

For my MSIDT project I will be building a Web-based cognitive tutor that will be based on the four component instructional design model (4C/ID) and incorporate instructional principles from cognitive load theory (CLT), cognitive theory of multimedia learning (CTML), and cognitive-affective theory of learning with media (CATLM). The 4C/ID model consists of a ten step design process. The first three steps aim at designing a series of learning tasks that serve as the backbone for the blueprint of the cognitive tutoring system. These steps include: 1) design learning tasks, 2) sequence task classes, and 3) set performance objectives. Building outward from there, the next steps identify the knowledge, skills and attitudes necessary to perform each learning task and are organized into supportive information, procedural information, and part-task practice. The supportive informational steps include: 4) designing the supportive information, 5) analysis of cognitive strategies, and 6) analysis of mental models (schemas). The procedural information steps include 7) design of procedural information, 8) analysis of cognitive rules, and 9) analysis of prerequisite knowledge. This last step is an important one since the cognitive tutoring system will be adaptive. In order to try and avoid the expertise-reversal effect, knowing what prerequisite knowledge is needed to perform a particular task and being able to apply assessments which evaluate a learner's existing knowledge of the task will be instrumental to determining the proper instruction to provide at any point of the instructional process. Finally, step 10 part-task practice will be necessary in varying degrees to aid in rule automation development.

Although I have some rough drafts of storyboards and flowcharts, my first attempt at fleshing out the details of the aforementioned components of my cognitive tutoring system will need to be sorted out this week. With my literature review out of the way I can now apply my full focus to completing these tasks and my project plan. Wish me luck.

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