

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

## **Report I**

### **Section 1**

#### ***Part I – Instructional Theory Rationale***

For our instructional module, we have chosen Mayer’s SOI (Selecting, Organizing, Integrating) model because of its versatility and ability to be used in a very procedural learning task. The SOI model offers a constructivist approach to non-discovery tasks. Of the models we have studied, this is very different from the rest because of its focus on tasks that are not open-ended, ill-defined or project-based. The SOI model attempts to utilize constructivist learning for textbook learning. It utilizes methods of selecting relevant information, vocabulary and concepts, organizing those concepts into a useful structure, and integrating the information into a meaningful representation in the learner’s mind with the use of an advance organizer.

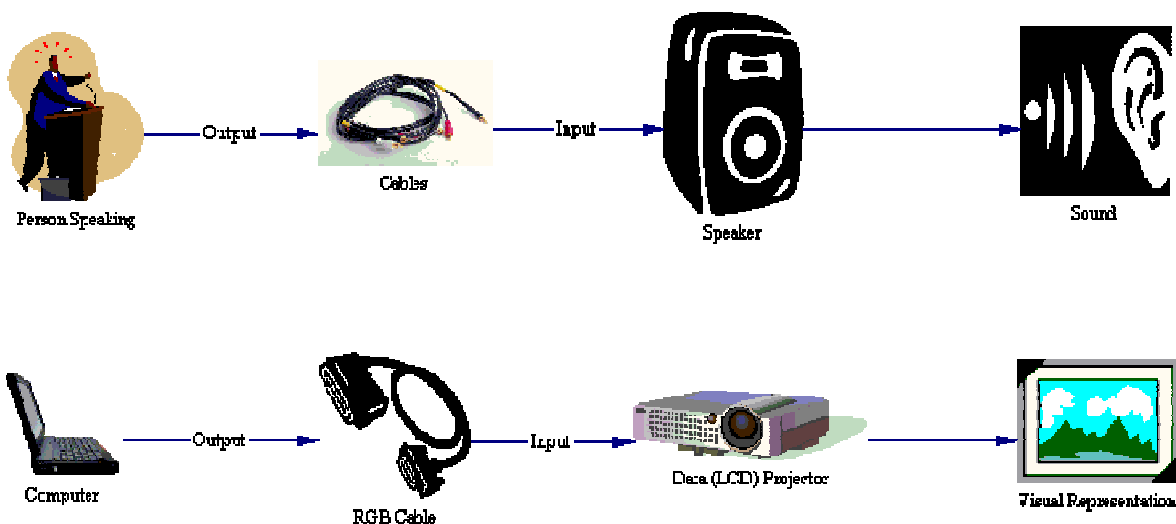
The learner is encouraged to select useful information by the instructor’s highlighting of important information through the use of pictures, captions, boldface, bullets, etc. This helps the learner by eliminating the unimportant information and focusing on what is most important for the completion of the task. For my model, we will present the learner with a booklet that describes the task of “Connecting a Data Projector to a Computer.” The first pages of this pamphlet will highlight the most important parts of the data projector, computer and the cables used to connect them with the use of pictures and captions under the pictures. We will include pictures of both the back of the computer, data projector, important buttons that will be used and cables used in the connection. The captions will describe each component and its purpose. Using bold text for the name of each part will help the learner remember as he/she performs the task of setting up the projector in the following step-by-step flow-chart organizer. This introduction will familiarize the learners with the necessary vocabulary for executing the task of successfully connecting a data projector to a computer.

The next step in the SOI model is the organization of the information. Mayer suggests that the learner must organize the information through the use of sequential and cause-effect organizers. He suggests that the learner be able to do this from the previous descriptions in order to better understand the appropriate sequence of events. The learner will see a textual representation of the sequence and have a work space with pictures of the actual components (the previous pictures use in the vocabulary processing). He/she will be required to draw arrows from the cables to the appropriate connection ports in order to better understand the where each component fits best in the sequence. This will create,

as Mayer suggests, a “coherent mental representation” of the process and a “coherent verbal representation” with the use of the captions as guides to the actual execution of setting up the data projector.

As an advance organizer to help integrate the information into the learners’ minds and develop deeper understanding, we will use the comparison of a microphone and a speaker. Using this analogy, the person speaking will represent the computer (sending out information). The cables carry the information to the speaker (which will represent the data projector) and the sound is projected out. Our hope is that the learner will understand the concept of input and output from this representation and be able to transfer that concept to the task at hand, therefore recognizing the “input” and “output” terms displayed used in several parts of the task. We feel that, if this concept is understood by the learners, they will better understand why they are performing the steps in the sequence.

Example of advance organizer:



This will take the learner to the final assessment component of my module. As a test of the learners’ understanding of the concepts within the module, I will have data projectors and a laptop computers set up in the classroom for them to manipulate. They will have the opportunity to look at a check list that contains guided questions in order to gauge their process as they progress through the execution of the procedure. The successful completion of this action will determine whether or not the learner has benefited from the instructional module.

## ***Part II – Learner and Situation Analysis***

The school system is working to increase the use of computers and other technology in the classrooms. One county initiative is to increase the amount of data projectors in each school so that teachers can more effectively use technology with their students. We have also purchased a system subscription to United Streaming, an online database of streaming videos that is aligned to curriculum standards, for the teachers to use as a resource for their lessons.

We have realized through administrative functions that the service is not being utilized as much as was hoped. Through observations and interviews, we realized that one reason this service was not being utilized is because of the limited number of data projectors in the schools. These projectors had to be shared by the teachers and, when needed, had to be connected. We also noticed that, when a teacher did check one out from the media center, finding someone to set it up was an obstacle for many teachers.

Our needs analysis shows that many teachers on staff do not use data projectors during instruction. When teachers do use data projection, they need assistance setting up the projector. This may be the reason why United Streaming files are not being used enough.

Our optimal performance goal is that each classroom teacher will use data projector for at least one lesson each quarter. For this to occur, teachers' fear of setting up and using a data projector will have to be eliminated.

Teachers need to feel comfortable with connecting and using a data projector with a desktop or laptop computer. In order to increase the use of these resources, we will train teachers on the proper way to connect a data projector to a computer. By providing this instruction, we hope to increase the use of data projectors in classroom instruction.

Our objective for this module is to train teachers to successfully execute connecting a data projector to a computer. At the completion of this self-instructional module, teachers will be able to use data projection without technical assistance.

(See Needs/Situation Analysis -- Appendix A)

### ***Part III – Entry Behaviors and Prerequisites to Training***

Our learners are elementary school teachers. Their expertise ranges from preschool to second grade. Countywide, the age range of the learners will be very wide starting from recent college graduates to veteran teachers. Many are wary of computers and technology. Most of the staff do not use data projectors in their daily instruction. This year, the school system has begun to upgrade its systems by purchasing software licenses that would be best utilized for whole-class instruction using a data projector presenting these instructional tools. This creates a problem because, when data projectors have been checked out in the past, it required a technician to set them up.

The instruction will be very specific and direct. The learners are very concerned with their time and spending it in front of a computer screen for a long period with irrelevant information will only cause the instruction to be unsuccessful. They are also very aware of instructional strategies, so the structure of the training must be appropriate in order to avoid criticism. The use of examples and a hands-on activity must be included for this to be an effective instructional experience for the learner. They must be presented with the information as well as allowed to practice what they have learned in order for the instruction to be well-received.

There is also a wide spectrum of prerequisite skills among the learners. Some have very good computer and technical skills, while others struggle to point the mouse in a particular spot. Therefore, the training will be simple enough to accommodate the lower skilled learners and advanced enough to motivate the more advanced users. Many of the learners have not experienced computer-based instruction and will find it to be a very new experience. Because of this, a short introduction to the instructional platform will be provided. The instructional platform will require very little user interaction in order to eliminate possible problems. The learners will have to interact with the instructional program only by clicking on specific boxes to move forward and when instructed to do so. This will help to make the instruction appropriate even for those learners with minimal computer skills.

## **Section 2**

### ***Instructional Goals***

For our module, there are four main tasks to reaching the main instructional objective, to successfully execute connecting a data projector to a laptop computer. The following are the main tasks within this instructional module:

1. Identify the computer and the projector that will be used in the presentation. (Concept – Gagne)
2. Identify the accessories for the projector and the computer which will be used in the presentation. (Concept – Gagne)

3. Learners will demonstrate connecting the computer to the data projector.  
(Rule – Gagne)
4. Learners will demonstrate viewing the presentation via the data projector.  
(Rule – Gagne)

These goals would normally be taught by an instructor in front of a learner or group of learners. We have chosen to utilize computer-based instruction with Macromedia Captivate to substitute a live instructor and create a self-instructional module.

The material will be accessed by inserting a CD into a computer and “unzipping” a file, per the instructions on the CD. It will then run by itself. As the instructional module is implemented throughout the county, it will either be run like this or from a download from the county website, making it accessible to those who need it, when they need it. The module will take 30-45 minutes, depending on the learners’ prerequisite skills.

## **Section 3**

***Task Analysis – see Task Analysis in Appendix D***

## **Section 4**

### ***Part I – Learner Analysis***

The learners are adults, most of them with college degrees, some with advanced degrees. Most are computer literate, but find processes beyond email, word processing and Internet searching to be beyond their comfort level. The younger staff members that are in graduate school or are recent graduates are quite comfortable with technology and the use of technology.

Many of the longer tenured staff is very skeptical of county-wide training because they feel that it is not relevant to their current situation. Many view it as a waste of their time. Some of the staff is positive and willing to attempt to learn new ideas.

Many are very skeptical of county-wide training because they feel that it is not relevant to their current situation. Many view it as a waste of their time. In some areas of the county, the computer labs are very up-to-date. The attitude toward the delivery system is positive because the resources are new and in good shape. In other areas of the county, the computer resource areas are desirable places to work in, or they are being used for other purposes.

The levels of motivation vary among the learners. Some of the learners are eager to learn and incorporate new skills into their teaching. Other members of the group feel that the instruction is just one more thing added to an already over-burdened workload. This attitude varies by person, not necessarily by age or years teaching.

The educational level of those being trained is very high. Most teachers have a college degree, many with a master's degree as well. The ability level when it comes to computers varies widely. Depending on the teacher's own personal interests, technology can be seen as something easy and useful, or as an adding burden and something to be feared.

Because of time constraints, the learners prefer a very direct approach to their own instruction, although it may conflict with their teaching styles. They like very factual delivery with a strong emphasis on active learning with realistic, work-related objectives. They prefer to have time to practice the learned concepts immediately after instruction.

Some of the learners have a lot of experience with county training in the past. Not all of these experiences have been positive ones. Many of the learners feel that much of the county's training is a waste of time. The newer teachers do not have as much experience with training in the county, so it is an opportunity to provide a positive experience.

For the most part, the learners are educated Caucasian females between the age of 25 and 55. They are open to instruction when they feel it will directly benefit them in the classroom. They are visual, hands-on learners that do not respond well to long lectures. There are a few men, but not many. (See Learner Analysis -- Appendix B)

## ***Part 2 – Performance Context Analysis***

The supervisor of this site (the principal) is very much in support of more technology training in her school. She has even hired additional personnel to help with this initiative. The building is old, but well equipped. The computer lab where the instruction will take place is relatively new and is well-equipped to handle various types of instruction, including one such as this. The learners hold a generally positive view of staff development and rate their computer skills from good to excellent.

It is our hope that, if a positive training experience is observed, more self-instructional modules will be introduced on a much larger scale to more schools within the county. This will be a wide-scale initiative, reaching other schools with similar challenges in both learner attitude and technological capabilities. We hope to introduce these modules through the county website and reach approximately 500-600 learners, with the idea that teachers will complete these modules "when needed," with the instruction coming "just in time." One positive condition is that all sites in the county are equipped with high-speed Internet access, making downloading the modules very easy. The county is also promoting the use of its website for practical purposes, so this is also helping to support a countywide initiative and is receiving enthusiastic administrative support.

This skill is directly related to the learners' responsibilities in the classroom. They are being encouraged to utilize more of the technological resources each year and the content from this module will facilitate the use of those resources. The "just in time" nature of the module will allow the learners to focus on instructional technology, rather than having to receive staff development on "nuts and bolts" task such as this. (See Performance and Learning Context – Appendix E)