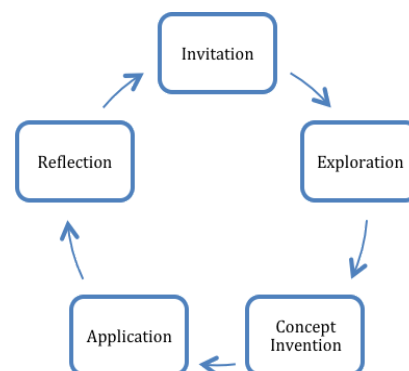


The Learning Cycle

Invitation — Initiates the learning task and sets the context. It sparks interest, and spurs learners to recall and retrieve past connections from their memories that may be relevant to present learning experiences. Generates anticipation, and begins to focus learners' thinking on the topic of the upcoming activities.

Educator's Role: Create interest and generate curiosity. Raise questions and problems to be explored. Elicit responses that uncover learners' current knowledge about the concept or topic.

- How does it get learners interested in learning about the topic?
- How does it help them access their prior knowledge?



Exploration — Involves exploration of real phenomena driven mainly by learner's interest and questions, followed by discussion about discoveries, results, ideas, and questions. Provides a common base of experiences for learners to develop new concepts and skills. They retrieve prior connections and as they explore, they examine the relevance and relationship to the new ideas presented. They begin to elaborate on existing memories related to the concept and use their everyday language to articulate their thinking.

Educator's Role: Encourage learners to work together without direct instruction from the educator. Observe and listen to learners as they interact. Ask probing questions to redirect learners' investigations when necessary. Provide time for learners to puzzle through problems. Act as a consultant and facilitator for learners.

- How will learners be provided experiences that produce concrete observations and discoveries to help them make sense of the topic?

Concept Invention — After interest and attention is focused, learners actively process the experience, review evidence and data gathered through exploration, and try to make sense of it. As learners describe their observations and generate explanations, they make new and/or different connections to existing memories.

Educator's Role: Encourage learners to explain concepts and definitions in their own words and invent and discuss their understandings with their peers and with those with more knowledge. Ask for evidence, results, and clarification from learners to help them make sense of their experience. Uses and introduces technical language from the discipline. Connect to learners' direct experiences when explaining concepts.

- How will learners be encouraged to struggle with their understanding and negotiate their ideas with others?

Application — Armed with new ideas, learners apply new knowledge and skills to solving a problem or meeting a challenge, transferring their new knowledge to unfamiliar contexts in the world. Learners retrieve these fairly new connections in their memories and elaborate on them further as they apply them to different contexts, which in turn strengthens the new connections.

Educator's Role: Provide opportunities for learners to use vocabulary, definitions, and explanations, and transfer knowledge from familiar circumstances to novel ones in order for deep learning to occur.

- How will learners authentically apply what they've learned to a new situation or context?

Reflection — After trying out new ideas in different settings, learners reflect on how their original notions have been or need to be modified. Learners are consciously thinking about the new connections they have made to existing memories, and how their memories have changed. It invites them to monitor and regulate their

own evolving understanding, and generate new questions.

Educator's Role: Encourage learners to confront their former ideas and evolve new ones, to solidify conceptual framework connections, and to help build metacognitive skills.

- How will learners think back on the process for learning to help reinforce their understandings and make them better learners in the future?