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## **A Methodology For Planning Distance Learning Courses**

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### Abstract

This article is based on personal experience gained as a result of facilitating over sixty asynchronous classes over the last four years. The article is organized into five areas of review and consideration which can assist the faculty member to plan and develop a learning-centered course intended for distance delivery. Whether in the classroom or on the Internet, critical scrutiny and analysis of the elements of a course is essential for development of a high quality course. The review points presented in this article specifically address key considerations for development for a course delivered in a virtual environment.

### Introduction

Almost every higher education facility and many secondary education organizations provide some of their instructional products at a distance. Courses exist in all departments and schools covering topics from business, history and language to mathematics and engineering. As the demand for these learning objects grows, more and more faculty are taking their classroom based courses and developing parallel versions which can be delivered in any one of several distance learning environments. Often, the transition from classroom to Internet involves radical changes in the materials, textbook and testing tools. This paper looks at some important steps in the transition process.

### Distance Learning Courses

Distance learning courses have become so widespread and commonplace that many educators firmly believe there is little difference between students learning in a traditional face-to-face class and those learning in virtual, internet environment (1). This shift in the educational modality has resulted in faculty closely examining the content of their classroom courses as part of the retooling effort for creating the distance learning version.

It is suggested that faculty, while examining a course in advance of presenting a distance version, keep in mind that the way in which a course is presented is only loosely related to student learning (2). There is a process for teaching and there is a process for learning.

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The teaching process is managed by the faculty member and the learning process is managed by the student (3). Experienced classroom faculty know that they must present material and assignments which lead to and promote student learning. Likewise, the faculty member who prepares and presents a distance course must present materials and assignments which encourage and facilitate the student learning process.

During the last four years, this author has developed approximately a dozen distance learning courses on a variety of business and technical topics and has facilitated in excess of sixty classes presented over the Internet. This article is based upon the personal experiences acquired as a result of this work. These suggestions were organized and are presented in the hope of assisting and encouraging classroom faculty to join the virtual teaching community and expand their teaching talents into the world of distance learning.

### Delivery Technology and Format

There is a wide variety of technology tools available as a support foundation for course delivery. My experience is that the University offering the course will have one or two preferred platforms and a support group to answer the initial questions related to hardware and software to be used. Use of these resources is the starting point.

Once beyond the basic course delivery software tool, the course content and delivery methodology are the responsibility of the faculty member. Some faculty prefer a completely text-based approach while others favor the use of videotapes or CD-ROM tools to deliver the information. Mail order correspondence is still an available delivery mode, but its use is not fashionable (nor timely) in today's digital world. Instead, the Internet has become the delivery channel of choice for providing instructional materials. As quick and efficient as the Internet is, it has definite bandwidth limitations. Just as the number of television channels, over a 50 year life span, has increased from one to three to twelve to five hundred and beyond, the bandwidth limitations of Internet communications will diminish and disappear. Increased television channels have transformed the entertainment industry in unexpected ways. Increased Internet bandwidth will transform the distance learning industry and cause it to evolve into a commonly accepted part of our lives.

As the distance learning industry evolves and grows, we will see a wide range of new technology tools come and go. Current examples include instant messaging, voice-over-internet-protocol and steaming video. Reading any current magazine or journal which addresses distance learning will provide information as to how these digital gadgets are being introduced and used in an attempt to enhance the distance learning experience.

However, in fact, the intent and objective of distance learning is no different than any other kind of basic learning which has been part of human nature for all of our evolution. From prehistoric fire keepers and medicine men to the great European Universities of the middle ages to the prestigious brick and mortar institutions of today's Ivy League, the basic, key components of learning remain unchanged. The concept of learning has always included (1) an increase in knowledge, (2) memorizing and reproduction, (3) the

ability to apply knowledge, (4) understanding and (5) seeing something in a different manner. The overall objective of the learning process is to change the person to whom the learning is directed. These are, and always have been, the expected outcomes of any learning process.

Often, when a faculty member wishes to take his classroom based material into the distance learning realm, the starting point is the technology tools and involves which of them is to be used. Instead, the faculty member should remember that the learning process remains unchanged even when a new delivery channel is employed. The outcomes need to take precedence over the delivery modality. Development of a distance learning course should progress in much the same manner as one intended for face-to-face delivery.

### Distance Learning Course Considerations

As an ex-marketing and sales executive, I can't help but view students in the same light as I did customers. Everything done by faculty and administration should center on the customer (Oops, I mean student). We need to acknowledge the needs of our students. For instance, the needs of traditional students (recent high school graduates and 18-20 years old) are vastly different than the needs of the adult learner. We also need to keep in mind the varied learning styles of students in our virtual classroom and how to configure our course to best address the widest range of learning styles.

With this in mind, I offer the following points for faculty members to review and consider during the development of a distance learning course. These points may be followed in a step-by-step manner while keeping the learning process and intended outcomes clearly in view.

### Five Points for Review and Consideration

**1. Topic Review** No matter what the subject of a specific course, there exists a body of commonly accepted knowledge which provides a foundation upon which to build the course. This foundation starts with a set of topics that the course needs to address and leads to the development of a set of activities (readings, lectures, problem solving exercises, and even testing) which assist student learning. This leads to a top-level course goal that the student attain a level of competence within the specific body of commonly accepted knowledge. The distance learning instructor begins to develop a list of specific topics first from the foundation body of knowledge. The instructor must clearly see what he wants the students to learn.

The instructor, in order to challenge students, should then consider the gray areas of specific topics – those areas which are neither black nor white – neither right nor wrong. These areas can be used to promote and sustain interactive communications. Initial interactions may consist mostly of students addressing and asking questions of the faculty member. However, the gray area topics can effectively be used to encourage student to student learning interactions.

An online course consists of more than posting a lecture or a few PowerPoint charts. I have found that a course runs smoothly when the content is arranged in predefined modules each containing a few closely related topics. For instance, a ten week course may be arranged in ten learning modules. Each module might contain a theory-based reading assignment, a lecture addressing the faculty member's emphasis of specific topic points, an applied case study, a hands-on laboratory exercise and a performance assignment which allows the student to demonstrate mastery of the topics. Some faculty prefer to include short tests within each module while others, like me, wait to complete several modules before testing occurs.

**2. Text Review** For a distance learning course, it is imperative that the instructor use a text which completely covers the material which makes up the foundation body of knowledge for the course. Additionally, the text must be technically accurate, readable, concise and hopefully filled with graphics (to accommodate visual learners). Walking in the shoes of the student, the faculty member must lay out a plan wherein students can learn the foundation material of the course from the text with little or no faculty assistance.

In my distance learning courses, instead of posting lectures which repeat the basic body of knowledge as described in the textbook, I strive to develop a course sequence in which the student starts by using the book (off line) to learn the foundation material (the right Vs wrong answers). As that learning takes place, I use my interaction time with students (online) to post up-to-date examples and details of current events taking place within the field of study. The faculty member must locate material that challenges the right Vs wrong views as provided in the textbook. This supplemental information reinforces the student's commitment to learn and ties the foundation basics to reality. But, more importantly, it opens the student-instructor and student-student discussion channels for exploring the real world aspects of the foundation topics. Finally, interjection of probing questions by the faculty member forces the student to use his newly acquired knowledge in wrestling with answers which fall into gray areas usually not covered in the textbook.

In addition, it is my experience that students prefer to read from a textbook rather than from a computer screen. And, since learning is a private matter, a book fits the needs of the many learning styles encountered in the virtual classroom. Selection of a quality text which meets the needs of a distance learning course promotes and supplements the student's self-directed learning process.

To discourage students who may lurk, silently, and not participate in these discussions, I make classroom participation 30 – 40% of the students overall grade. If the student has the potential to earn 100 points in a course, 40 of those points may come from posting discussion messages or responses to my questions (e.g. a ten week course would offer students the potential to earn 4 participation points per week). Students are encouraged to share their knowledge or experiences or to ask questions which require deeper research into a topic. Not only does this support the principle that students learn from each other, but these regular journals of online discussion assist me to assess student learning. My

students receive an individual feedback message within a few days after a week ends. The message informs each student of how many points were available that week, how many he or she earned along with other comments on their performance. This is a laborious task every week, but the effort definitely results in a more productive classroom. My experience is that during the first week, student participation is low. However, after sending the first set of feedback notes, participation greatly increases.

**3. Sequence Review** As done by faculty for a course delivered in the classroom, the online faculty member must lay out a presentation sequence for delivering the course topics. It is best to design the course sequence so as to produce a range of outputs. Arrange the course around a skeleton of right and wrong knowledge learning driven by textbook reading assignments. Then supplement this foundation with applied, experience-based, instructor led exercises which examine the gray areas which exist within the body of knowledge. This places the responsibility for learning where it belongs – squarely on the student’s shoulders. Sufficient time must be allowed for presentation, learning and testing of each topic.

The “forced” participation strategy lessens the emphasis on testing. As students participate in the classroom discussions, I keep a grade sheet for each student noting the number and complexity level of their participation postings. Trivial messages receive little weight toward earning the participation points for the week. In fact, a student may post four or five messages that simply state agreement with the position of another and earn no participation points for that week.

**4. Activities Review** The next consideration for the distance learning faculty member is to determine what activities and materials can be added to supplement, support and reinforce learning of the course topics when the instructor-student interface is not face-to-face and verbal. Rather than attempting to use the same activities which were part of the classroom delivered version of the course, the faculty member needs to consider materials which better align with the delivery channel. Distance Learning activities may include case studies, games, simulations, essay assignments– compare and contrast, problem solving assignments and research assignments.

I have found that group assignments work very well in the virtual online environment. Small teams can be formed and more challenging, tougher problems can be assigned. In addition to student learning by doing, the pressure exerted by peers, on those students who attempt to perform at minimal levels, is strong enough to prompt better performance. In courses where I’ve included a group project, I have noted active student engagement with their team mates and the topic to be learned. This group work plays a key role in the academic learning experience of students. In addition to providing a supplemental learning environment for mastery of course content, teams also provide students with an opportunity to develop and refine teamwork skills which are needed to succeed in many of today’s workplaces.

**5. Testing Review:** Assignments and testing ensure that learning of the foundation topics for the course is happening. Distance learning faculty need to review the measurement means for assessing student learning. The challenge is to develop appropriate testing tools to ensure that learning of the topic material has happened. Often times, a testing protocol does not transport well when moved from the face-to-face classroom to the distance learning environment. Testing activities must always be judged by questioning whether the activity allows the student to demonstrate mastery of the topic skills.

I have already mentioned forcing participation in classroom discussion with the award of weekly participation points. I also have developed a habit of keeping a grade sheet for each student. The grade sheet includes information about the week by week points earned by a student as well as my impressions of the student's level of learning which is clearly demonstrated in their written exchanges. Within the first couple of weeks of a course, this grade sheet assists me to develop a mental image of learning styles and levels for each student.

### Conclusion

This article has presented several considerations to be used while developing an online or distance learning course. Keeping in mind that the basic, key objectives and expected outcomes are not changed by the new delivery channel, the faculty member needs to redirect his attention away from the technology tools and focus on how to promote student change and learning. The techniques which, in my opinion, work best are 'forced' participation in classroom discussions, weekly feedback and grade messages and team assignments. At key points in the course development process, the review considerations, as presented in this paper, may assist the instructor to ensure a focus on student learning and the development of a quality course.

### Bibliography

1. Turnoff, M. "An End to Student Segregation: No More Separation Between Distance Learning and Regular Courses." *On the Horizon*, 2000, 8(1), 1-x.
2. Wenger, E. *Communities of Practice: Learning, Meaning and Identity*. Cambridge, England: Cambridge University Press, 1998.
3. Nickols, F. "Technology and The Future of Education." *On the Horizon*, 1999, 7(6), 1.x-x.

### Author Biography

Anthony Trippe is a generalist with a BS in chemistry (1966), an MS in Mathematics and Computer Science (1972) and a Doctor of Business Administration (1982). He is an assistant professor at the Rochester Institute of Technology in the Electrical, Computer and Telecommunications Engineering Technology Department. He teaches technical programming

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and computer technology courses in the classroom and over the Internet for RIT. He is also an adjunct faculty member at the University of Phoenix Online Campus where he has been facilitating courses for over four years. His UOP courses include graduate and undergraduate Project Management, Operating Systems, Computer Architecture, Statistics, Strategic Planning and Computer Programming. Much of the information presented in this paper is derived from his personal experience as a teacher and facilitator in both the classroom and on the Internet.

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