Scenario-Based Learning Assessment Reflection Toolkit

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Assessment Menu Reflection Activity

- **Review the two Student Learning Outcomes (SLOs) you checked off in Activity 1. Choose just one.**

Activity 2 Instructions:

- After choosing your SLO, review the lists below of types of "InClass" assessments and "Final Test Item" assessments.
  - "InClass" assessments tell you how the student is progressing. "Final Test Items" tell you how much the student learned from the class.
- Decide how you want to assess SLO progress and learning in both "InClass" and "Final Test Item" assessments.
- For each, pick the top two best ways to assess student learning. Rank them (1, 2).
- In the blank space where it says "Notes," record the pros and cons of the assessment approach. Be prepared to discuss your choices with the whole group.

Key In Class Assessment Task Types and Definitions

Rank #	**Types**	**Definitions**
	1 - Check in	via writing, discussion Notes:
	2 - Tool Performance	student shows tool proficiency Notes:
	3 - Tracking Progress	student meets benchmarks, deadlines Notes:

Key Final Test Item Types and Definitions

Rank #	**Types**	**Definitions**
	1 - Short Answer Task, Conceptual Knowledge	Student is asked to explain content-related conceptual reasoning in a short answer

		Notes:
	2 - Short Answer Task, Professional Skill	Student is asked to ask questions of clients, make presentations, or troubleshoot team issues in a short answer Notes:
	3 – Computational Task	Student is asked to complete an algorithm to solve a problem Notes:
	4 – Procedural Task with Tools	Student is asked to demonstrate proficiency with tool use procedures Notes:
	5 - Mapping Task	Student is asked to fill in a flow chart or concept map to show complex planning and understanding Notes:
	6 - Other	Please describe Notes:

Assessment Reflection Project Task Interview

Select an instructional activity that you believe is difficult-to-assess and that teaches a critical Student Learning Outcome (SLO).The SLO may be institutional level or departmental level.

For example, it may be a lesson that you intend to use to address SLOs that involve:

- Students working on teams
- Students demonstrating citizenship
- Students producing a product most commonly found in the workplace, not school
- Students demonstrating good communication skills
- Students demonstrating good problem solving skills

Interview Activity Instructions:

- Pick a partner
- Decide who will be interviewed first.
- Take 5 minutes to interview the first instructor about a single project-based lesson. Fill out the form below as you do so.
- Take 5 minutes to interview the second instructor about a single project-based lesson. Fill out the form below as you do so.
- Decide who will volunteer to share the results of the interview with the whole group.

Interview

1. Please take 1 minute to describe the learning activity. Note below.

2. What are the 2 MOST IMPORTANT SLOs that you want students to learn when doing this task? (*Check off all that apply and then describe the specifics in the Specific Knowledge/Skills box*)

✓	**Families of Knowledge/Skills**	**Specific Knowledge/Skills in Your Domain (please describe)**
	Problem-Solving (See bulleted list below for specific phase)	
	o Framing a problem	
	o Research and analysis	
	o Generating a product	

	o Applying tools	
	o Making inferences and reaching conclusions	
	Teamwork	
	Presentation and communication	
	Other (describe)	

3. What knowledge and skills do students need to have before doing this activity?

4. What student behaviors or products show you students have acquired *the single most important knowledge or skill* you have listed above?

Design Pattern Template
[Enter title of design pattern]
Domain: [Enter specific technical field]

	Description	How I assess this now
Summary	In this design pattern, a student is [describe what problem is presented to the student]. Can students [describe key question about student skill answered by assessment].	[This is where the instructor will describe how assessment of such skills occurs in the class and note any changes in approach from going through the PADI approach.]
Rationale	It is important for students to have an opportunity to [describe the specific practice in the assessment task] because [describe how the practice is relevant to real world].	
Focal KSAs	▪ Skill of [enter what student is doing technically or cognitively or socially] ▪ Skill of [enter what student is doing technically or cognitively or socially] ▪ Skill of [enter what student is doing technically or cognitively or socially] ▪ Etc.	
Additional KSAs	▪ Knowledge of [enter background assumed but not taught] ▪ Knowledge of [enter background assumed but not taught] ▪ Skills of [enter skills assumed but not taught] ▪ Ability to [enter abilities assumed but not taught]	
Potential observations	▪ [Starting with a verb, describe what an instructor can observe a student doing to provide evidence of the relevant knowledge, skills and abilities. Provide one to match each focal KSAs above] ▪ Second observation ▪ Third observation ▪ Etc.	
Potential work products	▪ [Starting with a verb, describe what written or drawn documents or performances a student can produce to provide evidence of the relevant knowledge, skills and abilities. Provide one to match each of the focal KSAs above]	

	Description	How I assess this now
	▪ Second work product ▪ Third work product ▪ Etc.	
Potential rubrics	[Enter rubric here; if borrowed and adapted from an existing source, note Web link to source in right hand column] 3= highest performance 2= 1= 0=lowest performance	
Characteristic features	▪ [Enter aspects of assessment activity that must be included to elicit evidence that students can perform all the relevant knowledge, skills, and abilities listed above; May address issues of number of times, degree of difficulty, context or materials for performance, number of times student performs the task and the stimuli are presented] ▪ Second aspect ▪ Third aspect ▪ Fourth aspect ▪ Fifth aspect ▪ Etc.	
Variable features	▪ [Enter aspects of assessment activity that may be varied according to specific demands of instructor in a given domain; Changing these features makes the activity more or less difficult or complex, such as the number of factors a student must consider or steps a student must take to reach a solution. Changing these features may also make the activity more adaptable to different classroom settings and needs, such as changing the number or composition of students on a team or the modes of performance (written, oral, Web-based)] ▪ Second aspect ▪ Third aspect ▪ Fourth aspect ▪ Fifth aspect	

	Description	How I assess this now
	▪ Etc.	

Extended Interview Protocol
"PADI" starter questions for scenario-based design instructors

Goals:

- Elicit instructors' principal learning goals to prioritize design pattern development
- Elicit key content knowledge, skills, and abilities needed to solve problems
- Elicit what students do when working in groups on the scenario-based tasks

Assessment Design Pattern Elicitation Interview

Overall guidelines:

- *General goal is to let the instructor describe the learning task he/she has designed, taking up to 10 minutes to do so and then focus on the essential features of the problem solving tasks that students are learning*
- *For developing individual learning assessment design patterns, the interviewer should listen carefully to the instructor's description of the problem, and try to frame the problem type along three continua: well-structured to ill-structured; complex to simple; domain specificity to domain generality (see description bullet points below in interview)*
- *For developing group learning assessment design patterns, the interviewer should listen carefully to the instructor's description of how he/she teaches students to work on teams, ensure individual ownership and contributions to the task, and ensure completion of a quality deliverable.*
- *By close of interview, interviewer will have an outline of the key features of design pattern for review and discussion by PADI experts, which will be filled in after the interview on the PADI Design Pattern Template.*

Interview Protocol

1. Please take up to 10 minutes to walk me through each step of the scenario-based task you have designed. (Let instructor provide full description, and ask minimal questions, only to resolve problems of clarity)

2. Let's create a list of the learning goals in this task. (Do this jointly, noting points that seem like possible content learning elements if the instructor does not volunteer some that seem relevant to you.) What knowledge do they need to do it? What skills do they need? What abilities do they need? (Note each in writing and then review that list with the instructor and ask him/her to explain which KSA's are *prerequisites for the course* and which are *learned during the course.*

3. Let's now list the ways students demonstrate knowledge, skills, and abilities in your task. (Do this jointly also, again prompting the instructor as needed to think of *observable behaviors* and *work products*.)

4. Where is problem solving occurring in this task? Please describe the one or two problems that you think are most important and why. (What's most important here is getting the instructor's framing of the problem – here is where your follow up questions might focus on its structuredness [e.g., how much information is given to the student to solve the problem; how much are rules provided? What is left for the student to formulate?], complexity [e.g., how many possible solutions are there to this problem? How will you determine which approach is more successful than another?], and domain specificity [e.g., how much is this a type of reasoning that only people in this field of work use?] **Use the slider scales below to categorize.**

Structuredness

- *Tightly structured:*
  - *All elements of the problem are presented to learners*
  - *Application of limited number of regular rules and principles organized in a predictive/prescriptive way (Jonassen)*
  - *Knowable solutions*

  VS.

- *Loosely structured:*
  - *Possible relevant problem elements not known with confidence*
  - *Possible multiple solutions, solution paths, or no solution*
  - *Multiple evaluation criteria, uncertainty about rules, concepts, principles necessary for solution*
  - *Requires learner to make judgments and express opinions*

0 1 2 3 4 5 6 7

Complexity

- *Complex:*
  - *Multiple issues, functions, or variables in problem*
  - *High degree of connectivity among them*
  - *Multiple functional relations among them*
  - *Dynamic and changing problem states (Funke, 1991)*

  VS.

- *Simple:*
  - *A low number of issues, functions, or variables in problem*
  - *Low degree of connectivity among them*
  - *A few key functional relations among them*
  - *Stable problem state*

0 1 2 3 4 5 6 7

Specificity

- *Domain specificity:*
  - *Problems are situated, embedded, and therefore dependent on the nature of the context or domain*
  - *Problems require a specific type of reasoning unique to a given domain*

  VS.

- *Domain general:*
  - *Problems are grounded in general logic*
  - *Problems invoke "general or broad methods" or reasoning strategies*

0 1 2 3 4 5 6 7

5. Where does team work occur in this task? (Prompt instructor to discuss how he/she supports student learning about key aspects of teamwork: teamwork processes such as assigning roles, running meetings, teaching each other, communicating; deliverable management processes such as setting interim deadlines, tracking slipping tasks; and, individual team member accountability processes, such as completing one's tasks, contributing) **Use the slider scales below to categorize.**

Teamwork Processes

- *Heavy teamwork process emphasis:*
  - *Instruction focuses on how teams divide, assign, and organize tasks*
  - *Instruction focuses on having complementary expertise that students share with each other reciprocally*
  - *Instruction focuses on strategies for communication and clarification around conflict*

  VS.

- *Low teamwork process emphasis:*
  - *Instruction does not address how teams divide, assign, and organize tasks; students can "figure out" as they go, and their success is not tracked.*
  - *Instruction does not strategically select students for teams so that there is a mix of skill or experience levels.*

- *Instruction does not address the strategies for resolving conflict.*

0	*1*	*2*	*3*	*4*	*5*	*6*	*7*

Deliverable Management Processes

- *High deliverable management focus:*
  - *Instruction focuses on how teams set interim deadlines and organize tasks by complexity*
  - *Instruction tracks students' interim progress*

  VS.

- *Low deliverable management focus:*
  - *Instruction lets teams figure out own way of getting the project done.*
  - *Instruction does not track students' interim progress*

0	*1*	*2*	*3*	*4*	*5*	*6*	*7*

Individual Team Member Accountability Processes

- *High student accountability focus:*
  - *Instruction focuses on how to ensure individual team members complete their work*
  - *Grading takes into account individual contribution*

  VS.

- *Low student accountability focus:*
  - *Instruction does not provide accountability strategies*
  - *Grading is for whole team*

6. Based on what you've told me, it sounds as though this is a ____ (tightly/loosely) -structured problem of _____ (high/medium/low) complexity that is solvable through reasoning that is _____ (strongly/loosely) associated with this field of work. It seems that knowledge of _____ and skills of _____ are most important to solving it. Would you agree with this characterization? (Get instructor to elaborate and provide more specificity) Also, from what you've told me, it sounds as through you're teaching students ____ (some/no) strategies for teamwork, ____ (some/no) strategies managing deliverable deadlines, and ____ (some/no) strategies individual team member accountability.

Next steps

1. Write up notes that debrief the instructor's responses to the above questions, and then propose an outline of 1-2 design patterns for review and development by PADI experts.

PADI Design Layers and Design Pattern Attributes

PADI Design Layers

Layer	Role	Key Entities	Selected Knowledge Representations
Domain Analysis	Gather information about the domain of interest that has direct implications for assessment: how knowledge is constructed, acquired, used, and communicated.	Domain concepts, terminology, tools, knowledge representations, analyses, situations of use, patterns of interaction.	Content standards, representational forms, symbol systems in domain
Domain Modeling	Express assessment argument in narrative from based on information from domain analysis.	Knowledge, skills, and abilities: characteristic and variable task features, potential work products, potential observations.	PADI design patterns, assessment argument diagrams, “big ideas.”
Conceptual Assessment Framework	Express assessment argument in structures and specifications for tasks and tests, evaluation procedures, measurement models.	Student, evidence, and task models: student observables and task variables, rubrics, measurement models, test assembly specifications, PADI templates and task specifications.	Algebraic representations of measurement models, item generation models, rubrics, algorithms for automated scoring.
Assessment Implementation	Implement assessment, including presentation-ready tasks and calibrated measurement models.	Task material (including all materials, tools, affordances); pilot test data to hone evaluation procedures and fit measurement models.	Algorithms to render tasks, interact with examinees, and evaluate work products
Assessment Delivery	Coordinate interactions of students and tasks: task- and task-level scoring, reporting.	Tasks as presented: work products as created, scores as evaluated.	Renderings of materials., score summaries, IMS/QTI results files.

Design Pattern Attributes and their Definitions

Attribute	Definition
Rationale	The connection between the focal knowledge, skills, and abilities (KSAs) and what people do in what kinds of circumstances.
Focal KSAs	The primary KSAs targeted by this design pattern.
Additional KSAs	Other KSAs that may be required by tasks written under this design pattern.
Potential Work Products	Some possible things one could see students say, do, or make that would provide the opportunity to get evidence about the KSAs.
Potential Observations	Features of the things students say, do, or make that constitute the evidence.
Characteristic Features of Tasks	Aspects of assessment situations that are necessary in some form to evoke the designed evident.
Variable Features of Tasks	Aspects of assessment situations that can be varied in order to shift difficulty or focus of evidence.

Scenario-Based Task Critique and Revision Reflection Activity

If there is a core problem that students need to solve in your learning activity, how would you characterize that problem on the scales below?

Problem Features	Scale
Structuredness *Tight:* *All problem elements presented;* *Prescribed solution rules;* *Known solution* *Loose:* *Problem elements not known;* *Uncertainty about rules;* *Multiple possible solutions*	*Loose* *Tight* *0 1 2 3 4* ☐ ☐ ☐ ☐ ☐ ☐ ☐
Complexity *Complex:* *Multiple interconnected variables;* *Dynamic problem states* *Simple:* *Low number of isolated variables;* *Stable problem state*	*Simple* *Complex* *0 1 2 3 4* ☐ ☐ ☐ ☐ ☐ ☐ ☐
Domain Specificity *Specific:* *Problems dependent on the nature of the context* *Must solve with reasoning unique to domain* *General:* *Problems grounded in general logic* *Can use general reasoning strategies*	*General* *Specific* *0 1 2 3 4* ☐ ☐ ☐ ☐ ☐ ☐ ☐