

Project Title: “Connecting a Data Projector to a Computer”

Report 2

Part 1 and 2 – Performance Analysis and Criterion-referenced test items

See Appendix F – Performance Objectives and Assessments

Part 3 – Structure of Learning

Structure, Sequence and Content of Instruction

The learners will enter the training site and immediately receive an entry behaviors inventory, a pretest, and a CD with instructions on the front about how to access the module. Also available to the learners will be a cart with all of the necessary materials for completing the terminal objective.

The entry behaviors inventory will assess their use of data projectors and comfort with them. They will then take a pretest, assessing their knowledge prior to receiving the training. As soon as the pretest ends, the learner will follow the instructions on “unzipping” the file, which will begin after it is “unpacked.” On the CD is a Macromedia Captivate video tutorial that will take the learners through the instruction, from beginning to end, chunking the information according to the instructional goals of the lesson. The CD begins with an introduction to the platform that will be used for instruction, pointing out features that will help the learner navigate through the module.

The formal instruction begins with a vocabulary lesson so that the learner can appropriately select the important parts, cables and switches to be used in the lesson. It contains pictures, bulleted points and underlined concepts and words as Mayer suggests. After each chunk of vocabulary (Types of computers, cables, etc.), the learners assess their own knowledge with a quick question. If the learner answers the question(s) correctly, he/she moves forward in the lesson. If the answer is incorrect, the learner moves back to “relearn” the information from the slides. This moving backward and forward in the module helps to ensure that the sub skills are being learned in order to successfully attain the terminal objective.

After the learner has selected the important information, he/she moves to the organizing of these concepts. The module, through a variety of pictures and narration, explains how the different pieces fit together to connect a data projector to a computer. The use of an advanced organizer is one way that Mayer suggests the learner integrate the concepts into their own learning. For this module, the advanced organizer is placed on a slide with the task, so that

the learner can see that the two processes are analogous. The organizer is explained in this fashion, equating one process to the other, so that the learner will better understand not only the process, but each component's role in it.

After the organizer is presented, the learner is guided through the process of setting up the data projector and given ample time to complete each of the main tasks with some assistance from the module. This is meant to assist the learner in utilizing the motor skills necessary to complete the objective. By affecting the learner kinesthetically, the module will better prepare the learner for the assessment section of the module.

For the final part of the module, the learner is instructed to disassemble all of the connections and set all components aside. He/she is then instructed to repeat the entire process from memory, without looking back at the module.

Informing the Learner of the Goal

In the very beginning of the module, the learner is informed of the goal through text and narration. The actual goal is stated after a short scenario. The purpose of this scenario is to gain the attention of the learner and present the goal as a solution to a common problem. The scenario intends to welcome the teachers to the module and explain why they need the information to come. After the scenario explains the reason for instruction, the goal is formally recited exactly so that the learner will understand what is expected of them.

Presenting the Problem

The problem is presented realistically in the very beginning of the module and broken into sections, or chunks, as the instruction begins. The learners are made aware that they will first learn concepts and vocabulary, then how the components are constructed, and then will be given a chance to construct it themselves. This method of presenting the problem eliminates confusion about where the module is leading and helps the learner understand that the delivery of the vocabulary is very necessary for their understanding. They understand very early in the module that they will have the opportunity to perform this task themselves. The problem is presented in an organized and realistic scenario with a definite "time to learn" and a "time to do" for the learner, eliminating any uncertainty the learner may have about the terminal objective.

Teaching and Assessing the Terminal Objective

After completing the first two sections of the module, the vocabulary/concepts and organizing sections, the learner is taken to a series of slides that provide instructions to perform the task using the components on his/her cart. Also provided within the module are slides depicting the different steps that must be taken to complete the task and troubleshooting slides that ask questions about

whether the previous step actually worked (i.e. Is the screen being projected on the wall? Is it in focus?). The user is to click “yes” or “no” to these questions. After clicking, they are either taken to the next step or another slide where more support is provided. These slides are intended to scaffold the learning and teach the user the proper questions to ask when troubleshooting a device. When the learner can see a focused projection, the instructional part of the module is complete.

The learner is then asked to disconnect the cables from the devices and put them back together from memory. After being successful or unsuccessful, the learner will complete a posttest that covers all objectives and asks whether the learner was successful or unsuccessful in the terminal objective of setting up a data projector.