followed	3	42.9%
High: regular action, process followed and revised	1	14.3%
Not Applicable	0	0%
No Evidence	0	0%
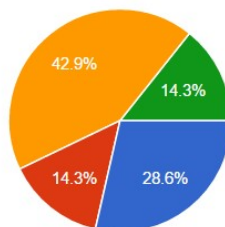
Implications

- How could the ASMM most influence how your institution informs…?
  - Plan
  - Build
  - Implement
  - Evaluate…its assessment system…

Literature

Hammer, M. (2007). The process audit. *Harvard Business Review*. Retrieved from http://hbr.org/2007/04/the-process-audit/ar/1

Marchewka, Jack T. (2013) "Applying the Capability Maturity Model to Assurance of Learning," Communications of the IIMA. *(13)*1, 1-8. Available at: http://scholarworks.lib.csusb.edu/ciima/vol13/iss1/1

National Institute for Learning Outcomes Assessment. (2011). *Transparency Framework*. Urbana, IL: University of Illinois and Indiana University, National Institute for Learning Outcomes Assessment (NILOA). Retrieved from
http://www.learningoutcomesassessment.org/TransparencyFramework.htm

Richey, R. & Klein, D. (2005). Development research methods: creating knowledge from instructional design and development practice. *Journal of Computing in Higher Education. (16)*2, 23-38. Retrieved from
http://myweb.fsu.edu/jklein/articles/Richey_Klein_2005.pdf

Shepard, E. (2009). *Assessment Maturity Model*. Retrieved from http://www.assessmentmaturitymodel.org/