Cognitive Apprenticeship Theory
A Guide to Collins and Brown's Theory of Learning

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What is Cognitive Apprenticeship Theory?

Traditionally, an apprentice is someone who learns a skill or trade under the guidance of a more knowledgeable and experienced person. Cognitive apprenticeship theory emphasizes two issues: the teaching process to handle complex tasks and the cognitive processes involved in learning[1]. A cognitive apprenticeship focuses on bringing internal thought processes into the open so they can be observed and learned by students.

Cognitive apprenticeship theory emphasizes knowledge that can be applied in real world settings. The theory is broken into six teaching methods that can be sorted into three groups. Modeling, coaching, and scaffolding come from traditional apprenticeship models. Articulation and reflection allow students to access and control their own problem-solving strategies. Exploration encourages autonomy in both problem-solving and problem formulation.
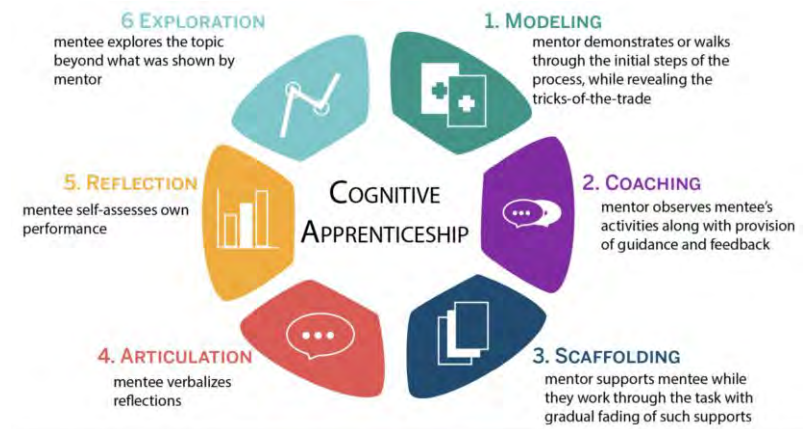

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What Does It Mean for Medical Education?

Cognitive Apprenticeship Theory offers principles to guide educational sequencing of information. These include increasing complexity, increasing diversity, and looking at global before specific skills[1].

Increasing complexity focuses on gradual development of every more detailed knowledge and skills to reach the end goals of training. Increasing diversity refers to graduating tasks to those that require a diverse set of knowledge and skills to complete. Global skills allow learners to understand the context of the information they are learning before attending to more refined details of the problem. Having a global understanding of a concept allows the learner to make sense of the specific areas in which they are asked to focus on as their knowledge and skills progress.

How Do I Create a Cognitive Apprenticeship Environment?

Cognitive apprenticeship seeks to make thinking more visible[2]. It blends traditional apprenticeship with formal schooling approaches to teach and learn cognitive skills that foster real-world problem-solving ability.

Apprenticeship models embed learners into the subculture of the professional environment. This provides learners with continual access to a variety of knowledge and skills related to the problems they are learning to solve. This teaches the learner there are multiple ways to approach problems and provides rich contextual learning and that learning is a staged process with multiple benchmarks.

Creating a cognitive apprenticeship environment relies on the master bringing thinking to the surface. This is a mutual process, where the teacher makes their thinking visible and sets the expectations for the learner to do the same. This allows students to observe, act, and practice skills with assistance from teachers and their peers[2]. In addition, teachers need to align classroom learning with real-world context so students develop their knowledge in the context of professional practice.

Employing a cognitive apprenticeship model encompasses the following three activities[2]:

1. Making processes visible to students
2. Situating processes in real-world contexts
3. Varying tasks and information to foster transfer of learning to new and different situations

Goals of a cognitive apprenticeship include[3]:

1. Incorporating teaching strategies from the traditional apprenticeship model
2. Developing problem-solving abilities
3. Direct application of new knowledge
4. Teaching specific skills
5. Making thinking visible in the teaching and learning process
6. Fostering reflection and growth

References

1. Collins, A., & Kapur, M. (n.d.). Cognitive Apprenticeship. In (pp. 109-127). doi:10.1017/CBO9781139519526.008
2. Collins, A., Brown, J. S., & Holum, A. (1991). Cognitive apprenticeship: Making thinking visible. American Educator, 15(3), 6–11, 38–46.
3. https://educationaltechnology.net/cognitive-apprenticeship/