Reexamining Three Held Assumptions about Creating Classroom Assignments That Can Be Used for Institutional Assessment

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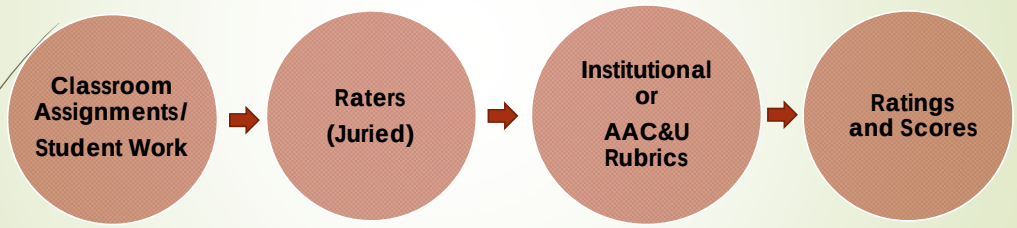
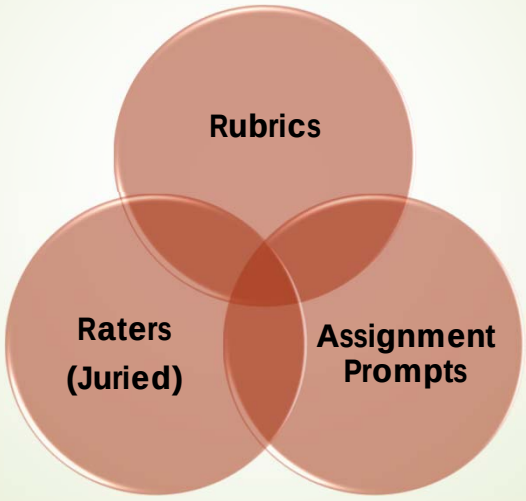
Workshop Objectives

- Examine the efficacy of three assumptions in existing frameworks in assignment design for institutional assessment
- Examine implications for:
  - Faculty Practice and Classroom Assessment
  - Institutional Assessment
  - Faculty development in assignment prompt development
  - Equity and Inclusion
- Enhance our shared understanding of the power of intentionally when designing assignment prompts

What is Course-Embedded Assessment?

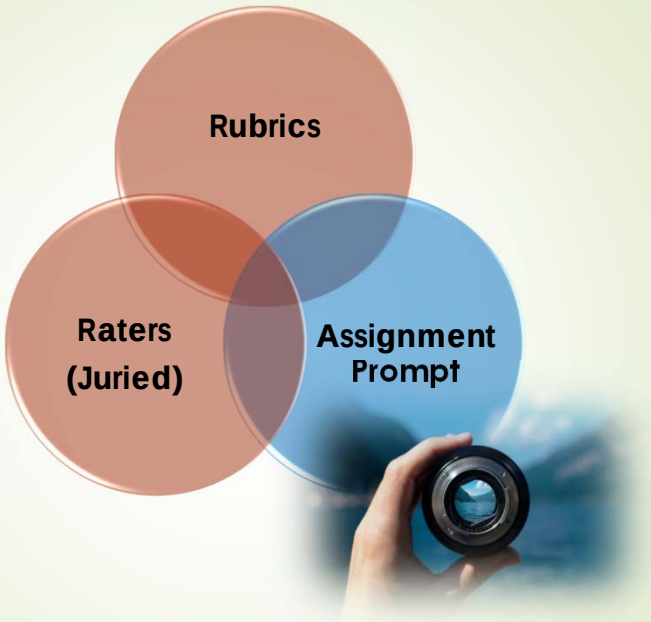


Assumptions: Course Embedded Assessment



Validity Findings From VALUE Institute (AAC&U, 2019)

- Noise in the data
  - Variability in the sample
  - Variability from raters
  - Variability from assignments caused the most noise
    - Assignment Prompts not aligned with elements of the rubric
    - Prompts did not set the target level for student performance
- On the Ground
  - Challenge to get faculty to participate
  - Challenge to find assignments that are aligned with Institutional/VALUE rubrics
  - Challenge to find a representative sample



The Assignment Prompt In Focus

Examining Assumptions of Existing Frameworks

Assumptions of Existing Frameworks

- **Assumption 1**: Heavy focus on the structural elements of a prompt
  - Clarity of instruction, preciseness of language, page limits, style, grammar, due dates (Orcutt, 2018)
  - The Transparency in Learning and Teaching (TILT) (Winkelmes et al., 2016)
    - "purpose," "task," and "criteria."
- **Critique**: Places less focus on the cognitive processes embed within assignment prompts

Assumptions of Existing Frameworks

- **Assumption 2**: A focus on the "Central Task" when creating and assignment prompt
  - (a) the central task(s) of the prompt; (b) how the central task(s) should be undertaken; and (c) establishing the depth and breadth expected in the response (Hutchings et al., 2014, p.8).
  - Example: Write a paper on the efficiency of recycling efforts in a residence hall
- **Critique**:
  - Risks overlooking the developmental complexity and individual processes embedded within a prompt
  - Limits opportunity for faculty to question the implicit assumptions about what they expect from students in a prompt

Assumptions of Existing Frameworks

- **Assumption 3**: Prompts communicate **both** faculty instructions and expectations for student performance
  - Prompts "send signals to students about what faculty think matters, and about what they ***expect*** (emphasis added) from students" (Hutchings et al., 2016, p.7)
  - Faculty development in Charrette and models used in MA focus only on the development of only an assignment prompt
- **Critique**: Does a prompt communicate both faculty instruction and expectation for student performance on a prompt?

Research Methods

- Stage 1: Faculty Development in Assignment Design
- Stage 2: Methodologically examined three assumptions using Qualitative Data and Content Analysis

Stage 1: Making the Implicit, Explicit

- Faculty Development:
  - Created a single prompt and developed grading criteria
  - Faculty created an assignment prompt and corresponding grading instrument (rubric/checklist)
- Faculty compensated to attend
- Faculty implemented prompts and grading criteria in classroom

Data Sources

- Surveys and Focus Groups
  - Four surveys administered at various stages of the prompt creation process
  - Faculty experiences during and after creating prompts
- Content Analysis
  - 25 assignment prompts and 25 grading instruments

Findings

"The challenge was trying to figure out the *balance* between what's enough and what's too much… I think that was the most challenging part." (Biology)

"The challenge was…being detailed but not being so detailed. Striking that *balance*."(Humanities)"

"I'd say all three of my successes, challenges and what's different are probably all answered within the same context of finding a *balance* between the amounts of instruction I provide"(Natural Sciences)"

Finding: "The Challenge of Balance"

Nature of the "Challenge of Balance"

- There was concern that the prompt "might give away too much, give them the answers, which I don't want them to have."
  - "I wanted to provide some direction but really hoped the students would **build** on these prompts… Some did, many didn't."
  - "To provide instruction without doing the assignment for them… I think I made it more accessible for them to **judge** what I'm looking for."
  - "making the assignment structure sufficiently clear and prescriptive while leaving enough room for students to truly show **independent thinking**."
- Desired Difficulties
  - Phrases—"**judge** what I'm looking for," "**build** on these prompts," "show **independent thinking**," "preserving student **creativity"**

Content Analysis of APs and AMs

- Operational Verbs
  - Verbs that are observable and require action
- Bloom's Revised Taxonomy (1986) provided a way to:
  - Analyze cognitive processes in a prompt
  - Developmental progression from lower to higher cognitive levels
- Disclaimer: Tool for analysis not an endorsement of Bloom and its limitations

Bloom's Revised Taxonomy

Dalton and Smith (1986)

Blooms Level	Examples of Verbs
I Remember	Tell, list, describe, relate, locate, write, find, state, name, identify, label, recall, define, recognize, match, reproduce, memorize draw, select, write, recite
II Understand	Explain, interpret, outline, discuss, distinguish, predict, restate, translate, compare, describe, relate, generalize, summarize, paraphrase, convert, demonstrate, visualize
III Apply	Solve, show, use, illustrate, construct, examine, classify, choose, interpret, change, apply, produce, translate, calculate, manipulate, modify
IV Analyze	Analyze, distinguish, examine, compare, contrast, investigate, categorize, identify, explain, separate, advertise, differentiate, subdivide, deduce
V Evaluate	Judge, select, choose, decide, justify, debate, verify, argue, recommend, assess, discuss, rate, prioritize, determine, critique, evaluate, criticize, weigh, value, estimate, defend
VI Create	Create, invent, compose, predict, plan, construct, design, imagine, propose, devise, formulate, combine, hypothesize, originate, forecast

A Sequenced Assignment

- Bloom's Taxonomy

I - Remember	II - Understand	III - Apply	IV - Analyze	V - Evaluate	VI - Create

- Sequenced APs and AMs
  - Moved students in sequence from lower-order to higher-order cognitive processes
  - Analyze energy and water waste in their residence halls used sequential verbs "observe" (I), "collect" (I), "interview" (III), "assess" (IV), "analyze" (IV), and "recommend" (V)
- Not necessary to have all stages in one prompt
- Thoughtfully arranged in sequence of developmental complexity

Example of "Cognitive Leaps"

Discipline	Assignment Prompt
Natural Sciences	"state the constraints or conditions" of a mathematical formula and "state the definition" **(I)** of a chemical operation. Then, "suppose you were to write a physical chemistry textbook and that includes the above derivation, identify the most critical steps in the derivation that would need to be included," **(VI)**
Humanities	"read the chapter(s) assigned for each unit" **(I)** and "take note of the essential contents as you read or re-read the assigned selection" **(II).** "craft 10 unique multiple choice questions that adequately challenge you and your peers to access and review the meanings &/or significance of the unit material. **(VI)"**

I - Remember	II - Understand	III - Apply	IV - Analyze	V - Evaluate	VI - Create

Cognitive Leaps (Nicholas, Atwood & Storandt, (2020)

Course Level	I	II	III	IV	V	VI
100	x	x			x	x
100	x	x			x	x
100		x				x
100		x				
100		x				x
100	x					x
100			x		x	
100		x		x		x
200		x	x	x		x
200	x				x	x
200	x	x				x
200		x	x			x
200		x		x	x	
200				x		x
200	x					x
200					x	x
200	x	x		x		
300			x		x	x
400				x		x
400	x	x				x
400	x	x				
400			x			
400		x	x		x	
400	x	x		x		x

Patterns Observed

- 20/25 leapt over one at least 1 cognitive stage
- 12/25 leapt over at least 2 cognitive stages
- 6/25 leapt over at least 3 cognitive stages
- 17/25 required performance at level (VI) of the taxonomy

Thoughtful Cognitive Leaps

- No evidence that faculty used Cognitive Leaps thoughtfully
  - Are you aware of the distance you are expecting students to leap?
  - What assumptions are you making about what students know and should know?
  - Are those assumptions borne out in your pedagogy and curriculum?
  - Did you teach for it or are you assuming they earned it elsewhere?
    - Do you know where in the program curriculum that was taught?
  - Will students know there is an expectation to leap from the prompt?
    - Would it be helpful to tell students that you expect them to "leap" and "build"

A gap between faculty instructions (prompt) and expectations (grading instrument)

- Cognitive Leaps shrink in the grading instrument

Discipline	Assignment Prompt	Assessment Method
Humanities	Write (**I**) an essay concerning a contemporary media story. "discuss (**II**) how the observation was made, corroborated and transmitted"; "discuss how the observation connects to the larger theme or story." **(II)**	"explain" (**II**), "consider" (**II**), "examine" (**III**), "compare" (**IV**), "distinguish" (**III**), and "interpret" (**III**)

- Observed a greater variety of verbs used in grading instrument

A gap between faculty instructions (prompt) and expectations (grading instrument)

- Faculty articulated a more detailed sequencing of expectations in the rubric
- The prompt, in some cases, did not completely contain the benchmark of faculty expectation for student performance
  - English introductory course prompted students to “find” (I), “write” (I) and “summarize” (II).
  - Rubric also expected students to “compare” (IV) and “propose a solution to an issue” (VI).
- Problematic when using such prompts for assessment

Assumptions not borne out in faculty approaches

- The “Challenge of Balance” cannot be addressed by a focus on prompt anatomy, structure and clarity
- Faculty were not explicitly focused on how developmental cognitive processes are scaffolded within an assignment, course and much less across courses
- There exists a gap between instruction and expectation as expressed in the assignment prompts
  - In the minds of faculty and
  - As expressed in the assignment prompt

Why Status Quo is Problematic?

Unquestioned Assumptions

- Drawing from frameworks that were primarily developed for developing assignments for the classroom
- Applied it to the institutional assessment process without much evaluation of their efficacy for our work
  - We still find our work with VALUE and institutional assessment challenging
- Existing frameworks are necessary but insufficient
- We need a framework that is focused explicitly on creating classroom assignments that can be available for institutional assessment

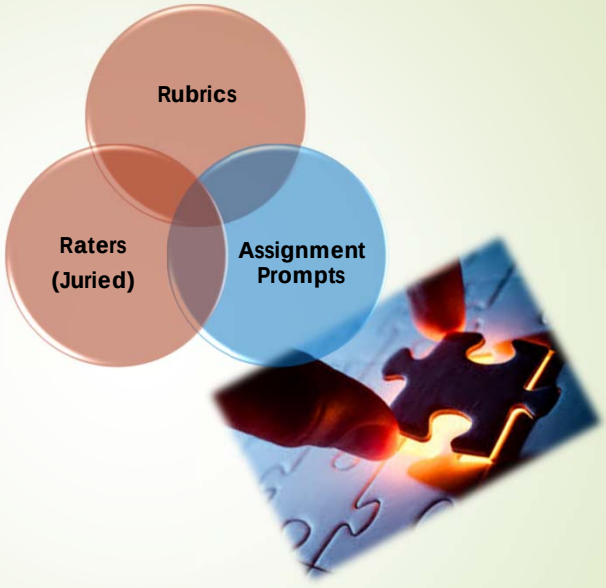
Cognitive Leaps and our work with Equity and Inclusion

- Contribute to biased outcomes especially for the underrepresented and underserved students we seek to serve
  - Who can navigate cognitive leaps better?
  - Who might find them difficult to navigate?
- Impact on grades in the classroom?
- Results of institutional assessment or state-wide work
- Need a framework that brings more thoughtfulness to the way assignments are designed for use in assessment

Misalignment between the source of assessment and assessment method

- Poses a serious threat to the validity of using course embedded assessments to assess student learning at the institutional, state or national levels
- Need a framework that focusses attention on alignment among learning objective, source of evidence and assessment method

Classroom Assignments
&
Classroom Assignments that are available for Institutional Assessment



We will need to (RE) create that piece of the puzzle

Discussion Groups – Implications of Cognitive Leaps and Misalignment:

1. Classroom (a) pedagogy and grading (b) Equity and Inclusion
2. Institutional Assessment: (a) Assessment process and results (b) Equity and Inclusion
3. Faculty development in assignment design:
   a) Specific ways can we (RE)think our approach to faculty development in assignment design
   b) How can we align learning objective (intent), assignment prompt (means) and Rubrics (method) and yet retain academic freedom?
4. Our work with AMCOA and VALUE Institute
   a) implications of process and results for Equity and Inclusion
   b) System wide efforts to improve institutional capacity

Coming Soon

The Cognitive Leaps Framework for Assignment (re)Design