Ch. 14: Principles of Multimedia Design...

...see Chapter 3, "Five steps in multimedia learning are..."

steps 1-2: Principles for Reducing Extraneous Processing...

steps 3-4: Principles for Managing Essential Processing...

step 5: Principles for Fostering Generative Processing...

p. 272

"There is converging evidence that high-quality multimedia design is more important for low-rather than high-experience learners."

I.   **p. 274**

"...ten features that lead to effective multimedia presentations"

A.   **1. Coherence =" when extraneous words, sounds and pictures are minimized.**

1.   **2. Signaling = "when the essential material is highlighted"**

a.   **3. Redundancy = "when words are presented as speech rather than speech and text in multimedia presentations"**

(1)   **4. Spatial Contiguity = "when corresponding words and pictures are presented**

near rather than far from each other on the page or screen."

    (a)   5. Temporal Contiguity = "when corresponding words and pictures are presented simultaneously rather than sequentially on the page or screen."

B.   6. Segmenting = "when fast-paced, complex multimedia lessons is presented in user-paced segments rather than as a continuos presentation."

    1.   7. Pre-training = "when the learner [does not] knows the names and characteristics of the key concepts."

        a.   8. Modality = "when words are presented as speech rather than as printed text in multimedia presentations."

p. 267 - Table 14.1

Principles for Reducing Extraneous Processing...

p. 57

"...extraneous cognitive processing, which is cognitive processing that does not serve the instructional goal and is caused by poor instructional design."

p. 80

...caused by confusing instructional design."

   I.   = 1. reduce confusion re. what to attend to and what to ignore

p. 268 - Table 14.2

Principles for Managing Essential Processing...

p. 57

"...essential processing, which is cognitive processing that is required to represent the material in working memory and is determined by the complexity of the material."

p. 172

"...processing aimed at mentally representing the essential material in working memory."

p. 268 - Table 14.3

Principles for Fostering Generative Processing...

p. 57

"...generative processing, which is deep cognitive processing including organizing and integrating material."

p. 81

"...is cognitive processing during learning that is aimed at making sense of the essential material and that can be attributed to the learner's level of motivation."

p. 221

"Generative processing is cognitive processing aimed at making sense of the material and includes organizing the the incoming material into coherent structures and integrating these structures with each other in prior knowledge."

Principles for Reducing Extraneous Processing...

Principles for Managing Essential Processing

Principles for Fostering Generative Processing

I. 9. Personalization = "when the words are presented in conversational style rather than in formal style."

II. 10. Voice = "when the words are spoken by a friendly human voice rather than a machine voice."