**Cognitive Apprenticeship**

**Summary**: Cognitive Apprenticeship is a theory that attempts to bring tacit processes out in the open.  It assumes that people learn from one another, through observation, imitation and modeling.

**Originator**: Collins, Brown and Newman

**Key Terms**: Modeling, coaching, scaffolding, articulation, reflection

Around 1987, Collins, Brown, and Newman developed six teaching methods — modeling, coaching, scaffolding, articulation, reflection and exploration. These methods enable students to cognitive and metacognitive strategies for “using, managing, and discovering knowledge”[1][2].

*Modeling*

Experts (usually teachers or mentors) demonstrate a task explicitly.  New students or novices build a conceptual model of the task at hand. For example, a math teacher might write out explicit steps and work through a problem aloud, demonstrating her heuristics and procedural knowledge.

*Coaching*

During Coaching, the expert gives feedback and hints to the novice.

*Scaffolding*

Scaffolding the process of supporting students in their learning.  Support structures are put into place.  In some instances, the expert may have to help with aspects of the task that the student cannot do yet.

*Articulation*

McLellan describes articulation as (1) separating component knowledge and skills to learn them more effectively and, (2) more common verbalizing or demonstrating knowledge and thinking processes in order to expose and clarify them.

This process gets students to articulate their knowledge, reasoning, or problem-solving process in a domain” (p. 482). This may include inquiry teaching (Collins & Stevens, 1982), in which teachers ask students a series of questions that allows them to refine and restate their learned knowledge and to form explicit conceptual models. Thinking aloud requires students to articulate their thoughts while solving problems. Students assuming a critical role monitor others in cooperative activities and draw conclusions based on the problem-solving activities.

*Reflection*

Reflection allows students to “compare their own problem-solving processes with those of an expert, another student, and ultimately, an internal cognitive model of expertise” (p. 483). A technique for reflection could be to examine the past performances of both expert and novice and to highlight similarities and differences. The goal of reflection is for students to look back and analyze their performances with a desire for understanding and improvement towards the behavior of an expert.

*Exploration*

Exploration involves giving students room to problem solve on their own and teaching students exploration strategies. The former requires the teacher to slowly withdraw the use of supports and scaffolds not only in problem solving methods, but problem setting methods as well. The latter requires the teacher to show students how to explore, research, and develop hypotheses. Exploration allows the student to frame interesting problems within the domain for themselves and then take the initiative to solve these problems.

References

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