Applying Cognitive Learning Theory to Design a Hypermedia-enhanced Learning Environment

From Skinner’s teaching machine to drill and practice computer-based instruction, technology has played an important role in providing an alternative way of delivering instruction and enhancing teaching and learning. As the incorporation of hypermedia technologies into educational practices has increased in the past decade, there must be recourse to educational theory to guide the design and delivery of the hypermedia-enhanced learning environment. A number of educational theories have been used in informing the application of advanced technologies for pedagogical ends. Cognitive learning theory has strongly influenced the understanding and development of designing an effective learning environment which maximizes the benefits of using hypermedia technologies in the teaching and learning process. This paper intends to discuss some important components of cognitive learning theory and concerns about how to design hypermedia-enhanced learning environments. The discussions are including cognitive information processing theory, metacognition, learners’ control, and impacts of learning styles and self-regulation ability in designing this specific learning context.

As hypermedia technologies become more commonly used in education, students, teachers, instructional designers, and school administrators need to understand how these can be applied to enhance teaching and learning. Using hypermedia technologies in the learning process seems to be a double-edged sword. It seems that if the hypermedia learning environment is designed to be too structured, many students may lose their motivation and interests, but if it is designed too lose or flexible, many students will become confused and lost in the knowledge networks. Choosing the right approach on the basis of learning theory and provide efficient support for learners are the keys to create an effective hypermedia-enhanced learning environment.

When present in the brief paper session, The presenters will first demonstrate their overview and considerations on the topic of cognitive learning theory and hypermedia-enhanced learning environment by PowerPoint slides, and then the presenters will address specific issues and concerns.