Virtual Tour: A Web-Based Model of Instruction

Melissa B. Holler
Agora Cyber Charter School, USA

INTRODUCTION

Perhaps for the first time since the computer made its debut, the teacher is in the position to command the technology-based instructional resources used in the classroom. Gone are the days when teachers must rely solely on the expertise of computer professionals to create computer-assisted instruction. With the advent of the World Wide Web, creating student-centered, age-appropriate material rests in the hands of the classroom teacher. The Virtual Tour is the newest link to literally millions of content specific sites that supply images, sounds, and video media.

Defining the Virtual Tour. A Virtual Tour is a Web-based teaching strategy that presents multisensory, multimedia instruction appropriate for individual student exploration and group learning experiences. Virtual Tours offer the learner a host of "Front Doors," 14 in all, each uniquely suited to address a particular learning style. "Amplified" sites provide the specific content information. They are either external (found on the Internet) or internal (developed by the classroom teacher).

From the teacher's perspective. Few strategies provide teachers with such rich opportunities for expanding the walls of their classroom. The Virtual Tour enhances curriculum with authentic learning experiences in the form of exhibits, simulations, games, portfolios, paths, galleries, guided tours, and linked itineraries. Both Cooperative and Discovery lessons are improved by focusing the Virtual Tour on instructional units immersed in interpersonal communication, community awareness, and technology objectives. Students with special needs also benefit greatly from a multitude of learning medias. Needing individualized instruction can be challenging at times, but having a medium that addresses a variety of learning styles proves beneficial for both student and teacher.

Preparing a Virtual Tour. Technology-based instruction is best prepared with the aid of an instructional systems design (ISD) model, and the ADDIE Model is an excellent choice for creating a Virtual Tour. By following the five-step process, teachers analyze, design, develop, implement, and evaluate a technology-rich unit of instruction employing all the strengths of the World Wide Web.

To aid in reader understanding, a prototype Virtual Tour was prepared to serve as our example. The Tour was based on an actual third-grade lesson presented to special education students, during the 2005-2006 school year, on the topic of The Nine Planets, and they loved it. The lesson was modified and adapted to meet a variety of individual learners and their ability levels. Its design followed these steps.

Analysis. The initial stage of any instructional development effort determines the appropriate goals, objectives, and content for the lesson. When preparing a Virtual Tour, teachers must first select a topic best taught using the Web-based format. Some topics lend themselves to technology; others do not ,and no amount of images, sounds, or video clips will make them successful. Once the content focus is determined, the psychology for teaching the topic (behavioral, cognitive, or humanistic) must be decided.

Behaviorally, the Virtual Tour is a natural extension of sequential learning with content presented from first to last, simple to complex, general to specific. The Cognitive teacher offers content in progressive steps until a schema, or pattern, emerges to aid the learner in the construction of new knowledge. Humanism offers a personalized approach to learning, selecting information important to the student although, for younger students, they may not be particularly aware of what is or will be important to them. The Virtual Tour supports each of these major psychologies perhaps better than any previous teaching strategy ever devised.

The Virtual Tour makes the perfect integrated thematic unit by combining several academic disciplines. As a result, the analysis phase can be the most time-consuming step in lesson preparation. In their Backward

Table 1. Learning goals for the nine planets lesson

Navigate the Internet	Use the mouse to point and click on hyperlinks identified by the teacher and containing content-specific information.
Locate specific Web sites	Enter a specific URL (Uniform Resource Locator) in the Location Window of Netscape.
Download images and text	Use the right mouse button to click on an image, view that image to ensure it is desired, then save that image onto a personal copy or storage media. Use the left mouse button to click and drag selected text, copy that text, and paste the text into a word processing document.
Print images and pages	Use Netscape to print an entire web page, selected portion of a web page, and specific images on a page.
Prepare a 3-5 minute presentation	Use the rubric for classroom presentations to present the Nine Planets lesson to your classmates.
Prepare a personal Web Address Book	Add, File, and Edit Bookmarks in Netscape and print a copy of your bookmarks to share with other students.

Design Model, Wiggins and McTighe (1998) suggest that learning goals must be the first decision when creating the new lesson. Table 1 displays the learning goals for The Nine Planets lesson on the left, and the specific activity that is being targeted on the right.

Design. Lesson design begins by considering the target learner. Piaget (1970) identifies a characteristic of learning called "operations" and distinguishes between the concrete and abstract learner, bringing to light the importance of making instructional material age-appropriate for the learner. Concrete learning (approximately ages 7-11 years) demands tangible experiences: images, sounds, and video clips, each supported by the Virtual Tour and the Web-based media on which the Tour is grounded. The abstract learner (ages 11 years and older) revels in concepts and ideas; graphics and hyperlinks support multisensory exploration.

Once the age and learning styles of the prospective students are in place, specific learning objectives can be formulated. For this task, many teachers prefer the format attributed to Mager (1962). Its simplicity of design makes the behavioral learning objective a natural for this instructional format. Mager suggests three components for a properly constructed objective:

- Condition, provides the instruments for the learning situation
- Behavior, are both observable and measurable activities that surround the lesson and present evidence that learning has occurred.
- Criteria, specifically details how well the behavior must be performed to satisfactorily accomplish the lesson goals.

The behavioral learning objectives for the Nine Planets Virtual Tour are shown in Table 2.

Development. With the analysis and design firmly in mind, the next step in the ADDIE Model is the advancement of the lesson material. And, for the Virtual Tour, that means the selection of a front door. There are 14 actual front doors that offer a facade for the Tour and its many amplified sites. Each is strong in a particular operation, either Concrete or Abstract. Each is also tagged with a psychology for learning: Behavioral, Cognitive, or Humanistic. And, since we are dealing with technology, each front door has also been labeled Easy, Challenging, or Difficult with respect to the intricacy of the tools required to effectively place the Tour online.

Implementation. Selecting a front door commensurate with your lesson objectives and personal technical skills is not difficult. With 14 available, the selection is based first and foremost on your analysis of the lesson goals, followed by the learning styles of the student, and then finally by the technical expertise of the designer. For this article, we have selected the six "Easy" front doors to explore in detail. Let's examine each of them now.

- **Next exhibit:** One of the most readily mastered formats for the Virtual Tour, the Next Exhibit opens with an introductory screen explaining the purpose of the lesson and some simple directions. Textual material is held to a minimum; images control movement throughout the lesson. The learner travels sequentially forward to the next exhibit, returns to the previous exhibit, or ends the tour at any point by returning to the front door. The Evaluation Tag "ABE" indicates that the Next Exhibit is most appropriate for teach-