



Conceptualization Theory

Framework for understanding courseware, proposed by J.T Mayes and C.J.H Fowler. According to the conceptualization theory, learning happens in a three stage cycle, involving conceptualization, construction and dialogue. Each stage of the cycle should be supported by courseware which corresponds to primary, secondary and tertiary courseware.

Conceptualization

- ▶ Refers to the learner's initial contact with other peoples' concepts.
- ▶ At this stage there is a negotiation between the learner's existing understanding of the subject with the new additional piece of information.
- ▶ The conceptualization stage is supported by primary courseware which most importantly presents content. It is usually authored by subject matter experts and designed by courseware specialists. It is currently the most widely distributed form of courseware.

Construction

- ▶ Refers to the stage where the learner applies his/her understanding of one or more concepts to perform a task.
- ▶ Traditionally, this could involve laboratory work, writing, preparing presentations etc. The environment and tools that support the performance of these tasks is termed as secondary courseware.

Dialogue

- ▶ Refers to a stage where concepts are further developed through a process of conversation with tutors and peers. The process of reflection enables learners to analyze ideas that are learned. Erroneous ideas are also rectified through this process.
- ▶ The material that is created as a result of the discussions constitutes the tertiary courseware which can be used to support others' learning.
- ▶ Tertiary courseware supports the view that learning is a social process besides being a cognitive exercise.

Fowler and Mayes later extended the notion of dialogue to include conversations for clarification and confirmation at the conceptualization stage and conversations for co-operation and collaboration at the construction stage.



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Assumptions about Learning

The conceptualization theory is based on [constructivism](#), which lays emphasis on learning through the performance of tasks. This is in contrast to the instructivism, where the emphasis is on the delivery of an explanation. The theory makes the following assumptions about learning:

- ▶ Learning is a byproduct of understanding, which is built by the learner while performing a task.
- ▶ It is helpful to visualize a model that sees learning as a progression through stages.
- ▶ Understanding is enhanced by frequent feedback from peers and teachers.
- ▶ Learning is situated within a social and organizational context.

Significance of the Conceptualization Theory The theory offers a conceptual framework that helps translate learning theories such as constructivism or conceptualization into a set of design principles that help develop technology based learning solutions.

Designing Courseware Using Conceptualization Theory

Primary Courseware

- ▶ Determine the learner's pre-existing knowledge and ensure that the primary courseware builds on the learner's schema. The most important purpose of the primary courseware is to orient the learner to the subject matter.
- ▶ The learning material must provide the learner with a map of what is to be learned and understood through the subsequent learning activity. The efficacy of the primary courseware is largely dependent on the match between the existing knowledge of the learner and the information that is presented. Ensure that the content is neither too simple nor too complex as the primary courseware will set the pace for the entire learning process.
- ▶ A live lecture, a printed document, a video or a presentation are some options for delivering primary courseware.

Secondary Courseware

- ▶ Design suitable tasks that will build relevant contexts for the learner. The tasks and the supporting instructional material provided will constitute the secondary courseware.
- ▶ While designing tasks, ensure that the learner is engaged with the concept that is being discussed.
- ▶ Ensure consistency, memorability and learnability in the tasks and the supporting instructional material that is created. This will ensure that the material is effective for supporting learning.
- ▶ Mind mapping tools that help learners analyze concepts better, authoring tools and even word processors can also be innovatively utilized as secondary courseware.



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Tertiary Courseware

- ▶ Learning through tertiary courseware happens at two levels.
 1. The learner learns through a process of asking questions, discussing his or her thoughts, sharing opinions and challenging ideas.
 2. These dialogues when documented can support the learning of other learners. Tertiary courseware can thus be seen as 're-usable' learning.
- ▶ There could be several approaches to providing support of this nature. For instance, a database of 'frequently asked questions' that is compiled over batches of learners can be a useful learning support. Alternatively, a learner sharing his or her experiences through a forum or a blog could help other learners eliminate certain methods and employ others.
- ▶ Reflective thinking or the dialogue with oneself can also be useful. Journal entries can be an ideal tool for this purpose.
- ▶ Provide adequate and appropriate opportunity for discussion between learners and between the learners and the tutor. Peer reviews, open house forum discussions, email, web based conferences and discussions, voice and text chats are some options that are available to encourage and document discussion.



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