

## **MCTE 628, Instructional Systems Design**

### **Portfolio #1-5: Chapter 5, *Selecting and Developing Delivery Systems***

Exercise C: ***Identifying Channel Requirements***

Exercise D: ***Identifying Appropriate Grouping***

*by Leanne C. Boyd*

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Professor: George Fornshell, Ph.D.  
Student: Leanne C. Boyd  
Usercode: boydl  
Email: boydl@scis.acast.nova.edu  
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## **Types of Technologies and Selection Criteria for Distance Delivery**

In the study of delivery systems for learning content, it quickly becomes apparent that the responsibilities of the Instructional Designer must include a broad understanding of MORE than just the design process. Looking to the final integrity of the work, the designer will perhaps assume many roles that will ensure that the process will maintain a high level of quality throughout the ISD stages. He or she will perhaps be active in decision making processes during development, and ultimately, may even each step during delivery. (*Seels & Glasgow, 1998, p. 135*). When this is studied in the light of the most current developments for not just the tools of the Designer, but also the rapidly changing choices for software and hardware for delivery choices, the scope of needed skills becomes somewhat daunting. All of us involved in the most recent history of online learning already have our own tales to tell of sharp learning curves, content that was, or was NOT, presented in an appropriate manner, and tools that fall distinctly below a level for usefulness in a highly technical setting. My best example is the two-year period that I, personally, have attended university, "online." This present day bears little resemblance to Day One.

The Internet has changed drastically in these two years. It is easy to assume that predictions made by those in industry are more or less correct -- that the Internet: will be a *decidedly* different place by the end of 1999. For many of us, this eventuality has already occurred. For much of the world, this is what is coming up: The virtual world will no longer be a mysterious and "skewed" environment, set apart from the real world. Some sources say that in 1999, the Internet will enter a totally new platform ... one in which the virtual world will more and more resemble the real world, and the real world will continue to be redefined by the virtual world. (*Gens, 1998*). These predictions carry a lot of impact for those involved in what probably will become to be known as the next archetypical shift in instructional design. The shift will encompass not only all new technologies, but also a new mindset and a determined ability to stay punctually current on tools and systems, by all participants in the world of learning. This will include everyone from the designer, to the teacher and administrator, to the student.

The crucial setting for most future learning modes lies in the digital world. As we know it today, that would primarily include the areas of CBT and Web-based training (WBT). I make this statement as I believe that all other media offerings will soon be absorbed by one or both of these distance learning possibilities. In my opinion, we have arrived at a technological point where all forms of known communications media, means, and devices are either presently, or soon will be able to be utilized easily and functionally via CBT or WBT.

In our textbook, Table 5.1, *Types of Technologies and Selection Criteria for Distance Delivery*, lists some descriptions for CBT and WBT situations. CBT and Web-based delivery, some requirements would be that the presentation would NOT include a need

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for physical representations of real people and events, and that students are diverse, with a need to accommodate individual differences in the instruction. For delivery that is entirely Web-based, there is a need that materials are NOT proprietary; that the content is ever-changing and there is a need for frequent updates, and that online intercommunications are indispensable to learning. (*Seels & Glasgow, 1998, p. 115*).

This, I feel, fairly adequately describes the Nova setting that I have experienced for a year and a half. To one degree or another, each of these descriptors has applied to my coursework. Referring back to my opening statement, and pointing out some very recent improvements in the University Web site, and also listening to talk about upcoming possible changes to the Nova online experience -- we are ALL dealing with the shifts where "the virtual world will more and more resemble the real world, and the real world will continue to be redefined by the virtual world." How this relates to instructional design and the choosing of appropriate delivery systems, is in the fact that each of us will be required to learn and be familiar with a growing scope of tools, settings, and even ... GOALS.

Even if we take just one example of the widening array of choices, it will effectively deal with Seels' and Glasgow's description of CBT/Web-based delivery NOT including a need for "physical representations of real people and events." There are already systems available for use of simulation software and simulators, or even the variety of simulation-like MUDs, MOOs, and the like. Some applications for the use of simulators, which would include instructional simulations or role-plays, would be:

- "training in motor skills, athletic and mechanical skills, complex skills that might otherwise be too hazardous or expensive in real-life settings
- instruction in social interaction and human relations, where displaying empathy and coping with the reactions of others are major goals
- development of decision-making skills, such as micro-teaching in teacher education, mock court in law school, management simulations in business administration." (*Heinich, et al., 1996, p. 332*).

In our own courses, there is a powerful need for developing digital situations that would enhance the synchronous event! Our own experiences with the (asynchronous) Forums, or even the (synchronous) Moderator program, has left many of us waiting in anticipation for the next step(s). In the choices just mentioned, a simulator would provide added value to the online learning situation -- in social interaction, in presenting complex skills of navigation, writing, and research, and even in the presentation of processes in instructional design.

One very good example of an interactive tutorial that uses motion as well as various forms of multimedia, is the CD-ROM tutorial for Photoshop 4.0 by Adobe. Utilizing *WebCam* software (that captures the screen circumstances for visual [movement] and audio [voice-over via microphone]), even the motion of the mouse is captured so that the learner knows exactly the procedure to follow. Although this is not exactly a simulator, the simulated motions help the learner orient herself in a very "real" environment.

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Absolute state-of-the-art technologies have us at the brink of utilizing even video capture, rather than just on-screen WebCam abilities. These are quickly becoming feasible, cost-effective, and available for widespread use. Adobe's CD-ROM tutorial is an excellent example of CBT, but it also holds all the promise for being a Web-based training environment, especially if the program design includes the ability to access the Web.

In the overview for channels (the perceptual modes required for presentation, practice, and feedback), Seels and Glasgow state that "perceptual mode requirements come from objectives and learning characteristics. The designer can select from audio, visual, audiovisual, kinesthetic, tactile, or olfactory sensory inputs." (*Seels & Glasgow, 1998, p. 122-23*). This, published in 1998, may not have as much connection to today's reality as one may think, because technology has already changed so very much! The multimedia offerings that previously were only appropriate for delivery by traditional Audio-Visual modes, or via videodisc or CD-ROM, are now at a position where they will be used efficiently by Web delivery.



### **Grouping: The Effects Of Group Size**

As with our textbook descriptions for channels, the scene is rapidly changing for decisions concerning group size and its effect on design and delivery systems. The authors state that the selection of media depends on whether the instruction is to be for a large or small group, or for independent study. The decision, then, has consequential implications for the choice of technology, where the technologies appropriate to each situation are different, and also the manners in which a technology is used. (*Seels & Glasgow, 1998, p. 121*).

I believe that current technological advances have blurred these distinctions. The very essence of Web-based delivery is that it has long been ideal for the independent learner, and is rapidly becoming the system of choice for both large and small groups. In fact, there have been many recent events that could not have been accessed in an interactive way, and a profound learning opportunity would have been diminished or lost, without benefit of Web delivery. The most recent of these high-impact events was the Shuttle trip of John Glenn, his triumphant return to space, and the resulting worldwide participation in a *giant leap for [human]kind's history!* This chance of a lifetime was witnessed, experienced, and ... learned ... by millions. The delivery system was the Internet, primarily the World Wide Web.



### **Development And Assessment Advantages Of Web-Based Training**

In the Lecture Notes for this chapter, Dr. Fornshell asked us to compare other approaches such as print, audiovisual, teleconferencing and multimedia training, to the development and assessment advantages in adopting Web-based training for a hypothetical national

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sports organization, which he used as an example. (*Fornshell, 1999, p. 3*). It is at this point that I must make the strong suggestion that, for reasons I've already made, we no longer have to compare, but ... encompass. All of the positive benefits of these other approaches, including the downloading and printing of a hard copy to read in front of a roaring fire, are utilizable in Web-based delivery!

Sometimes, the timeliness of the Internet is astounding. In researching the topics of Chapter 5, I came across almost an "on-demand" and encapsulated answer to these questions concerning Web delivery. As in most of my research, new offerings almost always come out of the business, rather than the educational, sector. The implications of these findings for education, online learning, and instructional design, however -- are tremendous!

*ActiveTouch*, on February 8<sup>th</sup>, announced a new free service that promises to make Web-based meetings as productive as face-to-face meetings and as ubiquitous as email." They have developed the *WebEx Meeting Center*, which is now the first service to enable sophisticated, real-time observable and spoken interaction across the Web. Furthermore, it requires only an ordinary browser and a telephone. It enables unrestrained sharing of documents, presentations, Web content, and even applications. Also, the on-site *WebEx.com* provides competitively priced, Web-based *teleconferencing*.

The software creators intend that *WebEx* will metamorphose the Web from simply an information reservoir into an interactive meeting place for people to link and work together -- easily, naturally and securely. It will offer powerful real-time interactivity services ... *for free*.

It is created so that everyone with a browser will be able to use it -- at work and at home. They propose that this provides what is conceivably the final missing key element in making the Internet a useful medium for real-time interaction and information exchange, and the "to-date" leading example of real-time Web collaboration services. Indeed, this could revolutionize data communications in the identical way that the telephone revolutionized voice communications. Time spent on the Web site revealed to me that this will allow people to show and illustrate any type of document, to share and work on any type of application, or watch an application being run by someone else. It will allow for entire groups to jointly surf the Web.

The technology behind all of this was a bit more complex and dealt squarely with our topic of delivery systems. The success of the *ActiveTouch WebEx Meeting Center* is based in its T.120 network server, which provides carrier-grade data collaboration and communication via a simple Web-browser interface. This gives the service scalability and functionality that they claim, so far, is unmatched.

One last consideration that was impressive to me was the extreme user-friendliness of the *WebEx* system. They offer a transparent client, which means the user is not faced with downloads, installation, or configuration. Telephony integration enables group members to synchronize what they see and hear. It appears to be a very usable -- and synchronous -

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- solution for learners and workers in literally every situation. It has emerged as a possible solution for many educational institutions that are immersed in distance learning and Web-based delivery. Such as Nova!



### Conclusion

IDC (the International Data Corporation) speaks of changes in global commerce in 1999. Again, I propose that the usual setting is that economy initiates, and education follows, in most strides in technology. There will be integration of *virtual* and *real* sales and support services. Leaders in commerce will voice-enable their Web sites, while "brick-and-mortar" retailers will place Internet kiosks in key locations in their stores. The reason is that customers want the best of both worlds! Virtual-world shoppers want the benefits of live customer services, and the brick-and-mortar folks want the global information resources of the Internet. (*Gens, 1998*). To me, these desires sound identical to what is wanted and needed by the designers and learners in online learning systems!



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