Multiple-Delivery Systems—A New Approach to Education Courses

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Abstract: Multiple-delivery Systems: A New Approach to Education Courses at Indian River Community College (IRCC) addresses the needs of non-traditional pre-service education students through multi-media Internet-based courses in education. These courses are learner-centered and combine the synchronous format required to develop social interaction skills with the asynchronous access to information and to assignments. The course addresses multiple learning styles and promotes active student learning, while facilitating student success by providing web-based college support services online. An example, "Introduction to Education," features instructional lesson summaries and lectures using streaming video and graphics, graphic support materials, e-mail, chat rooms, message boards, and multi-media technology to address auditory, visual, and kinesthetic learning styles. A description of the web-based course and an introduction to the student support services available to students is presented. Also, this paper presents the rationale for the course components along with a description of the additional courses engendered by this prototype.

How do you develop an on-line course that uses state-of-the-art technology to address student learning styles and that uses a virtual campus to meet Southern Association of Colleges and Schools (SACS) criteria? Distance Learning challenges faculty to capture the atmosphere of a traditional classroom and to communicate that atmosphere in an asynchronous manner. An additional challenge arises when the course serves the dual purpose of providing prospective teachers with a pre-requisite knowledge base for entry into a teacher education program and of showcasing the skills that characterize effective teaching.

All too often Internet classes are little more than high tech correspondence courses that offer communication only in a half-duplex mode. In other words, the instructor poses a set of exercises and of assignments. At a later time the student completes the work and sends it to the instructor only to be forced to wait again for results. This delay yields a sporadic stimulus-response system that is mutually unsettling. The impersonality of the experience invariably results in high attrition rates.

These negatives, however, can be reversed so that the Internet experience can be rewarding both to the instructor and to the student. McArthur and Lewis point out that "information technologies can improve the efficiency of learning and teaching" (1998). The Internet-based "Introduction to Education" course from Indian River Community College (IRCC) features multi-media streaming, video, and Internet resources to promote efficient learning. Moreover, as Frayer and West (1997) suggest, students are more actively engaged in the learning process, practice more, and receive useful feedback when learning styles are matched to the learner. This course uses state-of-the-art technology to address auditory, visual, and kinesthetic learning styles, while providing synchronous and asynchronous active student learning, educational resources, and extensive support services. "Introduction to Education" uses Internet-based instructional lesson summaries and lectures, streaming video and graphics, graphic support materials, e-mail, chat rooms, and message boards to create a successful learning experience. The student is able to see and hear the instructor and take part in class discussions. Students learn various teaching methods as they engage in the activities thus improving their personal teaching skills (Collins, Brown & Newman, 1989). There is less isolation for the student, and a feeling of camaraderie frequently develops among fellow students. The intimidation of communicating that might exist in a classroom setting disappears, and the frequency and intimacy of communication among students and between students and instructor increase (Chickering & Ehrmann, 1997).

As this course was conceived and designed, the student's needs took priority. Among the design principles are those enumerated by Kozma and Johnston (1991): using multiple modalities to engage students in drills, simulations, critical thinking, collaboration, scholarship, and construction of knowledge. Subject matter, concepts, and skills were presented using various modalities and in varied format. A student who needs to utilize a visual method of learning receives visual reinforcement. The student who needs to apply a more tactile approach is accommodated as well. The clarity of the streaming audio and video replicates the classroom situation to the extent that students have reported that "it was like having the instructor in the living room." Insofar as that was the case, the design was successful. The successful completion rate for this class is among the highest for the college, whether Internet, Interactive Television, Telecourse, or the traditional classroom.

During the development phase, the quality of the streaming media was a major focus. The course must be delivered so that the quality remains consistent whether the student has a state-of-the-art computer setup or a rather marginal one with a less than 56K modem. An initial welcoming video serves to introduce the instructor to the class. Using Real Media, the quality of the video is excellent and free from the distracting jerkiness of some web-based video. Lectures for each chapter in the course text were written by the instructor and recorded in the Distance Learning studio. The recordings were carefully edited to remove extended pauses, incomprehensible phrasing, and extraneous noise. Using Sound Forge, the finished product, 9 lectures in all, was loaded into RealMedia and matched with a set of PowerPoint slides that highlighted key points in the lectures. These slides may be printed for study purposes.

The separate yet integrative components of this course include a set of video tapes provided by the textbook publisher. These videos are keyed to individual chapters in the text. Each is remarkable in that it generates fervent discussion among students. These discussions take place on the message board and in the chat room. With the instructor as facilitator, these discussions allow a personal level of involvement for everyone.

Written assignments for this course include reflections on journal articles as well as in-depth research on various cultures. Assignments are e-mailed to the instructor who grades them online and resends them to the student. Immediate feedback is crucial in distance learning. The rapid turnaround of assignments offers the distance learning student immediate reinforcement.

Student progress in the course is measured by a series of online tests. There are two testing formats available for each test, either multiple choice or essay. The student chooses the format preferred. The test is available to students during a specified number of days. Students are allowed only one attempt and receive their score upon finishing the test. A time limit is imposed for each test. The final examination is proctored and must be taken at a campus site.

The last piece of the process is the support provided by the college itself. The IRCC web site replicates campus support services through a virtual campus. Students can read the IRCC Catalog, can obtain financial aid information and applications, can check up-to-date class offerings, can register, can buy textbooks and supplies, can access educational support materials and resources, and can use library resources on-line.

The course is mounted on the Internet using Web-CT. This relatively user-friendly course presentation software offers the flexibility required for the various course components. IRCC faculty interested in developing courses for the Internet receive intensive training in the use of Web-CT and the Distance Learning technical staff are available at all times to assist, to offer advice, and to provide video and sound editing. Successful creation of these materials depends on the communication between the educational faculty and the distance learning support team. Through teamwork, technical knowledge and course content are fused to design and to develop a successful distance learning course offering. Realizing that any such endeavor will always be a work in progress, adjustments, refinements, and additional resources can be added as needed. In a sense, then, the course does not become stale. Just as the classroom can become rigid and tiresome, any web course must receive regular and critical evaluation. Student evaluations, peer review, and experiential data supply the information used to update the course.

The success of this education course, both from the instructor and the student perspective, has given rise to the development of similar courses in Mathematics, Earth Science, and Ecology. Taking full advantage of new technology, virtual field trips, real-time interactive and asynchronous classroom visits, and web-based resources all become the delivery method and the substance of the student's learning experience, transcending the limits of a typical virtual classroom.

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