

## Strategies for Designing a Distance Education Course/Program

By: J. Don Chaney, Elizabeth H. Chaney, Michael L. Stellefson, and James M Eddy

Chaney, D.J., Chaney, E.H., Stellefson, M.L., & Eddy, J.M. (2008). Strategies for designing a distance education course/program. *The Health Education Monograph Series*, 25(1), 18-22.

**\*\*\*Note: Reprinted with permission. No further reproduction is authorized without written permission from Eta Sigma Gamma. This version of the document is not the version of record. Tables can be found at the end of the document. Link to Full Text: <http://www.etasigmagamma.org/sites/default/files/file/THEMS%20Back%20Issues/THEMS%20V25%20N1%20Sp%202008%20The%20Use%20of%20Technology%20in%20Health%20Ed.pdf>**

### **Abstract:**

The past decade has brought about a rapid growth of distance education (DE) courses and programs; this is particularly evident in the field of health education and promotion. This article provides an overview of strategies utilized in designing DE courses and programs. The process of designing DE courses, called Instructional Systems Design (ISD), mirrors the process used by health educators and promoters in their everyday practice. The authors take the reader through each step of the ISD, as it relates to the health education process, and provides additional resources for DE course and program development for interested readers.

### **Article:**

The past decade has brought about a rapid growth of distance education course offerings and programs (Moore & Anderson, 2003, Zheng & Smaldino, 2003). Such interest and growth in distance education is particularly evident in the field of health education and promotion (Chaney, et al., 2006). This explosion of interest in distance education programs has emerged in response to the need to provide time-bound and location-bound students with access to educational opportunities that would not have been afforded to them if only offered in a traditional, face-to-face format (Belderrain, 2006). Due to this need, and demand, for alter-native instructional methods, academicians are called to re-vise and re-think pedagogical strategies and delivery methods.

Distance education courses and programs provide a mechanism of distributed learning, in which the learner and instructor are physically separated during the learning process (Keagan, 1986). Communications technology has been the primary vehicle used for delivering instruction and facilitating communication between the learner and the teacher· however, as new technologies emerge, and the current and old technologies change, course and program developers must put forth an exhaustive effort to integrate the technologies that meet the needs of students and foster collaboration and interaction among learners. To do this, developers must organize the collaborative work of a team of professionals, who create the content and pedagogical strategies, to ensure it is suitable to meet the needs of all stakeholders (i.e. students, instructors, administrators, academic departments, and institutions). To an individual or institution just beginning to think about engaging in distance education offerings, this may appear to be a

daunting task, with many unpredictable outcomes; however, approaching the design process with a plan for developing, implementing, and evaluating the courses and programs (as with any health education and promotion program), will help to reach course and program success.

The purpose of this article is to provide an overview of strategies utilized in designing distance education courses and programs. The process of designing distance education courses mirrors the process used by health educators and promoters in their everyday practice; it is all about thorough planning, following the plan through implementation, and evaluating the short-term and long-term results. Only in this case, the measured results are centered on the educational objectives and learner outcomes desired by the instructor, learner, and learning organization.

## INSTRUCTIONAL SYSTEMS DESIGN

Many institutions, when initiating the design of a distance education course or program, use the Instructional Systems Design (ISD), which is a series of steps that represent a planned approach to course and program development. ISD is “a product of several theoretical perspectives on learning and teaching; these include systems theory, behavioral psychology, and communications and information theory” (Moore & Kearsley, 2005, p. 101). The authors of this article argue that the steps presented in the ISD parallel the process of health education, but focuses more on quality indicators of course delivery and design variables that are pertinent for course and program development (i.e. learner autonomy, interaction, access, costs/economies of scale). The following provides an outline of how interested readers can utilize the stages of ISD to effectively design a distance education courses and programs.

### *Step 1: Analysis Stage (Needs Assessment)*

In the first stage, developers must delineate the needs of *all stakeholders*— learner, instructor, supporting departments and institutions, and the profession. It is important to identify the characteristics of the learner, such as learner autonomy and learner control. Think about the learner(s), and in this initial stage, find out how much control these students have over their learning situation. In addition, due to the physical separation of the learner and the instructor, the student must be capable of functioning in a more autonomous manner in order to meet the educational and learning objectives set forth by the instructor (Shearer, 2003). In higher education, it is more often than not assumed that the students possess the characteristics of a self-directed learner with high levels of control; however, not being clear on the needs of the students may lead to learner dissatisfaction, and ultimately, course and program failure. For example, if a cohort of students opt to take a distance education course, due to time, scheduling, and more flexibility, and the developer provides a course with synchronous structure (which is a type of distance education that connects students with teachers and the material in real-time communication), including timing, pacing, and specific deadlines for projects, then those students may not have as much control over their learning environment, due to competing demands (time, schedule, etc.). This may result in those students either dropping out or not performing to their potential, simply because of the structure of the course. However, some students may prefer and work better with such structure. In the experiences of the authors, graduate students have shown to be more autonomous and exhibit ability to engage in asynchronous, less structured formats than undergraduate students; however, conducting a needs assessment and gathering information on the learner(s) will help to delineate what type of structure best meets the needs of students in order to provide a positive learning environment.

The needs of the students are not the only needs that should be assessed in this stage. It is also important to provide a mechanism for collecting data on the needs of the instructor, administrators, and faculty in the academic units, university, and the profession. Also, background information on the market competition, in terms of how this particular course and/or program will compete in filling the gaps of what is truly needed in training upcoming professionals, is an imperative task that needs to be conducted, prior to jumping in and implementing a new course or program. It is only through a collaborative approach that a distance education course and program will be successful, and making sure the goals and objectives articulate with the mission of the institution and profession, the goals of the faculty, administrators, and instructors is imperative for the supportive environment necessary for success.

Additionally, an analysis needs to be conducted to identify the specific content levels, skills, or performance necessary to demonstrate the learners have mastery of the subject matter. In other words, what are the educational objectives and learning outcomes that are pertinent to demonstrate the course or program is a success? This is an important question to ask in the beginning of the analysis phase. The answer will drive the remainder of the design process.

### *Stage 2: The Design Stage (Planning a Program)*

In this phase, the designers take the initial ideas of the learning objectives, identified in stage 1, and specifically articulate the objectives for the course or program. According to Gagne (1992), learning objectives involve five levels: intellectual skills, cognitive strategies, verbal information, motor skills, and attitudes. In developing a distance education course, these learning objectives ultimately involve knowledge, skills, and behavior, and the conditions under which these are assessed. How will the learning objectives be measured? These questions provide the foundation for the last phase -the evaluation plan.

During this stage, the developers also need to consider several very important quality indicators and factors, including: technology, interaction, access, and resources and costs. These factors are important for making decisions regarding how the course or program will function. As a matter of fact, these factors may come into play before the initial phase of development begins; however, it is within the design phase that these factors truly affect the structure of the course (i.e. course presentation and functionality).

**Technology:** The use of technology in education has transformed the way in which educators can present ideas, material, content, skills, and communicate with students; however, in the same vein, technology should not drive the design process of a distance education course or program. There is no “one best technology” that should be used in designing programs. The needs of the stakeholders, along with the learning objectives, should dictate the type of technology, or combinations of technology, used to deliver instruction and material to students. All too often, instructional designers turn to the most expensive and latest technology, as the best technological method for course delivery, when in actuality, previous research studies indicate that the most expensive and latest technologies do not always support and facilitate learner autonomy, access, or costs (Shearer, 2003). Developers need to be weary of falling into the trap of letting the technology dictate the design process. The technology used is only a piece of the design process, and will be determined based on the data collected in stage 1.

**Interaction:** There are several types of interaction that are important to simulate in a distance education learning environment—student-teacher, student-student, and student-content. These three types of interaction are critical components to consider when designing a distance education program. How will these interactions be facilitated and supported in the learning environment? Additionally, how will these interactions be examined? According to Shearer (2003), these interactions need to be examined on how the interactions occur, frequency of occurrence, timeliness, and types (i.e. discussions, conversations, questions). The design team needs to determine what standards of acceptability should be set for each of these questions. This will dictate the appropriate levels of interaction for the course and/or program.

**Access:** It is important for developers to consider issues of access when designing distance education courses and/or programs. There are several ways to conceptualize issues of access when discussing technology; however, in education, access issues can be “viewed in terms of gender, culture, financial, geographic, supply and demand, disabilities, preparedness (entrance exam qualifications), motivational (self-esteem), language” and many more ways (Shearer, 2003, p. 279). Viewing access, or lack thereof, in the context of physical separation from the instructor or in the terms of technology is limiting the scope of the real issues of access. Additionally, there is an argument that access to technology is not the problem today, but rather the usability of the technology. It is important for designers to consider these issues when thinking about meeting needs of stakeholders through the distance education course offerings.

**Resources and Costs:** An assessment of resources and policies for cost models at the institution designing the distance education initiative is imperative in the design phase. Traditionally, the costs for developing distance education courses and programs involve high costs for development, with low delivery costs for students. However, as the pool of students increases, the cost of development is spread out from the income provided by the increased number of students. The way, however, in which the profits are distributed to stakeholders, is what becomes unique to various institutions, depending on their policies for cost models.

As the developer, one must understand the costs associated with the technology used for communication and instruction. An important question to consider when thinking about what technology to use includes: *As technologies are added, how much does this drive up the cost of development and delivery to students?* In addition, it is important to understand the cost structure of the institution, in terms of how much students will be charged for taking a distance education course, who receives the profits from the course being taken, and are there incentives for faculty to support the everyday operations and functioning of a distance education course and/or program? Lastly, it is important to assess the shelf-life of a course, once developed. How long will the course material meet the needs of stakeholders and the learning objectives? Revisions and updating of courses are imperative, but it also takes resources and drives up costs, which means developers need to have a plan to address the fiscal needs of course and program revisions, in order to improve the academic quality of the course offerings.

### *Stage 3: Development Stage (Planning the Program, Continued)*

In stage 3, the Development Stage, the designers actually construct the course outlines, lectures, materials, discussion boards, and course activities to be implemented in the next phase. The information collected from the first two stages guide the development of the products in this

phase. The key here is to make sure that, collectively, the course and/or program lectures and materials work to meet the learning goals and objectives.

#### *Stage 4: Implementation Stage (Implementing the Planning Program)*

It is in this stage that all the planning conducted in the first three stages is put into action. It is important to have a team of implementers (faculty, staff, and/or graduate students) to provide constant technical support to students, if needed. This means that if students have questions regarding the use of the technology, there needs to be several who can assist that student in solving the problem, or implementing a backup technology plan. For example, in the institutions that the authors have been affiliated with, a combination of technology has been used to deliver the course materials. If the web-based, video-streamed lectures were not working, for some reason or another, with a particular student, CD-ROM's of the course materials were provided as a backup plan. As the instructor of the course, once the course is implemented, it is important to maintain the quality of the teacher-student interaction by corresponding regularly and often with students. Additionally, it is imperative to monitor the other types of interactions to ensure a high quality learning environment for all students.

#### *Stage 5: Evaluation Phase (Evaluation of the Effectiveness of the Program)*

As with health education and promotion programs, a critical piece to the distance education course and program is evaluating the effectiveness of the course materials and pedagogical procedures. This includes ongoing evaluation (formative and process evaluation) and testing, from the first stage, to assess if the course content, delivery, and effectiveness is of the highest quality possible, with the resources available. Additionally, this phase involves assessment of learning objectives by evaluating if students are grasping the concepts, knowledge, and skills necessary to demonstrate mastery in the course. The overall learning experience is what is key, in this assessment, and therefore, it is important to gather data on the quality indicators for student and instructor satisfaction with the virtual classroom experience created by the design team. For more information on quality indicators of distance education courses and programs, the authors refer the readers to Chaney et al. (2007).

#### CONCLUDING COMMENTS

The key factor in the success of almost all distance education program initiatives is the process that is used to design, deliver, and evaluate the educational effort. For many, distance education is perceived as a technology focused application. This is not the most effective way to approach the design of a course or program. The key is following a plan, which is mainly driven by the needs of the stakeholders. This article has provided a general outline for such a plan, in hopes that interested readers will take this outline and expand, adapt, and use it as a foundation for distance education course/program delivery initiatives. For additional re-sources, see Table 1 for general design principles, adapted from Moore and Kearsley (2005, p. 125), and Table 2 for recommended readings on course and program development.

#### REFERENCES

Beldarrain, Y. (2006). Distance education trends: Integrating new technologies to foster student interaction and collaboration. *Distance Education*, 27(2), 139-153.

Chaney, E. H., Eddy, J. M., Donnan, S.M., Green, B.L., Glessner, L., & Lara, R. A primer on quality indicators of distance education. *Health Promotion Practice*. Prepublished May 2007, DOI: 10.1177/ 1524839906298498.

Eddy, J.M., Donahue, R, & Chaney, J.D. (2001). A contextual relative approach to designing a masters program in health education using distance education technologies. *The International Electronic Journal of Health Education*, 4, 377-384.

Gagne, RM. (1992). *Principles of Instructional Design*. 4th Ed. Austrailia: Harcourt Brave Jovanovich.

Moore, M.G., &Anderson, W.G. (Eds.). (2003). *Handbook of distance education*. Mahwah, New Jersey: Lawrence Erlbaum Associates.

Moore, M. & Kearsley, G. (2005). *Distance education: A systems view*. 2nd Ed. Belmont, CA: Wadsworth.

Shearer, R. (2003). Instructional design in distance education: An overview. In M.G. Moore & W.G Anderson (Eds.), *Handbook of distance education* (pp. 275-286). Mahwah, NJ: Lawrence Erlbaum Associates.

Zheng, L & Smaldino, S. (2003). Key instructional design elements for distance education. *The Quarterly Review of Distance Education*, 4(2), 153-166.

## TABLES

**Table 1: General Design Principles**

- 
- Good structure -The course components must be organized and contain good structure. Students should know what is expected of them, in every aspect of the course; there must be internal consistency throughout all course modules, lectures, and activities.
  - Clear objectives -The course must contain specific learning objectives that clearly dictate what students must know and do to demonstrate mastery of the subject matter.
  - Small units -The content should be organized in small units or modules, with each corresponding to a different learning objective.
  - Planned participation-The designers must include all stakeholders (including students) in the development of the program. Students want to and will participate, to increase interaction; however, such participation and interaction need to be structured and organized.
  - Completeness -The courses need to contain all the materials (lectures, activities, articles, illustrations, discussion boards and forums) needed for students to successfully progress through the course. These materials need to be completely developed, and accessible to students, prior to implementation.
  - Repetition -It is acceptable for courses to provide repetition of key concepts, presented through different instructional methods, to reinforce importance and learning.
  - Synthesis -Key concepts, from the lectures or student discussions, need to be woven together (maybe in summaries or capstone experiences) to enforce synthesis and understanding of all the "pieces" of information learned in the various units or modules.
  - Stimulation and variety -Distance education courses should utilize different methods of introducing the course content to students (i.e. various formats and media, guest lecturers, course activities, discussion groups or discussion board conversations). It is important to "spice things up" to hold the attention of the students, and to appeal to their interests and varying backgrounds.
  - Open-ended -Whenever possible, it is important to provide open-ended assignments, papers, and activities to allow students to apply the content learned.
  - Feedback and evaluation-Instructors should provide students with regular and timely feedback on assignments and progress in the course. In addition, the effectiveness of the course should be monitored often.

*Note: The principles listed above are adapted from Moore and Kearsley (2005, p. 125)*

---

**Table 2: Recommended Resources for Interested Readers**

Guidelines for Web-Based Course Design	<a href="http://www.fgcu.edu/onlinedesign">http://www.fgcu.edu/onlinedesign</a> <a href="http://www.edtech.vt.edu/edtech/id">http://www.edtech.vt.edu/edtech/id</a> <a href="http://www.cast.org">http://www.cast.org</a> <a href="http://www.rit.edu/-easi">http://www.rit.edu/-easi</a> <a href="http://ncam.wgbh.org">http://ncam.wgbh.org</a> <a href="http://trace.wise.edu">http://trace.wise.edu</a> Moore & Kearsley (2006)
A Primer of Quality Indicators of Distance Education Courses	Chaney et al. (2007)
General Information on Distance Education	Moore & Anderson (2003), Moore & Kearsley (2005)
Distance Education in Health Education	Eddy, Donahue, & Chaney (2001), Chaney et al. (2007)