Multimedia Instructional Unit Design:

How to Integrate Dance into K-4 Science Lessons

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When designing the instructional unit for K-4 teachers new to integrating dance into science lessons, I decided to include faded work examples. Though the learners were assumed to be novices in dance, they were also assumed to be highly knowledgeable in science lessons and have good metacognitive skills, so I incorporated learner control. Assessments, feedback, and examples related to the job context, so as to promote learning transfer. I used the multimedia principles of Clark and Mayer (2011) as a guide for design, which was especially important because they state that worked examples "failed to have a positive effect when the multimedia principles were violated" (p. 235).

Multimedia Principles Used in Design

In the overall design, I followed the personalization principle by using "you" and "I" instead of a formal passive voice. Also, adhering to the coherence principle, I avoided including extraneous audio/visuals that could depress learning. Following the segmenting principle, I split the unit into manageable sections and allowed learners to control pacing. On the menu screen, I used audio narration rather than text to direct learners in their options (modality). Employing the pretraining principle, I included an introductory section to familiarize learners with the elements of dance before presenting the integration method. Within this section, I followed the multimedia principle of using relevant graphics by including videos to illustrate those elements. I narrated the videos as they played (contiguity), and did not include redundant text (redundancy). Once the elements of dance had been presented, I introduced the integration method by using audio narration for how to proceed (modality), and presented the steps in a building style rather than all at once (segmenting). Similarly, I used the segmenting principle in presenting the steps of the faded work examples, and followed the redundancy principle by not using audio in addition to the onscreen text. Using these multimedia principles should help to decrease learners' cognitive load, thereby enhancing learning.

References

Clark, R. C., & Mayer, R. E. (2011). *E-learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning* (3rd ed.)*.* San Francisco, CA: Pfeiffer.