

Prezi: Trading Linear Presentations for Conceptual Learning Experiences

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Literature Review

Learners brains can only process a limited amount of information at one time (Miller, 1956). With the increasing use of multimedia in the learning environment, the potential to cognitively overwhelm learners with information exists (Sweller,1994). If learners are cognitively overwhelmed then learning, especially within the higher cognitive domains, is diminished. Thus, it is important that educators and instructional designers understand cognitive theories as they design multimedia instruction. Based on Paivio's (1986) dual coding theory, Mayer developed his cognitive theory of multimedia learning. His theory is based upon three primary assumptions: (a) information processing occurs via two channels (auditory and visual), (b) the learner can only process a finite amount of material via each channel, and (c) multimedia is not processed and interpreted in "mutually exclusive" fashion (Mayer, 2001). Learning is the process of actively filtering, organizing, and integrating information based on previous knowledge. Thus, based on his first two assumptions, Mayer argues that multimedia instruction should be designed to capitalize on both the auditory and visual memory without overloading one or the other. The most effective way to present information is using graphics and narration. Mayer's third assumption highlights the importance stressed in Aubsabel's Assimilation Theory that "meaningful learning involves the assimilation of new concepts and propositions into existing cognitive structures." (Novak& Gowin, 1986, p.7). Concepts are not learned in a vacuum, rather in relation to and in context. Thus, it can be argued that that instruction presented in a linear fashion does not align with how students think and may unconsciously discourages hierarchical thinking as it forces viewers to progress from one concept to another without relation or integration with the foundational concept. Prezi enables educators to escape the confines of linear presentations and encourage knowledge construction via higher order thinking skills in a manner that uses both visual and auditory channels. Unlike the linear model that moves from concept to concept, Prezi encourages learners to identify patterns, comparisons, relationships, and differences between information. Like a concept map, Prezi's hierarchical style moves between concepts, topics, and subtopics while still retaining its relation to the foundational idea visually and, through the instructor's voice, auditory.

Description of Pedagogical Practice

Prezi is currently being used to facilitate learning in a university counseling courses. Prezi assists the instructor in instructing students in a manner that is non-linear. Using the concept map like features, the instructor easily navigates between concepts, highlights concepts as they appear in the discussion rather than in forced format, and shows how constructs relate to one another. Using the size features the instructor demonstrates how some constructs are integrated within other constructs and the hierarchy of concepts. Prezi enables the instructor to show a picture or video to spark discussion and add comments to the presentation live. How Prezi is being used will be demonstrated. Prezi features and how they can be used to construct a instruction in on a solid research foundation of cognitive theories will be highlighted.

Discussion

Multimedia instruction has the potential to overwhelm the learner's brain , thus, inhibit learning. Rather than relying on out of date methods and flashy new technologies with special effects, it is important for educators and instructional designers to understand cognitive theories and construct multimedia instruction based on a solid research foundation of these theories. Based on cognitive science, Prezi has the potential to assist educators and instructional designers in creating effective multimedia instruction. However, Prezi can not be used simply as a fancy PowerPoint, it needs to be used as it was intended.

References

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