Teaching out of the box:

20 Research-based Principles to Guide the Transition to High Quality Online Graduate Programs

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Abstract

This paper was originally written as an internal report to the Educational Leadership and Policy Studies Department faculty & administration at North Carolina State University. It chronicles my experience as a first year online instructor and provides 20 principles for developing online programs which are based both on my personal experience and from a review of the literature. In this paper I share bits of my personal experience as I transition from a traditional assistant professor in a graduate program to an online instructor.This scenario is being played out in numerous colleges and universities at this point in time, due to economics and changing student expectations in a digital age. I provide a brief description of the my department's context and mission, followed by a selective review of the literature on online instruction, focused on those aspects of online course delivery deemed most pertinent to faculty and administrators in our department. I conclude with recommendations for building the capacity of traditionally prepared faculty members to deliver effective courses online and describe some administrative supports conducive to building a solid program that includes high quality online graduate courses.

Introduction

Online instruction has a wide appeal to universities faced with a demand for educational services in a period of economic challenge. In 2009, a series of failures in the US banking industry creating a domino effect ushering in losses in most sectors of the US economy. Publicly funded higher education was among the enterprises negatively impacted by this economic down swing. NCSU, like many other universities faced severe budget cuts, forcing internal restructuring. The broader impact of the US economy on higher education is that widespread reduced funding will likely spark further interest in converting traditional programs to online delivery.

This article was adapted from a whitepaper report issued to the faculty and administration of the Educational Leadership and Policy Studies Department within the College of Education at North Carolina State University to assist decision making regarding the future of online instruction in the department. The focus of this article is to address a broader audience concerned with similar issues related to developing online programs in settings

traditionally characterized by face-to-face instruction. It is hoped that this article will be insightful and informative, enabling reader s to make sound judgments about how to develop or enhance their own approaches, policies, procedures and processes with regard to online course offerings.

My Personal Experience and the Evolution of an Online Program

I, like many other university administrators and faculty members, found myself suddenly thrust into planning and developing new online programs for graduate students, something for which nothing in my background had adequately prepared me. Never-the-less I muddled through all the while frantically searching for sound information to guide my choices so that my students would be well served, despite my struggles with learning on the job. This article was written to provide those in a similar situation with some guiding principles based on our experience at NCSU and my review of the relevant literature. It is hoped that my experiences in the first years of developing and delivering such a program will be enlightening and help readers make more informed decisions regarding online instruction, and program development. The information set forth herein is qualitative and anecdotal, in part, but is infused with research from recognized experts in the field of instructional technology. To help the reader to put the information into context, I begin with basic background information about myself and how I found myself in the position of an online instructor.

From Traditional Classes to Blended Learning

My formal education, experience and expertise lies in the field of Pk-12 Educational Leadership. In 2006-07, I was hired as a new assistant professor at NCSU; my first position in higher education following completion of a PhD in 2005. Though I was hired to teach primarily Distance Education (DE) classes, all DE courses at the time were taught face-to-face off-campus, to cohorts from school districts surrounding the university, most within an hour's drive from campus. Over the course of the school year, I took several short face-to-face tutorials with DELTA, NCSU's instructional technology arm. In the summer of 2007, I enrolled in a week long summer workshop offered by DELTA. Since I had no previous training or experience in instructional technology other than casual use of the internet and email, I took basic level courses, most of them involving use of the course management system offered by the university.

Over the next academic year, I put this knowledge to work by using the university course management system to house my course documents and to provide relevant links to websites students might find helpful. I also began using the discussion board for asynchronous student interact ions about course topics. Participation was moderate when use of the "blackboard was optional" but was strong when participation was required. Students liked continuous access to documents and links and many of the resources I gave them access to on the blackboard were utilized in final projects. I met each week with my students during this time, giving them a weekly reflective question for them to address asynchronously – similar to homework; these were organized into discussion threads that continued all semester. In the spring of 2008, I still met face to face with them, but not each week. I began requiring more asynchronous participation and required students to submit papers electronically. Many of my graduate students loved the freedom of being able to not meet as often by doing additional asynchronous activities. However, one class of students was taken aback by the change in format that had not been previously announced in the university scheduling catalog. They objected to this new blended course design and insisted that they were not getting their money's worth unless the instructor was physically there with them each week. Therefore, the department acquiesced and reverted to a traditional delivery with this particular cohort. Lesson learned: adult learners do not like changes sprung on them; students must be fully aware of the course delivery mode when they sign up for it.

In the 2008-9 academic year, I began teaching exclusively online. With this new position, came a move off of campus and a return to my home state – 1000 miles away! During this year I kept an anecdotal log in which I noted events that occurred in my quest to become an effective online instructor. Over the course of the 2008-09 school year, I attended two interactive online conferences for online instructors in order to further my knowledge of online instructional delivery, as I was still very much a novice in techniques for this method of instructional design and delivery. I also began reviewing literature in the field, both for my own personal benefit and in preparation for a report to my department of my experiences and recommendations for the development of our online program. In so doing, I learned that my situation was not as unique as I first thought; it seems that due to the attractiveness of having online programs from an institutional standpoint, that the selection of instructors to teach in these programs is frequently more tied to individual faculty member's willingness to teach via this medium, than it is to

one's knowledge and experience with online instructional design, technological savvy, or online delivery techniques(Compora, 2003, as reported in Koontz, Li & Compora, 2006).

I used my anecdotal log of experiences as a new online instructor, my knowledge of the internal workings and vision of the department, professional literature, interactions with experts in the field of instructional technology, as well as feedback from students and colleagues to inform the recommendations I make in this paper.

The Instructional Context

The University Context

North Carolina State University (NCSU) is a mid-sized state funded university located just outside downtown Raleigh, North Carolina. It is part of the larger UNC System, a network of state funded universities in North Carolina. NCSU has a fairly extensive technology infrastructure and encourages instructors to incorporate instructional technology into their courses by offering a series of face to face workshops and seminars on the usage of various software and course management tools available to instructors through the university. These programs are offered through NCSU's main instructor support arm, DELTA, an acronym for Distance Education and Learning Technologies Applications. DELTA's website encourages instructors to learn more about instructional technology and pedagogy and provides information on resources available, tutorials, individualized support with university sponsored technologies, and help numbers for both instructors and students. As with other higher education settings, some colleges within the university have made greater use of Distance Education (DE) than others, with high tech fields like Engineering, leading the way at NCSU.

The College Context

The College of Education (CED) at NCSU has several departments which prepare pre-service teachers in several specialty areas; these are typically on campus four year undergraduate programs. Several programs lead to graduate degrees in various areas. The extent to which distance programs are offered, in whole, or partially online within the CED, varies greatly from department to department. The CED website says that "Distance Education at North Carolina State University's College of Education is delivered in a variety of ways. We have [distance]

programs that are completely on-line, as well as classes that are held face-to-face albeit off-campus." It goes on to list seven counties where NCSU CED sponsors DE programs of some sort.

The Departmental Context and its DE Journey

The department of Educational Leadership and Policy Studies (ELPS) houses two primary program emphases, Leadership and Policy Studies, as indicated by its name. These are both graduate programs. The department also teaches one course required by several undergraduate programs within the CED; these courses are frequently online and are the only courses within the department that are sometimes taught by graduate students supervised by a fulltime professor. This report will not focus on these courses, but will confine its discussions to online delivery of graduate courses in Educational Leadership.

Most courses in the ELPS department are graduate level courses taught face-to -face by fulltime Assistant, Associate or Full professors. The ELPS faculty is comprised of roughly nine tenure track personnel, two teaching professors and usually an adjunct or two. These classes are offered on-campus non-cohort, and in off-campus cohorts. However, in North Carolina there is a critical need for qualified and licensed school administrators, particularly in rural areas, remote from a local university. To fill this need the ELPS Department began a series of cohort programs in cooperation with several school systems; in the early stages of this cohort system, prior to 2006, professors simply traveled to a site agreed upon by the district and the department to deliver the course.

Gradually, instructional technology has been introduced into these classes to reduce the amount of instructor travel time and related expenses. Thus, in 2007 three different faculty members introduced *hybrid* course designs in which students did not meet with the instructor face-to-face each week, but continued their work either synchronously or asynchronously online, while continuing to meet with their instructor on a limited or intermittent schedule. These pilot hybrid programs were designed independently by the individual faculty members teaching them, with little guidance, or oversight regarding elements of the instructional design. Two courses were taught synchronously on the night that the course did not meet face-to-face; the third course provided asynchronous work online in the "off week". An informal survey of the students taking these courses revealed that students had not been expecting this variation from traditional face-to-face delivery and some were not entirely comfortable

with it. Others expressed comfort with the more technical course design. While it was not expressly asked, faculty felt that comfort levels were likely influenced by the student's overall comfort with technology. The students surveyed over the 2007-2008 school term, roughly 45 students a semester, with some overlap in students surveyed over the two semesters, preferred the synchronous DE approach over the asynchronous.

These informal findings were shared with the entire ELPS faculty. Several discussions over expanding the online DE offerings within our department revealed mixed feelings among faculty members. A few who were more adept with technology were enthusiastic, citing the benefits in terms of reduced travel time and the ability to serve a wider student base. On the other end of the spectrum, several faculty expressed reluctance to offer entirely online courses. The concerns voiced centered on a conviction that the quality of the programs would suffer. In a period characterized by expanding professional standards and accountability, it was questioned whether attributes such as "Leadership Dispositions" could adequately be conveyed or assessed in an online only course or program.

The following academic year, 2008-9 the department offered its first completely online graduate courses. Three masters level courses were offered and one doctoral. These were taught by a single instructor, namely the author of this report. I taught two different masters courses, (one was repeated a second semester), but the doctoral course was canceled due to low registration. The masters courses were all off-campus cohorts in which students were completing a principalship licensure program in Educational Leadership. The typical student in my courses was a fulltime school teacher taking 6 hours in graduate school. In the next section, I will relay some of the trials and triumphs I experienced in my first year teaching online and attempt relate these stories to evidence in the literature that might be used to guide those who seek to shift their focus from delivering high quality traditional face-to-face courses to delivering the same content in high quality online programs for adult learners.

Clear Communication 101: "Online Class" has Many Meanings

One of my first realizations as a new online teacher was that my students have different ideas about what constitutes an "online class". This became obvious when several students were annoyed to find that the course in which they were enrolled would entail a real-time interactive component on a regular basis, even though the letter of introduction clearly stated that this was to be a *synchronous* course. These students obviously expected to be

able to work through a self-paced series of activities similar to a correspondence course only using an electronic transmission system for communicating with the teacher and submitting work. Others were frustrated that there would be no opportunity to interact with their teacher face-to-face in this *online course!* Some students expressed concerns that an online class would not fit their learning style; they interpreted *online* to mean that instructional technology, particularly internet resources would be incorporated into a traditionally delivered class. These realizations helped me to understand the importance of clear, unambiguous communication in plain easy to understand language. Therefore, I shall begin by clearly defining some of the terminology in this report.

Glossary of Terms

Asynchronous – activities done independently at a person's convenience; not synchronized or in concert with others

Blended – the meshing of two or more modes of instruction; in this paper I use it to denote the combining of face-to-face classes with asynchronous assignments or synchronous online sessions

Cohort- a peer group progressing through a set program of study, taking the same classes each semester

Distance Education (DE) – Institutionally based education in which students do not physically attend class on campus.

Facilitate – to help, assist or guide one who is involved in an on-going complex process, activity, especially an activity such as a project or construction that is open-ended and involves others. This term is derived from core assumptions of cognitive constructivist theories of learning; it is frequently used in place of the words teach or instruct, as constructivists believe these terms imply a behaviorist approach to course design centering around the teacher conveying knowledge rather than the learner constructing mental schemas based on information and experience.

Hybrid Course – a course that is taught part face-to-face and in part using instructional technology for distance educational purposes. There are a number of instructional designs for hybrid courses.

Instant Messaging (IM) – real-time chat using text only

Instructional Design (ID)- the process of designing a course so that the methods and materials used to instruct are consistent with creating an optimum learning environment for the given content, level of the learners, delivery medium, technology employed and requirements.

Instructional Technology (IT) – the use of computers or other technological devices to facilitate learning in courses. The tools, support services and competencies required depend on the specific types of technology employed.

Online - conveyed over the internet.

Online Course – course taught exclusively over the internet with no face-to-face meetings between learners and the teacher. However, online courses can be designed in a variety of ways; some synchronous online courses bring the students together in a physical location, such as a computer lab, while the teacher is in a remote location.

Other designs involve everyone being in a remote physical location from others, these designs can be synchronous or asynchronously delivered.

Synchronous – activities done with others in real time albeit different venues or locations

Literature Based Principles about Online Instruction

Assumptions Underpinning the Literature Review and Recommendations

Online learning, as discussed in this article, is internet-based instruction and or learning activities that includes both synchronous and a asynchronous components. High quality online learning environments are more complex than simply lecturing over the internet rather than in the same room with student. From this perspective, online learning is …

"planned learning that normally occurs in a different place from teaching and as a result requires special techniques of course design, special instructional techniques, special methods of communication by electronic and other technology, as well as special organizational and administrative arrangements."

- Moore and Kearsley (1996)

The review of the literature that follows is organized into a set of 20 principles that I believe to be pertinent to those initiating online DE programs in settings previously characterized by traditional face-to-face instructional delivery. The literature review is, therefore, selective and was not intended to be comprehensive in nature. For those looking for a more comprehensive review of the literature I recommend Simonson, Smaldino, Albright and Zvacek (2009 pp. 64-88).

A number of assumptions guided the selection of what to include in this review; among these were issues of supreme importance to the faculty and/or administration I have dealt with. Their concerns were expressed over time in a series of meetings, emails and personal exchanges and include concern for:

- Maintaining a standard of consistently high quality programs and courses
- Running effective DE programs in the most efficient (cost effective) manner possible

- Staffing our DE programs in a manner that best utilizes internal resources and talents
- Meeting the changing needs of the state of North Carolina by providing access to high quality degree and licensure programs in our fields
- Reducing instructor and administrator workload and stress associated with developing online courses and programs

The research-based principles identified in this article are relevant to these concerns of faculty and administration. Following each principle, I summarize related information from multiple sources. I hope to provide a broad overview of relevant research and to direct the reader to resources where various topics can be explored in greater depth. Infused throughout the principles and summaries are bits of anecdotal information pertaining to the issues I faced in my initial years as an online instructor.

Learning Outcomes

Principle 1: Well done online instruction is just as effective as face-to-face instruction.

Comparative studies of traditional learner outcomes showed no difference in online versus face-to-face courses. In a review of 68 published papers, Tallent –Runnels and colleagues (2006) reported that "well designed" online classes produced more positive results and were related to a greater sense of overall satisfaction (as reported in Simonson et. al., 2009 p. 67). Similarly, Ronsisvalle and Watkins (2005, see Simonson et. al. p. 67) found most online students in their study of K-12 online classes earned a B or better and that student, parent, teacher and administrative satisfaction with online classes was high.

The Partnership for 21st Century Skills published a list of performance-based skills that online learning is particularly well suited for developing, among these are skills relevant to our student base (i.e. educational leaders, administrators, policy makers, and policy analysts) such as: collaboration, global awareness, interpersonal learning, and use of information, communication and technology (ICT) for instructional purposes . (See www.learning inrealtime.com or Finkelstein, 2006). Downes (1998) concluded that online learning was more efficient than classroom instruction and was actually *better* than traditional classroom instruction because it is more personalized and easier to adapt the basic content to the specific needs, abilities, and interests of the individual

learner. These and other studies have confirmed repeatedly that there are no substantial differences in learner outcomes for students who are instructed online as opposed to face-to-face.

Learner Attributes

Principle 2: Learners have variable levels of anxiety upon entering an online class; the extent to which anxieties are addressed can impact student satisfaction and attrition rate.

Jegede and Kirkwood (1994) identified several sources of student anxiety upon entering a DE course; these include: readiness, content, environment, time, finances, employment and family support. At the start of a DE course, students tend to be more anxious about readiness, content and finances. Toward the end of a course students reported feeling more anxiety over time and employment. This was consistent with the concerns of my graduate students over the three courses I piloted. Similarly, Biner, Dean and Mellinger (1994) found student satisfaction ratings to be related to: the instructor, the technology, course management, at site personnel, promptness of material delivery, support services, and out-of-class communication with the instructor. Strong two way communication with students can help identify and alleviate student apprehensions about taking an online course (per my perception and that of those online instructors participating in IM with me during the Learning Times Conference, October 2008, see citation).

Principle 3: Online courses favor students who are self-efficacious and abstract thinkers; however, instructional differentiation may be useful in helping all students succeed in online courses.

Coggins (1988, as cited in Simonson et. al.) found that undergraduate students who complete online courses do not differ significantly in gender, occupation, marital status, parental status, age upon entry into the program, or distance from campus than their counter parts who did not complete classes. Significant differences did exist in the education levels upon entry into the program and in expectations for high achievement (e.g. grades earned and degree attainment) upon the start of a course, with completers being the more highly educated group and those that expected the most from themselves. This suggests that self-efficacy (i.e. confidence in their own abilities) for academic accomplishment plays a role in students completing online courses and that students either

have the confidence to complete a DE course or they do not, independent of specific aspects of the course or instructor; however, Stone (1992) found that weekly phone contact with the teacher had a significant positive effect on the students' work completion rate for students with an external locus of control. Thus, it can be inferred that online learners vary in their need for regular contact with the teacher, but that those who have an external locus of control derive benefit from regular personal contact with the instructor, albeit not necessarily face-to-face contact.

In 1991, Dille and Mezack studied locus of control and learning style as a predictor of success in undergraduate DE courses, where success was defined as attaining a C or better in a course. They found that students with an internal locus of control were more likely to be successful and students with an external locus of control were much less likely to persevere when they perceived things were difficult in a DE course. The second major difference they found was related to learning style. Those who prefer concrete experiences were much less successful with DE courses than those who achieved high scores on an inventory of abstract conceptualization. Other aspects of individual learning style were not found to be significant predictors of success in DE courses.

Though these studies did not necessarily say that differentiating between learners and offering more individualized assistance to those who wanted it would make a difference in success rates, I interpreted these studies as suggesting that possibility. Therefore, acting upon findings in Dill and Mezack (1991) and Stone (1992), I offered my students the weekly option of interacting one-on-one with me over the internet using a webcam. Since the research did not indicate that all online learners needed this, I allowed students to decide individually whether they wanted to attend a supplemental session held on Saturdays or not; attendance at supplemental Saturday sessions was not a factor in grading. I found the same students sought help regularly via this format, while others seemed to not need or desire the sessions.

In structuring the course this way, I hoped that personalizing the learning experience might impact student success or decrease student anxiety associated with taking an online course for those with an external locus of control, who were less self-efficacious learners or those who are more concrete learners. Most students seemed to respond well to this approach, though many were unaccustomed to this differentiated approach. I found the

supplemental Saturday sessions to be very instrumental in reducing the stress students for students not as comfortable with online learning; therefore, I will probably continue the practice despite the additional instructor time required. These sessions were not as tedious to prepare for, as they were frequently directed by students who identified what they wanted additional assistance with. Rarely did students want concepts from class or readings clarified. Typically, students were seeking assistance in the concrete tasks necessary to complete their required projects, which asked them to apply the abstract concepts from readings in a concrete way for practical use in the real world of the k-12 schools where they are or hope to be employed. This illustrates the role of the instructor in differentiating based on a particular student disposition, namely the student's ability to think abstractly and act concretely (Based on Dale's 1946 concept of the "Cone of Experience" and how media can be used to enhance learning; refer to Simonson et. al. pp.92-93 for more on this.) Individualization based on student perceived need for feedback during project development was received very well by students, but was also very time consuming.

Principle 4: Recognizing and addressing barriers to student success in online classes can help minimize negative effects on learners.

Garland (1993) found that DE students encounter four categories of barriers: situational, institutional, dispositional, and epistemological. The situational barriers had to do with the challenges faced by the student due to the particulars of their personal situation. These included lack of family support, financial pressure, poor physical environment for online learning (school lab or a computer centrally located in a busy place), lack of access to needed resources and the stress of juggling multiple roles (work, home school). In my online courses, I found, like Garland, that most students assume that an online course means it will take less time, when frequently it takes more time than a traditional class. Failure to anticipate the time commitment required (especially for those less familiar with technology or with more concrete learning styles) causes problems and stress for students juggling the demands of multiple roles, which is most graduate students. It is my opinion that this type of stress can be addressed at the departmental level, with orientation materials aimed at minimize the stress and uncertainty some online learners feel.

Institutional supports impact students' perception of of access key technical or instructional staff for support at crucial times. Finkelstein (2007) noted a phenomenon where online students tend to expect assistance "just in time" meaning basically whenever they need it! In a McDonaldized society (Ritzer, 2006) students expect little, if any, wait to get the answers they seek or a person who can assist them. This need for instantaneous response places a great deal of pressure on institutions, programs and instructors to house Q&A information and to man help "desks" in non-conventional times. Institutions and programs need to set established parameters for when a real person will be available to assist students and a protocol for students to seek other assistance with technical or instructional issues when a person is not available. In the absence of explicit instructions for what to do when they need help, students will likely become frustrated. Other institutional barriers include cost, as some students may find it necessary or helpful to upgrade their hardware and/or software when taking online classes. However, from an institutional perspective, most of the costs associated with developing an online program are frontend. The longer the program remains stable (same instructors, courses, instructional design, resources, delivery modes) the more the costs of delivering the program are reduced, so that overtime, online instruction becomes very attractive.

Principle 5: The ability to self-select online instruction is important to students' motivation to persist and do well in an online class.

Motivation to learn online is an important learner predisposition. Students who see a DE [online] course as expedient or necessary to achieve their goals are more likely to persist in the course and succeed, whereas in traditional classes, student conscientiousness is most closely associated with higher grades, independent of the course delivery format. Fjortoft (1995) concluded that awareness of one's own ability to learn independently was linked to one's choice to take an online class. Thus, it seems crucial to the success of an online program that adult learners be allowed to choose whether or not they want to enroll in online DE classes.

This point was illustrated by an incident that occurred when one of my classes resisted changing the traditional structure of the course to a hybrid structure, stating on the first class meeting that they had not been aware of this change prior to the start of class. One student commented that if he wanted to take a hybrid course

he would have enrolled in one. These adult learners were angry over their inability to self-select the type of course they wanted to take. Interesting to note, these students were in an off-campus cohort in close proximity to the university and to a large metropolitan area where other competing programs were offered. In the same semester I proposed the same course design to a cohort located in an area with more limited access to similar graduate programs and these students did not voice a complaint. While this is only anecdotal evidence, therefore insufficient for drawing conclusions, it does suggest the possibility that perceived options may also be a factor related to student motivation to participate in online courses.

Interaction in Online Classes

Principle 6: Online students often engage in much more interaction about content or processes than their peers in traditional classes.

Sounder (1993) conducted an experiment in which a course was taught the same semester to three different groups, one face-to-face with the instructor, the second group was also in the room with the instructor, but their class was also synchronously broadcast to a third off-site group. The instructor, content, and requirements were the same for all groups. He found that students in the off-site group reported bonding stronger with each other AND with the instructor. These students were more supportive of each other and they outperformed the other groups. Sounder stated that *"...the distance learners in this study were observed to gain much more than a traditional education from their experiences. They gained a broadened network of valuable colleagues, skills in working with others and collaborating across distances, and many social skills beyond those offered by traditional settings. " (p.50, as cited in Simonson et. al. (2009) p.76).* Several types of communication exist in online courses. The range of possible need-based communication among participants includes those depicted in Figure 1.

A well-designed online course provides a number of mechanisms for authentic communication (i.e. genuine need based) among course participants. Planned interactions within a synchronous webcast are but one of a whole host of possible interactive learning strategies available to online learners and instructors (Finkelstein, 2006). Online courses that have both synchronous and asynchronous components offer an opportunity to involve learners in multiple interactions, but allow variation and flexibility in the amount, timing and type of interaction a

single student is participates in. Learner satisfaction is more tied to perceptions of general interactivity in the course, than it is to the actual volume of communication. In particular, instructor non-verbal communication in broadcasted sessions was associated with increased involvement of students at remote sites. Students respond well when they perceive the instructor is approachable. Factors influencing the perception of approachability include verbal intimacy behaviors such as eye contact (with the camera), an encouraging tone, a sense of humor, personal stories and other techniques that "humanize" the learning experience. The instructor's ability to connect with students, and make them feel comfortable, is important in establishing authentic communication built around student need and desire for interaction. Therefore, accessibility and flexibility should dictate student participation policies in online courses, rather than prescribing exactly what and how adult learners must interact.

Myriad of Authentic Communication

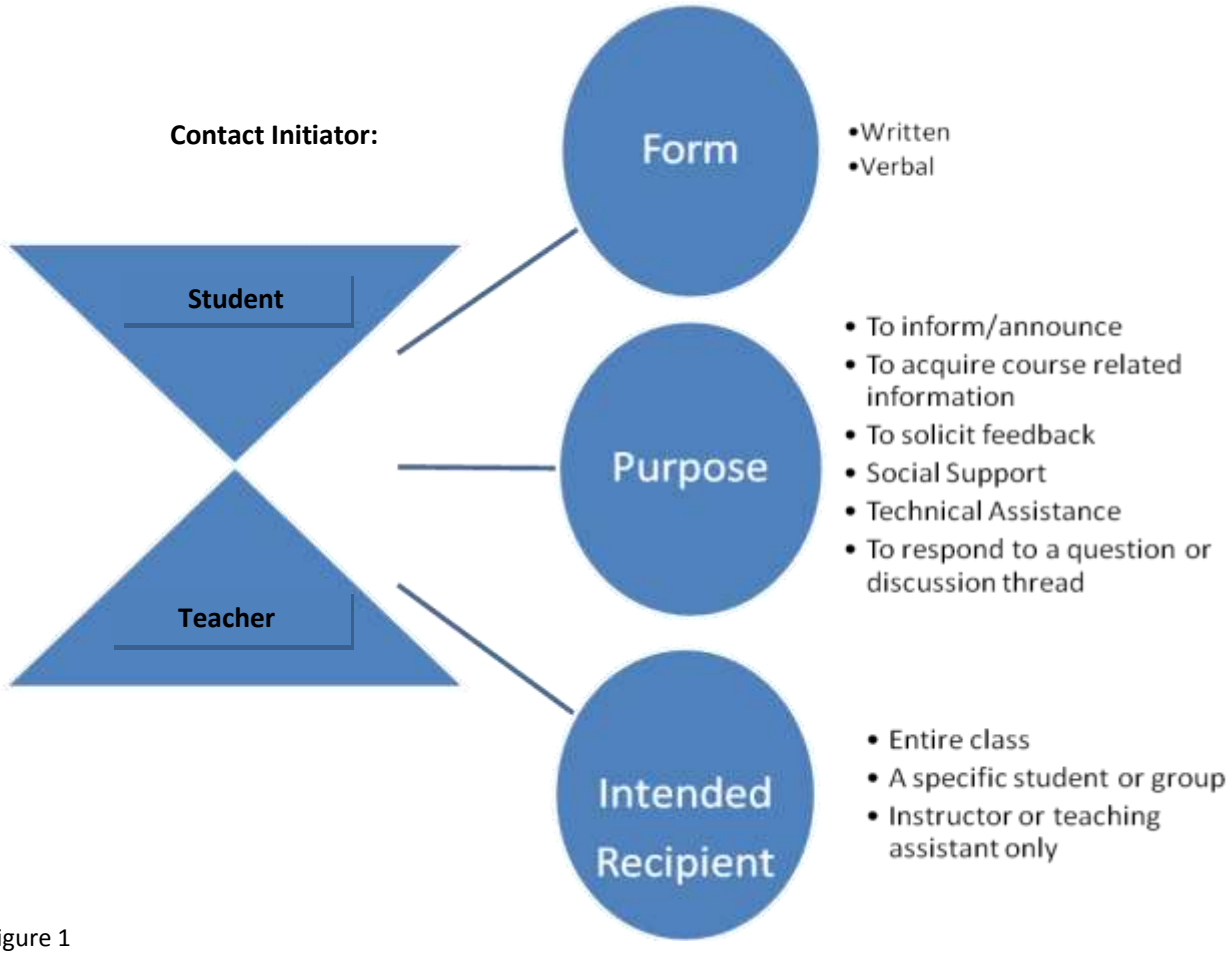

Figure 1

Myriad of Authentic Communication (Schoen, 2009)

Principle 7: Interaction in online courses should serve a purpose, be meaningfully integrated into core student activities, and give adult learners control over the manner and frequency of contact.

Interaction in DE and online classes has been written about extensively. I will not try to summarize all of these, but intend to focus on a select few that I find insightful. Wanstreet's (2006) review of the literature on interaction in online courses revealed three basic types of communication 1) instructional exchange, 2) computer-mediated communication, and social/psychological communications. Much of the literature on interactivity in online learning gives the impression that interaction equates to learning and the more the better; not so, said both Beare (1989) and May (1993). It seems the purpose and type of communication is more important than the volume of interaction. Some adult learners see requirements to collaborate with others as an unnecessary demand upon their already scarce time and do not desire to participate in interactions that are not legitimately self-initiated out of a real need experienced by themselves or a classmate. For these adult learners, it is important that they have control over when and how much interaction they engage in, otherwise imposed requirements for interactivity are viewed with hostility, as a waste of their valuable time.

Meaningful interaction is enhanced by personal familiarity and comfort with the technology employed. People rarely opt to engage when they feel intimidated or uncomfortable. It is also important for students to have a clearly defined purpose that makes them want to interact and see it as in their interest in order to accomplish a goal. I deal with this by designing my courses so that participation, defined as student use of the asynchronous course management site (i.e. Web Vista Blackboard) and/or student need-based collaboration on a project account for a significant portion of students' final course grade.

I have had great success with a project based course design. Students work on a self-defined real-world problem, creating authentic student motivation to interact because they want to do well in the course and also they are working on a self-selected topic they find intriguing. Students are informed that their asynchronous communications (on blackboard) are monitored for both volume and for course related content. The goal of my

student participation policy is to stimulate and recognize meaningful substantive interaction related to content or course related tasks. Students who are interacting, as a part of the course, outside of the monitored system are asked to email a brief summary of their interactions to insure they receive appropriate credit. This system is preferable to quantifying a set amount or type of interaction because it places the student in control of the purpose, type, and frequency of contact with peers and with the teacher.

Evaluating Interactions in Online Courses

Principle 8: Adult learners need and want their time respected; therefore, total time commitment to complete the course should be made explicit to students at the start of the course.

The self-directed project-based course design discussed above works well for encouraging meaningful student generated student-to-student and student-to-instructor communication in my courses. However, from a course evaluation perspective, I found that it is difficult for an outside observer to gauge the extent of interactivity that is occurring from observing a single class session; this opaque aspect of interactivity should be taken into account when designing peer evaluations of online classes. Online course evaluations based on observation should include a mechanism for viewing asynchronous interaction in the course. A holistic approach (i.e. observing both synchronous and asynchronous aspects of a course) should be considered when making statements in formal evaluations, as it is a more valid and reliable indication of the quality of the virtual learning environment. Observing synchronous or asynchronous portions of an online course in isolation could be likened to observing only one side of a phone communication, you may get a feel for the nature of the interaction, but the full extent of the dialogue is lost due to the limited access to the other side of the conversation.

To illustrate the dynamics at play in a dual-format online course (i.e. having both synchronous and asynchronous components) I will share an example from my limited experience as a novice online teacher. This year I piloted the project-based ID described above in my online courses. It worked well for encouraging student self-generated interactions and accomplishing active participation on collaborative projects, outside of formal class sessions. In this model, most of the content coverage (mostly abstract concepts, theory base etc.) is done via independent reading, in-class synchronous Power Point Slides infused with whole group verbal and chat

discussions. Most of the student-to-student interaction takes place is out of class, asynchronously. Assignment requirements, guidelines, parameters, samples, and grading rubrics are posted on the asynchronous website for students to read independently with minimal time in broadcasted sessions devoted to discussing these documents. Questions are handled via email or during voluntary Saturday sessions. Not only do students have control over the topic of their project, but they also control who they work with. Students may choose to work independently on projects or to work in co-operative groups, but either way the there is a standard for interacting and obtaining peer advice or feedback. This design generated much asynchronous interaction which was not readily evident to a casual observer. In order to capture the scope of student interactivity and involvement in online classes it may be necessary to evaluate courses in a manner other than, or in addition to, peer observation of a single webcast class; fair evaluations of interactivity in online courses should, at a minimum, include observations of the course discussion board, announcements, and system mail usage statistics. In my experience, online students use these much more extensively to interact and comprehend material than do their face-to-face counterparts.

Principle 9: Authentic interaction can take place in either or both synchronous or asynchronous portions of the course.

Notwithstanding the merits of considering online courses holistically for evaluation purposes, most of the literature on "best practices" for online courses calls for students to play an active role in online sessions, and to avoid extended periods of passive or exclusively receptive communication for learners. Trends in online course designs tend to favor activity based learning. Finkelstein, in his book *Learning in Real Time* states that he has observed a move away from self-paced asynchronous modules toward more interactive live online learning formats supplemented with complimentary asynchronous activities that extend the learning and where more mundane aspects such as reading for background or researching the topic are handled independent of broadcasted learning sessions. Finkelstein (2006) recommends that real-time class sessions over the internet should be reserved for guided interactive experiences. He stated that *"…Without real-time opportunities to interact with the presenter, instructor, or peers, one must always consider whether a recording or asynchronous delivery would be as or more effective than a live webcast. This kind of consideration respects learners and*

individual time commitments their lives dictate. There are times for self-directed exploration and [for] guided live experiences, but we serve our students better when we don't confuse the two." (p. 62).

Such course designs favor the instructor serving as a facilitator and resource for guiding and enhancing active adult learning rather than filling the traditional role of teacher as disseminator of knowledge. However, a problem inherent with highly interactive online classes is that they are invariably very time consuming, meaning instructors cannot cover as much in class. This necessitates a rethinking of the purpose of class sessions for the online instructor – is the goal coverage of a broad range of related topics or in-depth exploration of a few concepts?

Conventional constructivist thought on classroom instruction is that students need frequent opportunities to react, express their thoughts, discuss prior experiences and hear multiple viewpoints in order to fully integrate content into existing cognitive schemes. Whether or not this must occur in synchronous class sessions or whether out of class asynchronous interactions are effective, is a matter of speculation, since there seems to be little research into this aspect of online course design. Exactly how to build interactivity among adult learners in online classes is a matter best considered by the instructor when the course is designed. Instructors should take into consideration the needs of adult learners for autonomy and the multiple demands upon their time, as well as the course content and requirements.

However, despite conventional wisdom that interaction in online classes increases student learning, several studies demonstrated that in-class interactions had little effect on student learning (Anderson & Kuskis, 2007; Beare, 1989; Sounder, 1983, as reported in Simonson, 2009) and that those students whose classes were not interactive did not miss it (May, 1993). Some have also criticized efforts of online instructors to build interactive sessions. They suggest that students be required to comment frequently in live sessions that the subsequent interaction is superficial and that the interaction is not a genuine exchange of ideas or quest for information but is "contrived interaction", which may or may not contribute substantially to each learner's individual understanding. Proponents defend the technique of requiring individual simultaneous responses from all students because they find it helpful in building shared understandings. They feel it also builds a sense of community, which is harder to accomplish in settings where both instructors and individual learners are physically separated. Critics say that

requiring real-time responses from all does not allow time for adequate reflection, and is not the best strategy for developing thought processes in adult learners; they suggest asynchronous formats are more suited for required responses requiring higher order thinking and that real-time interactions should be reserved for spontaneous exchanges about substance or content.

In activity or project based courses, instructors should consider the amount of student time that is required of students to complete required activities. Since several of my courses require that students put in a large amount of time “out of class”, I found it expedient to limit the time required in real-time sessions. In some cases, time was reserved in synchronous class sessions for students to work on projects. I found that students appreciated reducing the amount of “in-class” time just prior to major assignment due dates, in order for them to use much of this dedicated time for self-directed tasks related to project preparation. One way of accomplishing this “additional time” was to limit the amount of in-class two way discussions of basic concepts, which unfortunately ended up reducing some classes to more of a lecture format with more teacher talk that was desired. While this approach allowed me to cover the content quicker and to use some of the dedicated “in-class” time to build in more common time for collaborations and project work (welcomed by students), it also resulted in decreasing the in-class interest and engagement. One of 15 students commented negatively on this; other comments were positive and appreciative of the class time provided.

I will continue to modify the design to seek a better balance between respecting student time investment and holding interesting interactive class sessions. Informal student feedback about the real-world projects has been very positive in terms of these activities being meaningful learning experiences. In order to preserve some dedicated mutual time online for project work and still keep class sessions upbeat and interactive, I will not attempt to cover all of the information verbally with students. Rather, I post reading assignments and all instructional Power Points for the semester on the asynchronous website with a schedule for readings. Live webcasts to the whole class are limited to discussion of the most difficult or important topics. While, I highly interactive live sessions are inherently more interesting, it is my experience that they result in covering fewer concepts verbally, thereby, placing a greater burden on students to read and view Power Points outside of class. In

an anonymous survey of all students in the NCSU College of Education(Schoen, 2010), students valued content coverage over interactivity. Courses that require large amounts of independent reading not covered verbally by the instructor inherently favor more mature self-directed learners. Thus, instructors should consider the attributes of their students when designing the methods of content delivery. Less autonomous learners or those less comfortable with independent study will be uncomfortable in course designs that rely heavily on lots of independent reading not followed up by instructor explanation.

Supporting Student Psycho-social Expectations in the Virtual Classroom

Principle 10: Online synchronous webcasts should be visually and auditorily interesting to compete with the multiple demands on the attention of students participating remotely.

Schoenfelder (1995) studied teachers' and students' perceptions of strategies to enhance student involvement with interactive television courses. Both groups felt that including a variety of visual materials and varying learning activities increased student involvement. Since the internet is quintessentially a visual and auditory format, not a print one, the inclusion of stimulating video and audio materials is important because the temptation of offsite students to engage half heartedly and to simultaneously "surf the net", or engage in non-course related activity is always present. The tendency to disengage is especially prevalent when class sessions are not interesting or methods become monotonous for students.

This need to compete for the attention of our students necessitates a greater burden on online instructors to entertain as well as to educate, because our audiences are not captive like their counterparts in conventional classrooms. Some instructors handle the uncertainty through frequent questioning and monitoring to see that all students are responding in a manner that demonstrates that they are currently cognitively engaged with the content, but afore mentioned, others have questioned the use of this technique with adult learners as somewhat demeaning, stating that pop-quizzes are more appropriate for less mature (e.g. grades 2-12 students). Likewise, forced responses in real-time discussions are not discussions at all, but are contrived devices to verify student presence; in authentic discussions students respond at will when they feel they have a legitimate thought or question. Lack of adequate time for genuine reflection can lead to superficial engagement and negatively impact

morale for adult learners. Thus, we see there is no universal consensus on the desirability and the nature of student interactions in real-time class sessions.

Holding learner interest is the preferred strategy for involving online learners in class sessions. From an instructional standpoint, designing interesting and interactive synchronous course sessions requires two basic types of specialized knowledge on the part of online instructors; the first is developing a repertoire of activities to maximize interactive online learning. The second type of knowledge instructors must possess is the technical skill to execute the interactive activities on the specific hardware and software at hand. As part of my independent preparation for teaching online for the first time, I identified several resources that were practitioner oriented and provided examples of games and interesting activities for online classes. My favorite of these was a book by Finkelstein (2006) which gives detailed descriptions of various online interactive learning games and techniques. The availability of practitioner resources written for online instructors meant that that knowing *what* to do with students in online sessions to promote interaction was not a problem.

However, knowing *how* to accomplish implementing the activities I wanted to employ in my sessions with the resources available was a tremendous obstacle for me and resulted in efforts to learn through trial and error. This process ate up large amounts of my time in and outside of class; therefore, the second semester I refrained from attempting to implement real-time interactive games in broadcasts to the whole class, out of respect for everyone's time. I suspect that this issue may be more relevant when instructors teach online from a remote location distant from the university's IT support staff; however, it is worth mentioning because one of the appeals of online course delivery is that, theoretically, anyone can do it from anywhere. When instruction occurs in a location distant from IT support staff, it is essential that instructors have relevant IT skills or have an opportunity to acquire the necessary training and support to successfully execute the desired technical and logistical aspects of online the course.

As I reflect upon my first year teaching online, I realize that I underestimated the amount of technical knowledge required to run a "one man show". Wearing both hats at once (i.e. functioning as both technician and instructor simultaneously) proved to be my greatest challenge, especially when the delivery mode was new to me.

The third semester teaching online in the same system, I began to focus less on logistics of delivery and more on student learning during real-time sessions. Despite 25 years of teaching experience, it was not until my fourth semester teaching online that I was not distracted by constantly figuring out how to best get a concept across or how to elicit meaningful interaction on content. As I reflect, I believe that this parallels the experience of novice teachers I have worked with in pk-12 school settings; typically as they accrued more experience, they were increasingly able to focus less on their methods and more on meeting learner needs. Thus, in many ways this new delivery mode reduced me, in all my years of experience, to the ranks of a novice teacher who needed to actively focus on technical aspects of teaching. A reduced course load is recommended for teachers just learning to transition to online instruction, otherwise it is possible that the additional time and energy required to master the delivery mechanics could divert attention from attending to the needs of learners

Administrators of online programs need to insure that instructors possess the requisite technical skill or make arrangements to provide continuing education in this area. Instructors who are content area specialists converting courses for online delivery would do well to identify a limited number of interactive of activities, say three, to be used in online instruction. This is enough to provide variety interest, variety and interactive learning without overwhelming instructors or students new to virtual learning environments.

Once desired interactive games or strategies have been identified, the instructor should work on-on-one with an IT consultant to master the exact techniques needed to successfully implement them with a minimum of wasted live time in webcast sessions. The major drawback from using this strategy is that it requires a moderate to substantial amount of instructor time in the initial stages, varying with the technical knowledge of the instructor. In the case of offsite instructors, it would be helpful if funds were available for them to travel to work with IT and ID specialists prior to the launching of new online classes. This would allow extensive individualized tutorials in the techniques and software or services most conducive for accomplishing the types of interaction identified by the instructor.

Principle 9: Detailed, timely and frequent feedback for students is extremely important in online classes because the unnerving effects of uncertainty are magnified when the instructor is in a remote location.

Chickering and Gamson (1987) reported on best practices in higher education and highlighted the importance of prompt feedback. Online instruction is still a relatively new enterprise and it can assume a number of different forms, therefore students inherently have less familiarity with the expectations and protocols for online classes. This absence of a mental "script" creates a greater need for and dependence upon feedback from the teacher to reassure learners that they are indeed performing the correct tasks in the correct ways (Chickering and Ehrmann, 1996). Surveys of teachers and students in a televised DE classes (Schoenfelder, 1995) revealed that personalized responses from the teacher and timely feedback to students were also thought to be factors that contributed to higher levels of student involvement. Similarly, McIsaac, Blocher, Mahes, and Vrasidas, (1999) stated that without immediate feedback DE students reported feeling isolated and unsatisfied. Haefner (2000, as reported in Finkelstein, 2006 pp.23-24) advocated for frequent live feedback or question and answer sessions over simply relying on asynchronous correspondence for addressing students' concerns because " if it takes days or even hours for students to get a response to a question, many students will lose the intellectual thread – and the urge to follow it." (as quoted in Finkelstein, 2006 p. 24). Due to the isolated nature of participating in an online course, learners may need greater validation and reassurance than learners in traditional courses. I attempted to meet this demand by adding an optional online time for student generated questions, providing multiple contact numbers, trying to respond to mail from students daily, making students aware of regular "down-times" (blocks of time when I am usually unavailable or harder to reach), and setting up strong peer feedback support systems for the duration of the course. These measures seemed to alleviate most student anxiety related their ability to get feedback when they needed it.

Coghlan (2004a) refers to online synchronous events as being "designed for dialogue", and encourages instructors and students to use the format to encourage meaningful discussion. He suggests that real-time venues be used more as active learning labs than as lecture halls. Finkelstein refers to the need for instructors to have an active dialogue with students and a strong rapport with students that they might be able to provide "just-in-time assistance" (p.27). He stresses that today's online learners need support when they request it in order to stay engaged with assignments and not give up out of frustration. This expectation on the part of students necessitates

a strong departmental, and university infrastructure to be able to respond to student requests for assistance in a prompt manner.

Real-time Technical Support

Principle 10: Technical Support Availability in real-time is crucial for successful online experiences.

In my experience teaching online, I found NCSU's DELTA IT staff to be extremely knowledgeable, willing to help, and they had an excellent system for tracking follow-up on calls. This being said, at times, both the students and I, as the instructor, had instances when technical assistance was needed and unavailable because classes in our department are usually taught beyond the normal operating hours kept by the university technical staff. This meant that neither student calls to the university tech HELP line, nor my own, were dealt with until the next day – no help for the immediate issue in our real-time class! This situation can cause a great deal of anxiety and have a negative impact on class morale, if not lead students to drop the course. The issue of the availability of real-time technical support should be addressed at a departmental, or programmatic level prior to offering synchronous online courses in time slots beyond the traditional work hours of technical staff. The following quote from Finkelstein sums up this point:

> *Anytime-anywhere online learning programs are really all-the time enterprises today, and institutions are beginning to address the need for access to live academic, technical, advising or peer support at virtually any time as well.*

Attributes of High Quality and Not-So High Quality Online Programs

Principle 11: The Accreditation community watches for indicators to help differentiate between well run online programs and inferior programs.

The following sets of attributes were derived from a 2006 report entitled *Evidence of Quality in Distance Education Programs Drawn from Interviews with the Accreditation Community* published by the US Department of Education, Office of Postsecondary Education. Representatives from 12 accreditation bodies who had evaluated higher education DE programs were interviewed and asked to identify the most outstanding positive and negative indicators. The report contains six sections: Mission, Curriculum, Faculty, Students, Sustainability, and Evaluation,

with multiple indicators per section. Below are 10 positive and 10 negative indicators (some are condensed and paraphrased) that I found enlightening. These are listed in no particular order; the numbering was inserted as a matter of convenience to facilitate discussion, NOT to rank order the indicators by importance.

Strong DE Programs tend to exhibit the following attributes:

1. Mission statement explicitly states purpose of the program
2. Regular faculty oversee the DE program
3. Regular faculty are involved in the course design and improvement process
4. Human and fiscal resources are provided by the institution to support solid instructional design prior to the launching of new DE courses
5. Faculty professional development in DE processes is a priority and an on-going process
6. Technical support is available 24/7
7. Management is systematic and clear plans exist for future growth of the DE program
8. Adequate instructional and /or support staff are dedicated to DE
9. Evaluation is used to continuously improve the DE program
10. Suggestions for program improvements are solicited and reviewed regularly

The following 10 conditions are viewed as red flags, associated with sub-standard DE operations:

1. Separate mission statements and approaches for DE and on-campus programs
2. Target populations of DE classes differ substantially from those of on-campus offerings
3. Separate course approval processes exist for DE classes
4. DE courses all have a cookie-cutter or formulaic design, despite level or content
5. Faculty directly convert existing traditional courses without redesigning appropriately for the new DE delivery format and conventions
6. Information on the DE program is not readily available on website , or few beyond the administrators are aware of the program's existence
7. The institution has a history of starting and stopping DE programs
8. DE students frequently complain (workload, unclear policies, access issues etc…)
9. DE students express confusion over contact person or clarity in understanding the way the program is supposed to work

10. Some student services must still be handled in person

Improving Online Programs

Principle 12: Well run programs include mechanisms for continuous improvement.

Simonson, Smaldino et. al., (2009) stress the importance of formative evaluation especially in newly developing programs, stating that it is absolutely essential for the creation of consistently successful DE learning experiences. McFarlane and Smaldino (1997) draw on Schon's work (1987) on professional reflection when they recommend a process of semi-structured reflecting on the events that transpired in a semester. A careful consideration of key events, both positive and negative can provide a great deal of insight as to the fit between the approach and the students, though some degree of interpretation is needed to infuse actions with meaning. The instructor must use the clues at hand to attempt to understand why things transpired the way they did, whether positive or negative, and what factors were involved. This is crucial to replicate positive outcomes or to prevent reoccurrences of negative situations.

This reflective process should take place at the level of the individual instructor and involve their impressions as well as feedback from the students. Professional reflection of this nature is beneficial for individual professional growth and development whether involved in DE or not. However, when considering establishment and effectiveness of DE courses at a programmatic level, it's important that this private reflection become a public dialog, with all those directly involved in the development, delivery, or administration of the program participating in the conversation. Collective reflection is somewhat less intimate than private reflection, but the process is essentially the same, and is enhanced when individuals have spent private time reflecting before they share with the group, enabling them to be more focused and succinct when they share with colleagues. Group reflection is essential in identifying delivery issues and trends and addressing them promptly.

Group reflection aimed at program improvement has two main purposes: 1) learning from the experiences of colleagues, 2) identifying issues common to all and proactively addressing them. The following process approach may prove helpful. First, each faculty who taught DE courses shares and addresses group questions along the following lines:

- course/content/level & enrollment
- delivery format & key instructional design elements
- special circumstances, new innovations,
- positive outcomes & interpretation
- negative events & interpretation
- concerns going forward

After individual instructors share their personal reflections, the group engages in generalized reflective discussions guided by two key questions (adapted from MacFarlane & Smaldino's 1997 interpretation of Schon, 1987):

1. Is this DE approach going to work?
2. How can I as a professional, or we as a group of professionals, make it better?

A robust reflection and collaboration procedure, such as the process described above, regularly scheduled on a semi-annual or annual basis is recommended for developing a vibrant, high quality, context specific DE program.

Obstacles to Implementing High Quality Online Programs

Principle 13: Institutional challenges can impede a department's capacity to deliver high quality online programs.

The transformation of a solid face-to-face higher education program into a similarly solid online program or a traditional program with online DE options is more involved than many experienced program administrators realize. Institutions experience many barriers to developing a strong program of online instruction. Berge and Muilenburg (2000) completed a literature review and identified 64 potential barriers, then surveyed a large sample of various types of university staff involved with DE delivery. The top 10 Barriers they found were (as cited in Simonson et. al. p. 78-79):

1. Increased time commitment
2. Lack of funding
3. Organizational resistance to change

4. No shared vision for the DE program
5. Lack of support staff to help course development/adaptation
6. Lack of strategic planning for DE
7. Slow pace of implementation was frustrating
8. Inadequate faculty compensation/incentives
9. Difficulty keeping up with technical changes
10. Lack of technology infrastructure to support the program

The barriers DE staff found least problematic were competition with on-campus classes, transmission over vast distances, time zone issues, and lack of personal expertise with technology.

Principle 14: Faculty resistance to change must be addressed if the department is to have a successful online program.

Berge and Muilenburg further noted that five of the top 10 barriers (i.e. resistance to change, no shared vision, lack of strategic planning for DE, slow implementation, and difficulty keeping up with technological change) related directly to DE causing a need for cultural change within the institution. As with all other innovations and major changes, values come into play. Naturally, the larger the institution and the more decentralized the governance and strategic planning processes, the more diverse the values and expectations of the staff. Therefore, unity of vision, well defined collaboratively developed mission statements, and well established widespread frequent communication are important in building a culture that embraces change.

Simonson (2001) held focus group discussions with teachers to identify the source of their reluctance to teach in DE programs. These instructors' personal apprehensions were mostly related to fear, additional training needed, time commitments, and anxiety over personal changes. They also expressed concern that their school would not provide them with the necessary time to develop skills, training to develop skills, and administrative support during the transition. They further anticipated scheduling and technical problems and were afraid the change process would turn order into chaos.

These fears highlight the pivotal role leaders play in the successful integration of any new transformative element into their organization. An informed administration can steer the implementation process and alleviate some of the fear and anxiety staff feel when disruptive change, (such as being compelled to radically modify teaching style to fit an online environment) is imminent. Awareness of common pitfalls experienced by others may lead to a smoother transition for all.

The Need for Faculty Support

Principle 15: Administrative support is important to faculty who teach online.

As I familiarized myself with the literature on online instruction and program administration, I formulated questions having to do with administering online programs at a departmental level. I was interested in the perceptions of those involved in online delivery or those who had experience administering online programs. While I did not have the time or funds to conduct a formal survey with a representative or other strategic sample, I did take advantage of the opportunities that presented themselves. While somewhat serendipitous in its approach, I was able to chat with a number of instructors and interview one expert with both knowledge and experience in administering online programs.

I asked a series of questions to participants in an online conference sponsored by a professional network for online instructors that cuts across several fields (see reference to Learning Times Online Conference, October 2008). Due to the nature of the virtual setting, I cannot say how many people my questions went out to, or even how many responded to my inquiries via real-time chat. I can attest that there was a very large international audience. Most of the participants seemed to have more experience than I in teaching online, evidenced by a bar graph displaying poll results on levels of online teaching experience among participants. I was quickly dubbed a "newbie" in our chat conversation, due I suppose to the nature and number of my questions, as well as my unfamiliarity with some of the trade lingo and texting protocols (such as the use of the @ symbol and a participant's username to address a particular person). When I asked these instructors how important departmental level administrative support was to their success as an online teacher, the response was very strong, emphasizing that it was EXTREMELY important. When asked what types of support were most needed or

appreciated, responses varied, but most fell into one of two categories: things associated with funding (more training, new equipment , additional staff) or things that had more to do with moral support and encouragement (understanding the challenges they face, valuing the program, workload, appreciation). Their responses were consistent with much of the literature on faculty resistance to online teaching; hence, it seems prudent that administrators wishing to develop online programs become proactive in visibly addressing their faculty's concerns over funding and reassuring them that they will receive more than adequate moral support for their efforts.

Principle 16: Instructors and administrators often underestimate the amount of work involved in adapting courses for online delivery.

One question I asked in my chats with online instructors was, "What was the biggest mistake that administrators of brand new online programs could make?"A similar scenario was recounted for me several times, involving jumping into online delivery too quickly. Several stated that they, their administrators or both had assumed that adding online courses to their current operations would not be substantially different from the way they had traditionally prepared and operated. Several viewed the failure to recognize the magnitude of the transition to online delivery as an administrative blunder. Some felt that their administration did not have an adequate understanding of issues involved in online course delivery. Among the "mistakes" mentioned was the assumption that converted online courses would operate in the same way that the existing traditional program had, and that little additional effort would be required to add online courses if instructors began with classes they had previously taught. The error in this assumption is the failure to realize how dramatically the online learning environment differs from in-person learning (Smith, 2008). The internet is a visual medium; today's students are well aware of that and expect to learn from it in ways other than lecture and print. From an instructional stand point this means that many, if not most, of the teaching methods and materials that have worked successfully in the past will not be suitable for web-based teaching. Many instructors consulted felt underappreciated for additional effort they had poured into course conversion. Administrative who were awareness of the issues involved in online delivery, instructional and otherwise, was of great importance to those who responded.

Principle 17: Instructional Design is central to smooth and effective online courses.

As mentioned many of the instructors I chatted with expressed that they did not know at the onset how difficult it was going to be to adapt their class to teach online. Several participants sent a short chat in response to this having to do with underestimating the amount of time involved in instructional design prior to the start of the course. Had I been a participant rather than the one inquiring, I would have concurred with this, as I too, was surprised by the amount of time involved in re-designing a course I had already taught for online delivery. Prior to the start of my first online course I began some initial practitioner oriented reading and began a running list of things I needed to tend to prior to the start of classes. Some of the tasks from my initial "to-do" list are included below. I will never forget the shock I felt when I first realized, as a third year assistant professor, that all of the materials for the entire course really needed to be developed and posted in a stable easily accessible site *prior to the first day.* I realized that I that I needed to quickly address a number of things and pull them together in an organized way in order to be prepared for a smooth successful semester. Listed below are some of my most vivid initial realizations as I prepared to teach online for the first time.

1. All assignments, instructions, and policies had to be written out in great detail and posted in an obvious location, because online students are more likely to rely on printed instructions and are much less likely to ask spontaneous logistical questions in a virtual class.
2. I needed many more visuals than I had used in face-to-face classes and I would need to create most of these graphics, since the field in which I teach is fairly abstract and has a strong tradition of reliance on the printed or spoken word.
3. I needed to master new methods of eliciting participation in real-time virtual sessions, since I could no longer rely on physical activity in a virtual classroom.
4. I needed to figure out the logistics of manipulating the course transmission service I would be using, so that I could successfully execute some of the interactivities I had discovered.
5. I needed to re-design the asynchronous website to make it very user friendly, so that my students could easily navigate the system.
6. All materials for the entire course needed to be developed in full and posted prior to the course start date. My graduate students expected to have 24/7 access to the materials prior to day one. They also

wanted document location and form to remain static so that they could refer to them or print them as needed.

7. Precise planning and pacing of the course became much more rigid and static, since It was not as easy to simply continue a topic the next week, in a virtual environment.
8. I needed to create pre-semester *orientation to online learning packet* of materials (e.g. pre-semester letter of introduction, explanation of logistics such as how the course would work, equipment needed, instructor contact information and links to both the synchronous and asynchronous web-site), to let students know what expect in the virtual class they were about to begin.

Prior to teaching online, my concept of instructional design involved creating a syllabus that outlined texts, assignments, grading policies and developing a basic pacing chart for the semester. These realizations that I now needed to do much more in order to be ready on day one placed me under a great deal of pressure. However, I found that once I had it all organized for a particular course and ready to go for the initial semester, that subsequent semesters of the same course took much less preparation time. Apparently, my experience of learning to teach online, *by doing it* is not that uncommon.

Compora (2003) indicated that some faculty may not be fully prepared to move into an online instructional environment without training and assistance with ID and IT. He documented that the longest running and most developed online programs provide regular support for both students and faculty. Compora concurs that instructors often need help "getting started teaching a course in a different manner than they are accustomed", but that most programs provide little or no training for new online instructors or for those converting a new course.

Robin Smith, Blackboard trainer, and Certified Virtual Instructor at Texas A&M's Center for Web-Based Learning recommends that instructors begin working on the instructional design for a new online course roughly 10 months prior to the course start date, but acknowledges that this is seldom the case. She also recommends consulting with an ID specialist and receiving delivery method IT training during this period. The sooner and the

better a course is organized in a pedagogically/andragogically sound way, consistent with assisting learners at a distance, the greater the chances that these learners will have a positive learning experience. Smith's (2008) step-by step guide to online course design is an excellent resource that I wish I had discovered prior to my first year of online teaching. Smith urges careful planning of online courses and offers a model to assist new online instructors with appropriate structuring of converted courses. She readily acknowledges that designing all activities up front and creating new more visual instructional materials takes a great deal of time before the course begins, more than the average "newbie" instructor has, but recommends starting with the most difficult and crucial lessons first, and adding to the collection with multiple reiterations of the course over time to build up a repertoire of available resources to support online learning. The Smith book highlights how a clearly developed realistic plan for all the elements of online delivery can greatly enhance success, especially when it comes to clarifying expectations for students.

Principle 18: Incentives encourage faculty to teach online and to stick with it when difficulties are encountered.

Faculty awareness of the increased workload associated with developing new online courses can lead to diminished motivation to "teach out of a box". So, administrators should consider possible trade-offs for faculty willing to take on this responsibility. Even though the individual instructor may be willing, experienced in teaching, tech savvy, and possess a great deal of content knowledge, a great deal of additional time and effort will still be required to redesign the course and prepare to teach it effectively. Lack of preparation for teaching online may lead to high anxiety, frustration and dissatisfaction for students and instructors, not to mention administrative headaches. Once the course begins, online instructors can also expect to spend more time in email, discussion board and/or phone interactions with students than they may be accustomed to, especially if students are unfamiliar with the course design or delivery mode. Hence, transitioning to online teaching creates a great deal more work for faculty accustomed to face-to-face delivery, leaving many instructors wondering why they opted to teach online.

Rockwell, Schauer, Fritz, and Marx (1999) identified incentives that may make online instruction attractive to faculty members. While release time for preparation prior to and in the early stages of beginning to teach was

recommended, they also suggested that administrators facing budget crunches stress intrinsic rewards that may be motivational, such as :

- the ability to try new techniques
- the opportunity to work with new people or gain new skills
- the opportunity for peer recognition for their work
- the ability to teach from home saving travel time and expense

Principle 19: Faculty have varied levels of anxiety related to teaching online; some will be excited and want to pick up the pace: others will be much more cautious. Sensitivity to individual differences is needed.

Another area in which faculty need support involves sensitivity to people's individual anxiety level related to teaching their courses online. This change requires that faculty become risk takers; some people are naturally more comfortable and willing to try new things they have neither done, nor possibly never seen done before (Awalt, 2007, p. 107). Not surprisingly, many faculty resist this change to online teaching; pre-tenured faculty may fear the impact on their attainment of tenure due to time investments or marginal student evaluations as they learn new methods and acquire new materials. Tenured faculty may not be motivated to put forth the effort required to reach a comparable quality of instruction they already deliver in face-to-face classes. Some faculty, however, seem to enjoy the challenge and approach online teaching with a sense of adventure; while these faculty members are enthusiastic in early stages of an online program, they can become frustrated with the slow pace of change. The administrative challenge with these faculty members involves keeping them enthused while tempering their expectations for a sudden and radical departure from past operations.

Berge & Muilenburg (2000) pointed out that many administrators underestimate the support required to establish and maintain consistently high quality online programs. The two basic types of support previously mentioned, those related to fiscal support and those related to psychological/emotional support extend to several areas of operations. The instructors I spoke with expressed a desire for their department to support them by funding course release time for faculty professional development and instructional design, but while the need was universally acknowledged, many concurred that this had not been provided presumably because administrative

personnel did not see the need, funds were unavailable, or other priorities took precedent. The provision of travel funds for additional professional development opportunities was also mentioned, but many stated that they had received or could receive these if requested.

The Need for a Consistent Guiding Standards

Principle 20: A guiding model or set of standards helps to ensure that important dimensions of the virtual classroom are not overlooked.

In January of 2009 I, interviewed Myk Garn, Associate Director of the Southern Regional Education Board (SREB), and expert in online instruction. He recommended that departments, seeking to develop strong online instructional programs appoint a small committee to explore ,identify, and adopt a credible research-based set of standards for online course delivery. Several sets are available, but Garn specifically referred to two documents on the SREB website (http://www.sreb.org) entitled *Standards for Quality Online Courses* and *Checklist for Evaluating Online Courses*. He felt these documents would serve as a good research-based guide for the development and evaluation of our online program.

Based on this interview, my experience and readings, I believe that structural support is also needed to undergird the development of a new online program. This structural support could come in the form of identifying the level at which the online courses will be administered (program vs. department), then putting together a steering committee and charging them with drafting protocols for online instructional delivery. They would also draft vision and mission statements and identify a set of guiding standards to inform policy, evaluation and future growth for online classes. Establishing a representative steering committee could serve to unify the faculty, develop a sense of collegiality or "we-ness" among staff, and provide the basis for clear consistent publishable communication about the program to students, the rest of the university, and the general public. For a more in depth discussion of leading an online DE program see Simonson et. al. (2009, Ch. 12 pp. 320-347).

Due to economics and increased demand for access to online courses many institutions are scrambling to meet the need; however, some have overlooked or are unaware of the dimensions involved in a "virtual campus"

(Stenerson, 1998, as cited in Koontz, Li, & Compora, 2006). Moore & Kearsley (1996) suggested that institutions follow a model for developing online programs because the process requires planning, development, production and distribution on a larger scale than most teachers and administrators are familiar with. "Re-creating the wheel" on limited time, budget and knowledge can lead to poorly designed instruction that is poorly incorporated into the larger scheme of things. Too frequently courses are simply offered because they already exist, faculty are willing to try teaching online and the technology is available; thus, underdeveloped courses are served up before they are ready for online delivery to learners (Koontz, Li, & Compora, 2006 p. 39).

Conclusion

Despite the demand for online courses, particularly in providing graduate programs for pk-12 educators, and the eventual fiscal gains that online programs can offer, the consensus amongst the experts is that online instruction should not be entered into on a whim. Many considerations and a great deal of planning and coordination, not to mention start-up expenses go into the development of high quality delivery online programs. Many fail to count the cost and fold as quickly as they start (see afore mentioned *USDE Report on Quality in DE Programs*, 2006, red flag #7). Administrative guidance and oversight are crucial to the development of a solid online program. The 20 principles identified in this report are based on research and my practical experience with the transition to "teaching out of the box". It is hoped that the principles prove informative and helpful to those endeavoring to develop high quality online learning programs.

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Appendix

20 Research-based Principles for Transitioning to Teaching Online

From L. Schoen (2010). *Teaching Out of the Box: 20 Research-based Principles to Guide the Transition to High Quality Online Graduate Programs.* Paper Presented at EDUCAUSE Southeast Regional Conference June, 2010. Atlanta, GA

Principle 1: Well done online instruction is just as effective as face-to-face instruction.

Principle 2: Learners have variable levels of anxiety upon entering an online class; the extent to which anxieties are addressed can impact student satisfaction and attrition rate.

Principle 3: Online courses favor students who are self-efficacious and abstract thinkers; however, instructional differentiation may be useful in helping all students succeed in online courses.

Principle 4: Recognizing and addressing barriers to student success in online classes can help minimize negative effects on learners.

Principle 5: The ability to self-select online instruction is important to students' motivation to persist and do well in an online class.

Principle 6: Online students often engage in much more interaction about content or processes than their peers in traditional classes.

Principle 7: Interaction in online courses should serve a purpose, be meaningfully integrated into core student activities, and give adult learners control over the manner and frequency of contact.

Principle 8: Adult learners need and want their time respected; therefore, total time commitment to complete the course should be made explicit to students at the start of the course.

Principle 9: Authentic interaction can take place in either or both synchronous or asynchronous portions of the course.

Principle 10: Technical Support Availability in real-time is crucial for successful online experiences

Principle 11: The Accreditation community watches for indicators to help differentiate between well run online programs and inferior programs.

Principle 12: Well run programs include mechanisms for continuous improvement.

Principle 13: Institutional challenges can impede a department's capacity to deliver high quality online programs.

Principle 14: Faculty resistance to change must be addressed if the department is to have a successful online program.

Principle 15: Administrative support is important to faculty who teach online.

Principle 16: Instructors and administrators often underestimate the amount of work involved in adapting courses for online delivery.

Principle 17: Instructional Design is central to smooth and effective online courses.

Principle 18: Incentives encourage faculty to teach online and to stick with it when difficulties are encountered.

Principle 19: Faculty have varied levels of anxiety related to teaching online; some will be excited and want to pick up the pace: others will be much more cautious. Sensitivity to individual differences is needed.

Principle 20: A guiding model or set of standards helps to ensure that important dimensions of the virtual classroom are not overlooked.