

Learning Cycle:

The learning cycle is a sequential process for both learning and instruction. It places focus on a series of steps that encourage a more thorough understanding and a deeper application of content. It also pushes students toward inquiry and discovery in their learning. The learning cycle gives teachers a process for instruction while giving students a formula for learning.

The original learning cycle was created based on ideas Swiss psychologist Jean Piaget had in regards to how children learn. Piaget's goal was to match content mastery with a student's cognitive development process.

This model, known formally as the learning cycle, consists of three basic steps: exploration, concept development (sometimes called invention), and concept application.

A learning cycle is a concept of how people learn from experience. A learning cycle will have a number of stages or phases, the last of which can be followed by the first.

The 5e learning cycle is an instructional design model that defines a learning sequence based on the on the experiential learning philosophy of John Dewey and the experiential learning cycle proposed by David Kolb.

The model:

1. Engage:

Here the task is introduced. Connections to past learning and experience can be invoked. A demonstration of an event, the presentation of a phenomenon or problem or asking pointed questions can be used to focus the learners' attention on the tasks that will follow. The goal is to spark their interest and involvement.

2. Explore

Learners should take part in activities that allow them to work with materials that give them a 'hands on' experience of the phenomena being observed. Simulations or models can be provided. Questioning, sharing and communication with other learners should be encouraged during this stage. The teacher facilitates the process.

3. Explain:

The focus at this stage is on analysis. The learner is encouraged to put observations, questions, hypotheses and experiences from the previous stages into language. Communication between learners and learner groups can spur the process. The instructor may choose to introduce explanations, definitions, mediate discussions or simply facilitate by helping learners find the words needed.

4. Elaborate/Extend:

Using the understanding gained in the previous stages, now learners should be encouraged build and expand upon it. Inferences, deductions, and hypotheses can be applied to similar or real-world situations. Varied examples and applications of concepts learnt strengthen mental models and provide further insight and understanding.

5. Evaluate:

Evaluation should be ongoing and should occur at all stages, in order to determine that learning objectives have been met and misconceptions avoided. Any number of rubrics, checklists, interviews, observation or other evaluation tools can be used. If interest in a particular aspect or concept is shown, further inquiry should be encouraged and a new cycle can begin that builds upon the previous one. Inquiries may branch off and inspire new cycles, repeating the process in a spiralling fractal of interrelated concepts, where instruction is both structured and yet open to investigation.

In 1933, John Dewey described five phases or aspects of reflective thought:

In between, as states of thinking, are (1) suggestions, in which the mind leaps forward to a possible solution; (2) an intellectualization of the difficulty or perplexity that has been felt (directly experienced) into a problem to be solved, a question for which the answer must be sought; (3) the use of one suggestion after another as a leading idea, or hypothesis, to initiate and guide observation and other operations in the collection of factual material; (4) the mental elaboration of the idea or supposition as an idea or supposition (reasoning, in the sense in which reasoning is a part, not the whole of inference); and (5) testing the hypothesis by overt or imaginative action.

In the 1940s, Kurt Lewin developed action research and described a cycle of:

Planning

Action

Fact finding, about the result of the action

Lewin particularly highlighted the need for fact finding, which he felt was missing from much of management and social work. He contrasted this to the military where the attack is pressed home and immediately a reconnaissance plane follows with the one objective of determining as accurately and objectively as possible the new situation. This reconnaissance or fact-finding has four functions. First it should evaluate the action. It shows whether what has been achieved is above or below expectation. Secondly, it gives the planners a chance to learn, that is, to gather new general insight, for instance, regarding the strength and weakness of certain weapons or

techniques of action. Thirdly, this fact-finding should serve as a basis for correctly planning the next step. Finally, it serves as a basis for modifying the "overall plan."

David Kolb's model

In the early 1970s, David A. Kolb and Ronald E. Fry developed the experiential learning model (ELM), composed of four elements

1. Concrete experience
2. Observation of and reflection on that experience
3. Formation of abstract concepts based upon the reflection
4. Testing the new concepts

Kolb integrated this learning cycle with a theory of learning styles, wherein each style prefers two of the four parts of the cycle. The cycle is quadrisedected by a horizontal and vertical axis. The vertical axis represents how knowledge can be grasped, through concrete experience or through abstract conceptualization, or by a combination of both. The horizontal axis represents how knowledge is transformed or constructed through reflective observation or active experimentation. These two axes form the four quadrants that can be seen as four stages: concrete experience (CE), reflective observation (RO), abstract conceptualization (AC) and active experimentation (AE) and as four styles of learning: diverging, assimilating, converging and accommodating.

Honey and Mumford

Peter Honey and Alan Mumford developed Kolb and Fry's ideas into slightly different learning cycle The stages are:

1. Doing something, having an experience
2. Reflecting on the experience
3. Concluding from the experience, developing a theory
4. Planning the next steps, to apply or test the theory

While the cycle can be entered at any of the four stages, a cycle must be completed to give learning that will change behaviour. The cycle can be performed multiple times to build up layers of learning.

Honey and Mumford gave names (also called learning styles) to the people who prefer to enter the cycle at different stages: Activist, Reflector, Theorist and Pragmatist. Honey and Mumford's learning styles questionnaire has been criticized for poor reliability and validity.[6]

ALACT

In the 2000s, Fred Korthagen and Angelo Vasalos (and others) developed the ALACT model, specifically for use in personal development.[10] The five phases of the ALACT cycle are:

Action

Looking back on the action

Aspects of essential awareness

Creating alternative methods of action

Trial

Learning Cycles cast teachers in the role of curriculum developers. During the lesson's actual implementation, teacher responsibilities vary according to what happens during each stage of the Learning Cycle. Sometimes the situation calls for direct instruction. In cases where activities are more student-centered, the teacher plays a less prominent, background role.

References:

<https://www.simplypsychology.org/learning-kolb.html>

<https://carleton.ca/experientialeducation/what-is-experiential-education/experiential-learning-cycle-model/>