

# ***Assessing and Addressing Prior Knowledge to Support Student Learning***

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# Workshop Outline

Time	Activity
1:15- 1:25am [10 minutes]	Introductions & Outcomes
1:25 - 1:35am [10 minutes]	The Role & Uses of Prior Knowledge & Experience in Learning
1:35 - 1:50am [15 minutes]	Examples of Prior Knowledge in Your Work (small groups)
1:50 - 2:05pm [15 minutes]	Assessment Methods & Their Utility (small groups)
2:05 - 2:15pm [10 minutes]	Report Back

# Workshop Outcomes

1. Identify, based on the current research and your own experience in the discipline in which you teach, common examples of prior knowledge students bring to your classroom that act as impediments to learning.
2. Discuss and assess the usefulness of a variety of strategies to assess the breadth and depth of students' prior learning related to your discipline.
3. Outline potential strategies to more effectively address students' preexisting conceptualizations to facilitate the achievement of learning outcomes.

# What is prior knowledge?

- ❖ All knowledge learners have when entering a learning environment that is potentially relevant for acquiring new knowledge (Biemans & Simons , 1996).
- ❖ The whole of a person's knowledge, including explicit and tacit knowledge, metacognitive and conceptual knowledge (Dochy & Alexander, 1995).
- ❖ This includes:
  - Background knowledge
  - Intellectual development
  - Cultural background
  - General experiences and expectations

- ❖ Learners build knowledge out of their experiences
- ❖ Prior knowledge and experience affect how the learner:
  - Perceives new information
  - Organizes new information
  - Makes connections between ideas
- ❖ Paradox of Continuity:
  - new knowledge is constructed from old knowledge so prior knowledge is simultaneously necessary and problematic

Equilibrium

Assimilation

Accommodation

Schema

- Assimilation: fit new information into existing conceptualization/schema
- Accommodation: change existing conceptualization/schema in order to fit new information

## Know what learners bring in order to:

- ❖ Deliberately link old to new
- ❖ Help students become aware of prior knowledge & experiences and use them
- ❖ Check for faulty prior knowledge regularly
- ❖ Use analogies more effectively



In small groups:

1. Think of a time when you were surprised by a student or staff member interpreting your instructions or explanation of a concept in a way that you did not anticipate.
2. Is it possible that their prior knowledge and experience influenced their understanding in ways you did not anticipate?
3. Share your examples of how prior background knowledge, intellectual development, cultural background and or general experiences and expectations influenced understanding.

- Self-Assessments
- Performance Based Assessments
- Classroom Assessment (group level)
- Concept Maps
- Concept Tests

In small groups:

1. Have you used any of these methods to assess prior knowledge and/or experiences of students or teams?
2. How did they inform your work? The achievement of outcomes?
3. Are there effective methods of assessment that you have used that are not described here? If so, please describe them.
4. Are there any assessment methods described here that you see as potentially useful? Potentially detrimental? How so?

## Highlights/Summary of Discussion

- One minute papers can work well to get a read on prior knowledge but many students need more processing time.
  - One suggestion is to better use LMS to grasp their knowledge. Even for a short, unmarked paper “in class and quick” can produce anxiety.
- Self-assessments in general are an interesting tool. We all do variations as a part of good teaching and learning and try to assess pros and cons. Students, on the other hand, are so tied to marks. Un-marked assessments and self-assessments may not produce effort.
- One way to offset this problem is with interactivity and fun. A game of some kind while you gather information re. prior learning is ideal. Especially if your course is, for example an non-core English or Social Science course—its very hard to get buy-in when not a core course. We have to ensure investment which is much more difficult with non-core courses.

## Highlights/Summary of Discussion

- Instructors need to think more about “reflective practice” and what that means. The term has been used a lot. Best lesson on it I have seen—from my son in early elementary school: retell, relate, reflect. The 3 r’s. Retell what happened in your experience. Relate it to the effect it had on your environment. Reflect—what did I learn forward thinking?
  - It is a strong introduction to reflective practice. Could answer specifically about content. Used regularly and it helped me to understand their reflections provided understanding of where the reflection came from. It was interesting and engaging to read about them and about my class.
- We at this table work a lot in context where culture is very important. Not highlighted here. Minority and first nations colleagues and students. Prior learning becomes very complicated in these cultural perspectives and linking them into existing schema. There are many examples/articles out there describing how difficult this can be.
  - How to address knowledge rooted in oral traditions?
  - How to we make these links (“ground of our being”) to higher education?

## Highlights/Summary of Discussion

- I've had very similar experiences with extremely religious students. Many experiences where this background has given students incredible critical analysis skills.
- At the same time some were not open to new ideas and certain kinds of critical analysis. Entire spectrum of beliefs that need to be understood/addressed within disparate groups .
- Picking up on learning and how it is intrinsic to a student and tied to culture. I've asked students to define key concepts in a humanities class. When I've asked them to define a key concept it I've received a full paragraph memorized from textbook. It was not what I wanted but showed clearly that I had made assumptions and that I did not ask for what I was looking for. This learning is not content-specific but when done well we can help students embrace the role of student.

- Asubel, D. P. (1968). *Educational Psychology: A Cognitive View*. Toronto: Holt, Rinehart and Winston.
- Biemans, H. J. A., & Simons, P. R. J. (1996). CONTACT-2: A computer-assisted instructional strategy for promoting conceptual change. *Instructional Science, 24*, 157-176
- Dochy, F. R. C. & Alexander, P.A. (1995). Mapping prior knowledge: A framework for discussion among researchers. *European Journal of Psychology of Education, 10* (3), 225-242
- Winder, C. & Corter, C. (2016). The influence of prior experiences on early childhood education students' anticipated work with families. *Teaching and Teacher Education, 55*, 133-142.