Online Education Forum: Part Two - Teaching Online Versus Teaching Conventionally

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ABSTRACT

This is the second in a series of three papers about online pedagogy and educational practice as part of the JISE "Online Education Forum." This paper deals with the question: *How is teaching online different from conventional teaching?* By comparing these differences along several dimensions, a set of recommended practices for online teaching emerges. This article examines issues such as online course organization and planning, teaching guidelines and constraints, relationships between students and teacher, lectures versus tutorials, and assessment of student performance. A transition is underway. The same networking and computing technology that has revolutionized global commerce, and many other facets of modern life, is now being targeted at education. Partnering the Internet with modern course management systems makes it possible for universities to offer online coursework on a global basis. The critical task that lies ahead is to create and disseminate curricula of high quality online that students can embrace and educators can sustain. The overall objective of JISE's Online Education Forum is to examine the realities of college and university online teaching, and the processes of education using today's information technologies. The issues and insights discussed in this forum will provide educators with important tools and the understanding needed to embrace the world of online education.

Keywords: Information Systems Education, Distance Education, Educational Assessment, Online Course Design, Distance Learning, Online Education.

1. INTRODUCTION

1.1 Online Opportunity

Students and faculty are increasingly turning to online education and the Internet to supplement, or even replace, traditional approaches to classroom teaching (Alavi and Leidner, 2001; Altbach, Gumport, and Johnstone, 2001; Hanna, Glowacki-Dudka, and Conceicao-Runlee, 2000; Palloff and Pratt, 2001). Advancements in computer and communications technologies, the Internet, and online education are attractive and powerful new tools for teaching and learning. Some say that these technologies have the potential to revolutionize higher education with increased access to educational services for students and a wider reach in the educational marketplace for academic institutions (Hollenbeck, Zinkhan, and French, 2005; Medlin, Vannoy, and Dave, 2004).

While opportunities to utilize online facilities for teaching and learning have been available for years, universities have too often shown a reluctance to engage in the development and use of these technologies. While pockets of expertise exist in many faculties, the entrepreneurial adoption of online teaching methods in higher education has unfortunately been limited (Fox, Anderson, and Rainie, 2005; Spellings, 2006). As a result, while some readers may find the topics presented in this

paper straightforward, others who are less experienced will find them very useful. As universities move ahead with online education initiatives, the ideas presented here will help to avoid the disruptive and costly problem of numerous faculty members trying to discover for themselves how best to approach online teaching.

1.2 Potential Pitfalls

There are pitfalls in online education for the student and for the teacher. When there is a failure to communicate expectations and the student is not doing what the teacher intends, the situation can deteriorate without either party realizing that there is a problem until it is too late. Regardless of who is at fault, well-meaning individuals can fall into this trap. In a conventional classroom, there are ample face-to-face opportunities to reinforce expectations and clarify misunderstandings. And students can easily check with other students for clarification of what they do not understand. In an electronic classroom, these contacts are not so easily made (Conaway, Easton, and Schmidt, 2005). The teacher must strive to assure that expectations are clear and misunderstandings are minimized. Avoiding pitfalls requires careful planning and detailed structuring of every aspect of the online course *in advance*. Exactly who does what, when, and how it is to be done, must be concisely and clearly specified within the design constraints imposed by

guidelines and systems limitations for given online teaching technologies.

1.3 Need for Coaching

Teaching well online is really very different from teaching in a conventional classroom (Abbott, 2005; Wong et al., 2006). Professors must be prepared to communicate differently and to assert control appropriately in an online medium. They also need to learn to cultivate and sustain relationships with their students online, which can be a time consuming, even tedious, process but which is also a critical part of online teaching effectiveness. A competent teacher could learn how to do all of this 'on the job,' but the likelihood of failing with several highly visible online classes through trial-and-error makes that idea very risky at best.

1.4 Overview

This paper focuses on a comparison of online teaching and conventional teaching, resulting in a set of recommended practices. Essentially, it deals with the mechanics of teaching online, including course organization and planning, teaching guidelines and constraints, mentoring relationships, online tutorials, assessment of student performance, and course evaluation.

2. COURSE ORGANIZATION AND PLANNING

2.1 Careful Organization

The first critical step in the process of teaching online is the detailed organization and planning of the online course (Coppola, Hiltz, and Rotter, 2002; Karuppan and Karuppan, 1999). This goes beyond what one would expect to do as a teacher in a conventional course, far more than just choosing a textbook and developing a typical syllabus, for example (Chizmar and Walbert, 1999). It includes detailed planning for every individual part of a course, including developing specific objectives overall and for each instructional unit of the course, specifying reading and other assignments in detail, and describing specific deliverables. Many online courses include specific focused discussion questions for each unit, all developed before the course starts. In addition to these content focused dimensions, teachers must also document expectations for student performance and to decide how the teacher expects students to interact with him or her, and with other students, through the online media used for the course. Theoretically speaking, faculty are supposed to do this kind of detailed 'prep' for every class, including conventional ones. But, in the real world, professors generally know their subject matter well and, aside from spicing up a lecture with some new material every now and then, they do not do all of this detailed preparation before offering most classes. They do it as needed as a class unfolds week by week during a semester. And for the most part, that works fine.

2.2 Comprehensive Planning

However, this 'adjusting it as you go' approach does not work with online teaching. It will only confuse and discourage the students, and they will lose motivation. In an online course, learners need to know exactly what is expected, when deliverables are due, and how they are expected to do them (Bocchi, Eastman, and Swift, 2004). This is most easily achieved by modularizing the course into blocks of assignments and deliverables organized by topic. Call these 'units of instruction,' or 'chapters of a course,' or whatever. They are called 'units' here. Usually, it is constructive to organize an online course into such units specifying readings, assignments, and deliverables that are to be done during a specific time period, usually weekly or perhaps bi-weekly. Following a regular modular structure throughout an online course helps to establish and sustain the pace of the course and makes it easier for students to keep track of what is due and when.

Generally, a *unit of instruction* includes specific learning objectives for that individual unit, reading assignments, other learning exercises as appropriate, a written 'lecture' (or essay) on that unit's subject matter, and discussion questions to be answered online by students during the assigned time period for doing that unit. All of this takes a lot of careful thought to plan each of the units included in a course. It requires detailed preparation in advance to make the course clear, consistent, and understandable for the students *from the beginning.*

2.3 Establishing Expectations

Experience with online coursework for most students is probably nonexistent or, at best, uneven. If they have taken online courses before, they may not have had good experiences with them because all of this is very new and the pitfalls here are very real (Brown and Liedholm, 2002; Helmi, Haynes, and Maun, 2000). Typically, students do not know what to expect or even how to behave in an online course setting. So, the professor must tell them what to do, how to interact, and what is expected of them. This is best done in writing at the beginning of the course. Simply specifying assignments and deliverables is not enough. This means that the professor *must know* from the beginning what he or she expects from students. When students ask for clarifications through email or in chat rooms, the professor will be able to give well-thought-out, consistent answers. Expectations need to be communicated to the entire group in a consistent way. Trouble results when one-on-one professor to student interpretations are made and others in the class do not receive the same information and understanding. Without this careful preparation, confusion will result. Careful, consistent communication of expectations and detailed course documentation at the beginning are mandatory prerequisites for effective online teaching.

3. COURSE DESIGN CONSTRAINTS

3.1 Reusability

Online courses are not really designed to be offered just once. In a conventional course setting, a teacher may deliver a class one way one semester and a completely different way the next, and maybe a third way after that. The overhead involved in setting up an online course means that too much change is not practical with online classes. Once a class is prepared, it can be offered repeatedly (even by different instructors) simply by reloading a fresh, new copy of the course into the online course management system and opening it to a new group of learners. The reusability of such

courses is an important aspect of online education. It means that these courses have the potential to become valuable intellectual property (Kennedy, 2002). And that value is based upon the design of the course as well as its content. This realization heightens the need to increase focus upon and attention to online course design.

3.2 Look and Feel

Online courses can be configured in many different ways. There is a temptation for course designers to develop courses based upon whatever mood or fashion might apply at the time of development. The problem is that online courses are actually imbedded in software; at least, that is how these courses appear to the students who are the primary *users* of this kind of courseware. It has been well established that a consistent 'look and feel' makes the experience of using software much easier and less threatening or confusing for users. If students must relearn a new online course structure for every course, that detracts from the content of the course and impedes the process of learning. Online courses need consistent design, organization, and structure across the various units in a single course and the various courses in a curriculum. That way, students can concentrate on learning and demonstrating mastery of content, rather than continually adapting to changing course designs or variations in courseware functionality or operability.

Commercial courseware (such as Blackboard, WebCT, Sakai, or Desire2Learn) imposes some structure by virtue of its innate organization as a software package, but such courseware also provides the course designer with the flexibility to change the look and feel of different online courses arbitrarily. It is this kind of inconsistency that should be avoided in course design in order to give the students a consistent look and feel in the courseware that they experience.

3.3 Facilitator Role

The need for a consistent framework for online courses poses a real challenge for universities. Ideally, all of the online coursework offered by a given university should have one prescribed look and feel. The distinction that emerges here is that between a 'course designer' and a 'content specialist.' Conventional professors perform both roles, but this will change (Bruckman, 2002; Gillette, 1999; Jones and Kelley, 2003; Porter, Griffiths, and Hedberg, 2003). Many universities are beginning to employ teams of specialists in educational technology who perform supporting roles for the online education function, such as training faculty to use course management systems or providing help desk support for online students with problems. Another new role emerging here is that of 'online course facilitator.' These individuals help faculty with online course design. They advise the faculty, who are viewed as the 'content specialists,' about design guidelines and standards to be used for their online courses. The objective is to utilize the skills and experience of the online course facilitators to help the teachers develop courses that are consistent with the best current practices for online education.

3.4 Faculty Role

Facilitators also assure that course designs meet specific requirements for inclusion in a given university's online curriculum. This is where things can get really tricky. Professors, who typically have a strong sense of academic freedom, enter into a situation in which a facilitator, who has no responsibility for teaching courses and who does not know the subject matter content, will be significantly involved in designing the courses that professors will teach. This is a really different paradigm for course development, and it may be difficult for some more traditional professors to accept. Furthermore, an online course is subject to review in a way that a course delivered in a traditional classroom is not. Administrators or other faculty with access to the system can review any online course at any time and evaluate any aspect of it.

3.5 Uneasy Professorate

So, the adoption of this technology poses some serious new realities and constraints on how professors operate. There is a loss of control in course design and a potential visibility to outsiders that will ultimately make many in the professorate uneasy with online education, even after they learn to manage the technology (Allen and Seaman, 2003; Schell, 2004). How to implement online education in the face of these realities is a complex question. For the time being, faculty must accept that there is a rising tide here that will sweep away complications and eventually float everyone's boat.

4. ONLINE GUIDELINES

4.1 Basic Principles

Faculty members need to understand ahead of time what to expect in teaching online, what to look for, and how they are most likely to succeed (Cook, 2000; Evans, 2001; Jones and Kelley, 2003). Sending a professor into an online classroom without specific guidelines for operating there can be very problematic. Some of what follows is common sense for dealing with students in any classroom setting, but these principles are amplified strongly in the online situation for several key reasons. First, an online class is more like a series of individual tutorials than a normal group situation. Communications are inherently and mostly one-on-one. Second, there is a significant status differential between the online student and the instructor, just as in a conventional classroom. Many online students are uncomfortable and tend to resist personal contacts through the online system or via emails. Differences in command of written English or in writing skills among the students can complicate this issue. Third, it is difficult for an instructor to judge workload levels in an online course. There is a real tendency to overload the students with work to make sure that an online course, which is potentially visible to other faculty and administrators, has a level of content and rigor equivalent to a comparable conventional course. The opposite of this is that the students can easily overestimate the level of effort that is appropriate for a given assignment and may spend much more time and energy on an assignment than intended by the instructor. Perfectly good students can 'burn out' and be lost this way.

4.2 Communication
To manage these issues, a professor must take the initiative and communicate early with each student in an online class (Arbaugh, 2001). This takes a lot of effort, but it is not enough just to broadcast messages to the whole group periodically. The primary way students begin to feel comfortable communicating with the professor online is by responding to that professor's direct inquiries. And the professor must be the proactive, positive, and supportive agent in this link (Conaway, Easton, and Schmidt, 2005). A systematic plan for contacts is needed here based upon a specific schedule. Once trust has been built and there is a comfort level established, then the online flow of ideas can follow (Hiltz and Turoff, 2002). Structured, regular communication is a basic principle behind teaching online. Friendliness, diligence, and empathy all play a role with students.

It is also critical in this environment for a teacher to be dependable in dealings with students. Commitments must be kept. Agreements must be fulfilled. Failure to keep commitments will destroy the levels of trust previously attained with students. Forgetfulness is, therefore, a serious weakness in online teaching. This means the instructor must pursue a real quest for excellence in the electronic classroom by building relationships with individual students and keeping track of commitments. It is hard work teaching online, especially in the beginning when this process is unfamiliar. Students expect quick response online. If they raise a question in a conventional classroom, they usually get the answer right then. Everyone in the class hears the question and the answer, plus any clarification that follows. It is not so easy in an online class using asynchronous media like bulletin boards and chat rooms. A dogged commitment is essential for success.

4.3 Consistency
It is difficult to change an online course in mid-stream. Once the students have studied the course syllabus, reviewed the requirements for the various deliverables in the course, and internalized everything the professor has prepared for them, it is not easy to change any of these. For example, in a traditional class, an instructor might decide to allow students to retake an exam or may want to add an additional reading to the course schedule, or revisit a difficult topic while dropping some lesser topic, or ask students to do an additional assignment, or change assignment due dates, or whatever. This is easily done. But, in the online course, students invest a lot of time and energy trying to understand what is going to be required of them in the course. They do not handle change very well. The instructor, too, invests a lot in trying to make sure that everyone understands everything. Often students enroll in online courses because they need the flexibility to help handle work or personal commitments. They analyze the course requirements at the beginning, perhaps doing assignments or reading early when their time permits. Changing the course in any way in these situations is not well received.

Trying to change anything once student expectations are in place is confusing. Too often, there are students who miss the changes altogether or misunderstand what is intended. When contemplating change, it is almost always better to stick to the original plans and work through any problems that arise within that context.

5. STUDENT-TEACHER RELATIONSHIPS

5.1 Impersonal Environment
Teaching at a distance adds a degree of complexity to the relationships between students and teachers (Coppola, Hiltz, and Rotter, 2002). The problem is that one has to press hard to overcome the impersonal nature of the machinery that makes up the online medium. Without facial expressions or body language or much human contact, these relationships can be difficult to develop at best. The online system tends to be rigid and inflexible with minimal feedback, unless the parties involved strive to overcome its limitations (Bocchi, Eastman, and Swift, 2004; Littleton, Phil, and Whitelock, 2004).

5.2 Mentoring Learners
Hopefully in the future, increased speed and enhanced capability of online teaching technologies to include quality video and teleconferencing will help to alleviate some of these limitations. In the meantime, the development of relationships as a mixture of mentoring and *cyber pen pal* can be very worthwhile and rewarding for both the individual students and the professor (Abbott, 2005; Arbaugh, 2000; Conaway, Easton, and Schmidt, 2005; Hirschheim, 2005). Obviously, if an instructor has a large online class, mentoring all of the learners is a daunting task. But focusing on the quality of the interaction and trying to relate to the students as individuals, instead of the quantity of contacts, can make this workable. For example, an instructor can schedule specific times each week to respond to students' questions and issues. This works perfectly well as long as students know in advance that that is the way the instructor primarily intends to interact with them.

5.3 Interrelationships Among Learners
Many online students tend to be older, and they frequently have experiences that are relevant to the content of an online course being taught. They bring to the virtual classroom a level of practical understanding that is interesting to the other students, a 'real world' perspective that tends to be refreshing and stimulating. Some learners are very high ranking leaders in their professions and they could never afford to take the time from their work to pursue a degree in the conventional manner. Having several of these individuals in an online class can really help the dynamics of the interactions among students, particularly the dialog in the online classroom. They should be encouraged to take a leadership role. Students sometimes feel that they are learning more from interacting with fellow students than from other aspects of an online course.

5.4 Student Visibility
Interestingly, there is no real awareness in these online interactions as to anyone's race or creed or even actual physical location, unless an individual happens to mention these things directly. Students might be in a wheelchair or in a prison somewhere or on an Indian reservation in Arizona. They could be living anywhere in the world. All of that is

irrelevant to the intellectual process that occurs in an online classroom. Students might be going through a divorce or nursing a terminally ill relative, or they themselves might be ill. Yet, often nothing in these interactions would indicate any of that. The focus is on academics, and these other factors mostly do not even show up in the mix. A teacher gets to know his or her students very well in this environment and yet, at the same time, not necessarily well at all. It is all rather amazing, actually.

5.5 One-on-One Coaching
Much of what happens in an online course can happen outside of a course management system in private emails or via other media (Bowman, 2003; Dearstyne, 2007; Phoha, 1999). For example, online collaboration tools such as wikis or blogs may be utilized to supplement communications, or instructors might choose to use various free voice-over-IP telephone services (such as Skype) in conjunction with an online course to further enhance communications with and among students (Chawner and Lewis, 2006; Mindel and Verma, 2006). Once they are comfortable communicating with their professors in these ways, students tend to interact more often and more informally than they would in person. This poses a problem for the instructor because much of what comes up during these private discussions is relevant and should be communicated to the entire class. So in fairness, a balance is needed here to make sure that all the students get the same information as much as possible. This is an area in which the professor must be especially diligent. The bottom line, however, is that teachers who work with the students and build relationships with them online find themselves coaching most of the students individually through the online course. Teaching online is therefore a lot more work than one might think.

6. TUTORIALS VS. LECTURES

6.1 Unit Assignments
Online instruction operates at a slower pace over longer periods of time. What is covered in three hours of university lecture and discussion in a conventional class setting takes a week to do in an online class. This is because each student completes assignments at his or her own pace and within his or her own schedule within the weekly format for typical units of work assigned. A unit generally includes a 'lecture' which is a focused essay of several thousand words that introduces a particular topic (or set of topics) and sets the stage for subsequent readings, discussions, and other assignments. 'Discussions' are usually asynchronous dialogs posted in an online forum (like a chat room) that is accessible to all students enrolled in the course. This discussion forum is based upon a series of questions that are included in each unit for the students to answer online. The discussion questions relate to the readings and other assignments included in each unit. They require students to analyze and integrate the readings, and to post and discuss their answers online with the professor and in dialogs with other students. For each unit, these activities are generally to be completed within the context of one week's work.

6.2 Individual Tutorials
There are two basic approaches that can be followed and a lot depends upon how many students are in a given online class (Cook, 2000). The first approach is the 'sink or swim' model. Students receive minimal teacher contact and support. Sometimes, this is all that an instructor can do, especially in a large online class. But this is certainly not optimal. The second approach is the 'individual tutorial model.' If students are really to learn in an electronic classroom, then this is the approach that makes the most sense. What the experienced online teacher comes to realize is that an online course is really an organized framework for what becomes mostly individual tutorials involving the teacher and each student in the class (Littleton, Phil, and Whitelock, 2004). Some students require less than others, but personal involvement is a hallmark of online education under this model.

7. ASSESSMENT OF STUDENT PERFORMANCE

7.1 Lack of Control
Every course should conclude with the fair and equitable evaluation of each student's performance. With online teaching, the options for assessment are unfortunately limited (Bowman, 2003; Dhamija, Heller, and Hoffman, 1999; Grandzol, 2004). One can evaluate the weekly postings for evidence of mastery of the assigned readings; or perhaps assign term papers or case studies to be analyzed; or give conventional examinations online. Students can be asked to watch videos and develop reports about what they have seen, or even participate in simulations of chemistry experiments or economic systems, or whatever, online. There are plenty of activities that can be graded. But among many online instructors, the issue of most concern in evaluation is the perceived lack of control due to the remoteness of their students.

7.2 Questions of Authorship
For example, online testing tools and banks of test questions are easily available and are often integrated with course management systems. But ultimately, the question becomes one of who is actually on the other end of the line during test taking. Or who actually wrote the term papers or the reports; or who really did the simulated experiments. Even if electronic fingerprints or retinal scans verify that the appropriate student is present to take an exam, how does the instructor know if someone else is not also there helping to answer the questions? Having students congregate physically in one central location to take exams for an online course would certainly alleviate these concerns, but this is only workable if the students are in the same geographic area. In many cases, congregating is simply not feasible.

7.3 Sense of Comfort
For the conventional instructor, then, this problem of online assessment can be a serious stumbling block. Eventually, perhaps, technology may solve this problem through facial recognition software or something similar. But that is not going to happen in a cost effective way any time soon. In the meantime, professors must gain a sense of comfort with this process. Nothing is foolproof, but over the course of a

semester interacting with students, reviewing their postings in the discussion forum, and jousting with them intellectually can give the teacher adequate assurance to approach the issue of student assessment with confidence. The keys here are developing a trusting relationship with the students as much as possible and focusing objectively upon the course deliverables in the assessment process, not the students.

8. CREDENTIALING VS. EDUCATING

8.1 Professional Preparation
A university education serves both as a standard of excellence in educational achievement and as a professional *credential*. Many of the best jobs are only open to those with appropriate university degrees. This credentialing function has important ramifications for online education. The online educational process must be built upon principles of trust and good faith between an online teacher and students. An assumed honor code underlies the whole process. This is because there is really no way to know who is actually on the other end of an online interaction, or for that matter who is really *taking* an online course.

8.2 Certifications
That means that this system can be corrupted. If we were only talking about education, then a student who did this would ultimately only cheat himself or herself. But professional credentialing is a different matter altogether. As long as credentialing is part of the equation, it may be difficult for online education to gain real traction with the professions that require a college education for admission. However, online education is going to become more and more mainstream. And there will be increasing pressure for its acceptance as a credential on a par with traditional education. The eventual solution is likely to be unbundling education and admission to the professions by requiring routine post graduation exams to individually certify each student's educational achievements and readiness to enter almost every career.

9. COURSE EVALUATION AND QUALITY

9.1 Moving Targets
Teaching online is an exercise in continual incremental improvements. It takes a commitment to quality (Hirschheim, 2005). A fundamental part of pursuing quality must be the development of cogent, realistic objectives for each online course, and frequent revisiting of those objectives by the professor throughout the term. Certainly, faculty want students to master course content and mentoring students is important in achieving that online. As educators learn more about how to conduct classes effectively online and as the technology improves with new features being introduced (like quality video), the boundaries are shifting. In a sense, quality is a moving target here. As online teaching evolves over time, the nature of online coursework will change too. Basically, quality must be couched in the ability to deliver the right course content through the technology in a manner that provides the students with what they need to master that content (Oliver, 2000).

9.2 Realistic Perspective
Faculty also need a realistic view of successes and failures in an online educational environment. A degree of failure is a real possibility especially for those who are new to online teaching. And, if a course does not turn out as intended, a professor certainly has other options, namely to return to the conventional classroom and forget about teaching online. Not every conventional course turns out the way the instructor would have wanted, and instructors do not usually leave teaching because of that. Conventional teaching is a calling and a craft that one grows and develops, and teaching online is the same. To be successful, it too must be nurtured and developed over time by dedicated instructors.

10. CONCLUSION

Teaching online is very complex. It is complicated by the need to adapt what has been a highly social process, that of educating students in a traditional school and classroom setting, to an online computerized setting with limited social interaction. The biggest challenge for online educators is to make this adaptation work effectively.

When a teacher first contemplates teaching online, it is very attractive to focus on the obvious flexibility that online teaching provides, such as not having to be in a classroom at scheduled times during each week or not even needing to come to campus to teach. The uninitiated often think that teaching online will be much easier than teaching in the conventional classroom setting. That is a very dangerous point of view to bring into the online classroom. Over the longer term as an instructor gains expertise with online education, the process of teaching online becomes easier, more comfortable and rewarding. But in the beginning, it is foreign, uncertain, and much more difficult than teaching in the familiar conventional classroom. With preparation and practice, teaching online can be a very effective medium for higher education. The key question becomes how best to achieve quality education in the online classroom, which is the subject of the next article in this series.

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