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Instructional Mediums

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### Abstract

The choice of instructional mediums is essential to the success of every learner.

Countless aspects of an instructional medium can be considered when deciding the most effective media for specific content and a specific audience. Distance learning mediums are no different. Whether it's book and paper, computer based training, or e-learning methods such as computer based training adapted to the online environment, interactive web pages and discussion boards or web conferencing, each medium has its advantages and disadvantages, supports a different style of learning environment, synchronous and asynchronous, and supports and utilizes different factors when it comes to instruction.

## Instructional Mediums

### Distance Learning Mediums Available

Distance learning comes in many shapes and forms. Originally distance education was simple book and paper that was mailed between students and their instructors. Since that point instruction has progressed through early morning television classes on public access channels, to computer based training (CBT), and e-learning via the internet. “If we want our students to be confident, effective communicators in the coming decades, we must prepare them to communicate through digital media” (Dlott, 2007, p. 80). Digital media distance education is where a significant portion of the adult educational world is moving toward. CBT is still an effective medium when addressing static training that rarely changes. However e-learning over the internet has become one of the new primary forms of adult education. Programs such as Lectora, interactive web pages, discussion boards and web conferencing are just a few of the mediums offered in the e-learning internet environment.

### Instructional Media Strengths and Weaknesses

Each of the instructional mediums available, in education and distance education courses, has their advantages and disadvantages. Book and paper learning in the distance environment supports textual learners, allows their learning environment to travel anywhere with the student and allows for constant reference on the students part. However, if the training and education is based on continually changing content books become out-of-date quickly, are costly to reprint and replace, and it is difficult for instructors to access student progress without constant contact when students are solely learning from a book.

CBT programs based from programs such as Lectora provide an interactive learning environment riddled with examples, videos, and presentations, ideal for the visual and auditory learners. However, CBTs can also become out-of-date quickly, become costly to update, and difficult to ensure all learners are working off the most current version of information. In addition, software and support issues should always be considered when it comes to computer training and education.

Since it was reported that “the national student-to-computer ratio declined from 125-to-1 in 1984 to approximately 4-to-1 in 2004 (Market Data Retrieval, 2004)” (Baker, Clay, Scott, Arington & Gratama, 2005, p. 9), it is no surprise that e-learning via the internet is becoming one of the most commonly used forms of distance education today. “We as teachers must do all we can to prepare students to achieve their highest potential. Introducing the tools of the 21st century is an essential part of the preparation” (Dlott, 2007, p. 82). Distance e-learning can come in multiple forms, programs such as Lectora, Interactive web pages and discussion boards and web conferencing are just a few. E-learning provides general advantages and disadvantages as well as specific ones based upon the exact approach chosen. Typically e-learning media is “relatively inexpensive and can reach many individuals who prefer to study whenever and wherever they wish” (Ely, 2003, p.3). Although, it is often pointed out that e-learning will generally bring limited and delayed feedback to students (Wang & Newlin, 2001, p.1). As in the case of any e-learning or internet based activity it is essential to ensure universal access to the information for learners at home, work or in the community, as access should be available by the company for employees to access the training if necessary. Additionally, with any technology the subject of technical issues must be addressed as well.

Lectora presentations can be utilized in CBT or e-learning circumstances. Having the presentations available via the internet allows more diverse examples, presentations and videos to be addressed that may have been too large to provide access to in the CBT version, it assures all students are accessing the same version of the presentation, allows instructors to track student progress and understanding, and can provide interactive feedback from the instructors and designers.

Interactive web pages and discussion boards can provide astounding visual and auditory simulations for learnings, can be updated quickly, allows communication with students and instructors across the country and world, assures all students are working from the same version of information, can track student progress and performance and can assist in providing interactive feedback between students, instructors and peers.

Web conferencing allows multiple students at multiple sites to be addressed by the same instructor simultaneously, much like Interactive TV. It drops in travel time and cost for both the students and instructors. Although, web conferencing does require the instructor and each student to be present at a computer system capable of supporting web conferencing, at the same time.

### Synchronous Learning Mediums

Synchronous learning is a simultaneous interaction between instructor and student and is the most common learning environment. Several aspects and forms of instructional media support the synchronous learning environment. Book and paper are one of the primary supporters of the synchronous learning environment over the past several decades. However, books have their strengths in both the synchronous and asynchronous learning environments. Reading in the synchronous learning structure allows students to

ask questions and interact with the instructor and other students in a real-time discussion to assist in their learning and understanding of the written subject matter. Some aspects of the e-learning environment across the internet are actually in need of a synchronous learning environment, such as web conferencing. Web conferencing requires both the instructor and student to be present, not at the same location but at computers with the appropriate hardware. Web conferencing allows a live video/audio feed to be exchanged between instructor and learner to create a makeshift classroom structure.

### Asynchronous Learning Mediums

Asynchronous learning is a self-paced learning environment, where students and instructors may not be present simultaneously in the learning environment but still have open forms of communication. Book and Paper instruction is often a supplement to both the synchronous and asynchronous learning environment. However, the use of book and paper general becomes and asynchronous learning activity in which students read on their own to later discuss the content. CBT is a generally accepted supporter of the asynchronous learning environment. CBTs fundamental design is for self-paced learning in a directed line of study. It allows students to progress through their training as fast or as slow as they desire. While assuring students are learning exactly what is desired but the instructional designer. E-learning techniques via the internet are generally asynchronously based like Lectora presentations and interactive web pages. They are designed for a self-paced, self-accessed learning structure.

### Selection of Instructional Mediums

When selecting a medium for instruction there are countless aspects of the educational environment to consider. The choice of a synchronous or asynchronous

learning environment is an essential decision for the success of the students. Although “Bonk and Dennen (2002) warned that without deliberate planning, asynchronous media can exacerbate a learner’s feeling of isolation by allowing for scattered forum postings (i.e., message postings) in lieu of a meaningful and intellectual dialog (i.e., discussion questions)” (Cheng-Chang & Sullivan, 2005, p.1). It is important to recognize that when planned correctly and in potentially utilized a hybrid approach of synchronous and asynchronous learning any subject should be able to addressed successfully in the distance education world.

Ely recommends additional sources such as TAG’s Media Selection Worksheet created to assist instructors in the most effective selection of instructional media methods by answering a handful of simple questions about the information being presented, audience, and presentations methods desired. (Maricopa Center for Learning and Instruction, n.d.).

Pennsylvania State recommends the selection of instructional media and tools should be based off of seven basic principles (n.d). First, the selected media must be capable of supporting the learning goals and objectives for the course (p.16). Second, accessibility of the learners to the instructional medium should be considered. Learners must “have reasonable access to the technology” (p.16). Third, a thorough evaluation of the “added value” of the instructional media should be conducted (p.17). Fourth, learners should be familiar with the mediums chosen or training should be built into instruction. Fifth, student diversity in knowledge and approach should be considered in program design. Sixth, “distance education program design should employ a systematic design

model to guide the selection and application of media and tools” (p.18). Finally, contingency plans should be constructed and in place in case of technical problems.

Each of these considerations are essential when addressing the most effective choice of instructional medium: support of content, technology available to learners, the purpose, support and added value to learners, familiarity with technology, broad range educational approach, design and back-up plans. The consideration of each of these aspects, along with the specific advantages and disadvantages, and the ideal learning environment, synchronous or asynchronous, are vital factors to keep in mind when considering specific instructional mediums.



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