Constuctivist Learning Theory (A Hitchhiker's Guide to Learning Theory)

Patrick Parrish, WMO

Background

With constructivism, our discussion of learning theories begins taking a shift towards a new conception of knowledge as something that is developed during participation, rather than through acquisition.

In the late 1980's, cognitive theories of learning faced a challenge and subsequent redirection when theorists and researchers began embracing constructivism. Constructivism is the philosophical view that knowledge is not simply something that is transmitted to us, something external to ourselves, but is constructed uniquely by each of us through interactions with our environments and through conscious reflection about those interactions. This might at first sound like just playing with words, but it has profound implications, and its impacts are seen, to some degree, in nearly all training that takes place these days. It also forms a common foundation for all the rest of the theories we'll discuss in this session.

Constructivism rejects that the world contains ideas waiting to be discovered, and it suggests that there is no absolute, final knowledge. Knowledge is not what is out there in textbooks, academic papers, and lectures, although those are representations of the knowledge that resides in the people that wrote them.

Within a constructivist viewpoint, it is misguided to say that people acquire knowledge or that trainers deliver knowledge. You can deliver training or instruction, because those are the actions we take in classrooms or online, but you can't just hand knowledge to someone. Knowledge is something that learners must develop either on their own or in collaboration with other people.

You can tell me about the Norwegian cyclone model, and show me diagrams and animations, and you can even show me cases and data that demonstrate it in action, but until I developed my own conceptual model that I can apply to new situations, it is just information, and not knowledge. This doesn't mean that your explanations aren't required, just that they aren't sufficient. Learning doesn't end there, it also requires some action on my part.

Applications

Traditional education places high emphasis on the ability to get consistent learning outcomes. This is demonstrated, for example, in the use of competencies and controlled assessment approaches. This sort of consistency is important, particularly in professional training where organizations have to demonstrate their capabilities and value. But it does have limitations. Consistency may not be best for all educational contexts.

Constructivism offers new values of collaboration, personal goals and relevance, reflection, creativity, dialogue, and appreciation of differences. These are also important organization values in the information age, and for this reason, constructivism has become to a large degree a mainstream

learning theory, if not traditional. But this mainly applies to the cognitive flavor of constructivism, which still sees knowledge as the creation of individual minds rather than groups of minds. That's the interest of another group of theories.

Commonly proposed guidelines for applying a constructivist perspective include:

- Embed learning inside large tasks like problems, cases, or projects. These should not be used only as summary activities, but as the organizing structure for learning activities.

- Give learners ownership of their learning tasks. Provide options for individual choice so that learners are not just studying to pass a test, but become genuinely interested. Ownership might also come from a genuine puzzle or challenge presented to students that engages their attention.

- Offer authentic tasks to learners. These don't necessarily have to be real life tasks, but should parallel or simulate the same type of thinking required in real world problems.

- Allow learning activities to be complex and messy, like real world problems. This allows knowledge to be constructed that is more easily transferred to the real world. This is known as developing cognitive flexibility. You might notice that this is counter to some cognitive load theory recommendations.

- Allow learners to use individual processes for solving problems, not just cookbook procedures. Learning to develop flexible processes is just as important as achieving effective solutions. It also creates a higher degree of ownership of learning.

- Provide both support AND challenge to learners. Providing support is known as scaffolding, and while this suggests limiting some individual learner flexibility by preventing full on failure, it is critical to guide students in complex tasks in which they are still becoming competent. At the same time, learners need to be challenged to remain engaged, so support and challenge must stay in balance. Support can be in the form of learning resources or hints and answers by request. Challenge can take theform of asking why learners are choosing a particular solution approach (which forces them to reflect), or by adding complexity when the learner is ripe for it.

- Have learners test their ideas against alternative viewpoints. You can provide these views yourself, or encourage diversity of opinion among students if possible. Ideas are strengthened or improved when they are challenged and must be defended. Encourage learners to vocalize their ideas in order for this challenge to take place.

- And finally, provide opportunities for reflection about what has been learned, and how it has been learned.

Problem-based learning is a very popular approach that applies constructivist principles. In PBL, learners are asked to engage in solving ill-defined problems, not simple problems, but real-life messy problems. Learners are also required to define the problem in their own terms, to locate the resources required to

help them solve it, and to develop unique approaches and solutions. However, scaffolding should be offered along the way to guide them in the process.

Limitations

Constructivism can be frustrating for learners used to being handed information to absorb. It can also be hard for teachers used to just providing information. And it can be used by some teachers as an excuse to not teach at all, but to put all the effort on learners. This is not implied by theory however. Sometimes learners need to be provided information and given explicit guidance. This is the constructivist role of teachers, to demonstrate HOW to learn, to show the useful learning path, but not to learn FOR students.

Some research has refuted the benefits of constructivist learning, particularly for novices, but this has typically been done by comparing traditional instruction with "minimally-guided" or discovery learning, which is a straw man for the most radical application of constructivism. In discovery learning, the amount of guidance is extremely limited, and so it is no wonder that this approach can be less efficient, and can sometimes fail. Learning-by-doing however, the foundational principle of constructivist theory, is challenged far less.

References

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