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Editorial ~ Open Access in Action!

Terry Anderson

Mid 2006 finds the academic research community engaged in an ideological and fiscal war related to Open Access publishing. Open Access requires that the full text of publications be made available at no cost to anyone on the open Internet. Recent position and discussion papers in Canada, the United States, the United Kingdom, and other countries, have called for dialogue amongst academics and strongly hinted that research supported by public funds should be made available freely to the general public. The resulting discussion has clearly split the academic community with both support and rejection of the notion from all sides of the politic and discipline spectra.

IRRODL's position is, as expected, to be solidly behind all moves to insure Open Access publication. We are proudly listed with the 2,256 other journals in the Directory of Open Access Journals and our publisher, Athabasca University, is a signature to the Budapest Open Access Initiative.

The argument for continued restriction and closed publication seems to come from two sources. The first is from academics associated with non-profit societies who feel that without substantial subscription revenue (even if consumed by a commercial publisher) they will be unable to sustain the mostly paper based dissemination models that have defined their publication for many years. They argue that paper copy is critically important (they seem to have never learned how to print from the screen!) and that Open Access somehow diminishes the value of their peer review and editorial contribution. From six years of producing IRRODL, we know that editing and reviewing are non-trivial tasks that take time, skill, and creative energy, and we certainly do not subscribe to any notion that devalues this contribution to scholarly life. The second source of resistance comes from the commercial publishers who echo this resentment from a pecuniary perspective that reflects the high potential for lost income in a business line that, for a number of publishers, is their most profitable publishing activity.

I would like to enlarge this debate by including the authors, researchers, and administrators who contribute articles and focus their discussion on our discipline of distance education research. For authors, the prime consideration for publishing is impact in their community. There is a growing number of studies reporting that Open Access results in increased dissemination (see an online bibliographies of articles documenting the impact of Open Access at http://opcit.eprints.org/oacitation-biblio.html). These reviews are near unanimous in their conclusion that "freely available articles do have a greater research impact"(Atelman, 2004); however, there are differences in impact and the amount of Open Access across the disciplines.

What of articles in distance education journals? I recently performed a quick experiment using Google Scholar to compare the number of citations of articles in five of the most popular distance education related journals. The method by which Goggle spiders find articles is quite obscure, so there is no way of telling if the engine itself has systemic bias. Nonetheless, I counted the average

number of citations for the ten most popular articles published by these journals in the past 5 years.

Table 1. Open Access vs. Closed Access distance education journals' citations

Journal Title	Country	Aver. # of Citations	Publication
IRRODL	Canada	29.4	Open Access
American Journal of DE	USA	27.8	Closed
Journal of Distance Education	Canada	27.1	Open Access
Distance Education	Australia	24.2	Closed
Open Learning	UK	20.9	Closed

The data above shows that the two Open Access journals have higher number of citations than all but the American Journal of Distance Education. Given the wider circulation and much smaller number of articles published in the American Journal of Distance Education, it is perhaps not surprising that they have relatively high citation ratings as well. However, clearly the Open Access journals have (on average) greater number of citations and impact than closed publications. The point I draw from this is that authors wishing to maximize the impact of their research in our field are advised to select Open Access outlets.

A second view on this debate comes from an administrative and humanistic perspective. For many academics in the developed world, access to restricted or closed publications is not problematic due to access through large aggregators who sell subscriptions to university libraries. These indices often contain the full text of thousands of closed publications and they are relatively easy to use. Access for the privileged serves to obscure the seriousness of 'access issues' from a global perspective. I inquired of the cost of these databases and was told that a small university like Athabasca University pays approximately $300,000 per year for these subscriptions. Given that collectively Athabasca researchers publish slightly more than 100 peer reviewed articles per year, one can see that the cost of this mode of academic dissemination (at least for one university) is about $3,000 per article. Surely with this amount of money being distributed we can collectively find ways to cover the legitimate costs of editing, peer review, and distribution of scholarly articles without using means that restrict access by the vast majority of human beings on this planet. Open Access challenges researchers and practitioners to continuously strive for vehicles and techniques that allow dissemination and application of our research to the maximum number of users at the lowest possible cost.

Moving next from the political to the practical, we introduce IRRODL readers, authors, and reviewers to the Open Journal System (OJS) used as the backend and technology this issue. OJS is an open source system developed at the University of British Columbia (and now Simon Fraser University) that supports both the display and distribution of online journals, along with the submission, review, and editorial processes involved in their production. We have work yet to do in the presentation of IRRODL, and are in the midst of a learning curve as we (and our faithful authors and reviewers) learn how to effectively manage this complex system. We are convinced, however, that OJS will allow us to more effectively manage IRRODL and should reduce the time it takes all parts of the production of IRRODL.

From a reader perspective, the new layout provides a number of enriched citation and further research tools, as well as much improved search capacity across all issues. Unfortunately, the database move forced us to assign new URL's to past issues and articles. However, we hope that the new search system will allow readers to quickly find past issues and trust that the URL's will

not change again. We welcome feedback from readers, authors and reviewers as to ways that the lively OJS community can continue to improve this publishing and display system.

Finally, to a brief introduction to the contents of this issue . . .

This issue leads off with a study on plagiarism – a challenge to all educators, but perhaps one more acute for distance educators where opportunities for close supervision are reduced creating both challenge and opportunity. This study by Christine L. Jocoy and David DiBiase provides very useful information comparing the commercial service TurnItIn to teacher review. It also documents the efficacy of a plagiarism awareness program. The second article by Sherri Melrose and Kim Bergeron provides a qualitative analysis of learners' perceptions of immediacy in online learning. Immediacy has been studied in face-to-face and in synchronous models of learning, but much less work has been done illustrating the way in which instructor immediacy is expressed and perceived in asynchronous forms of online learning. David Olugbenga Ojo's and Felix Kayode Olakulehin's article next evaluates Nigerian students attitudes' to their experience of distance versus conventional education. Ojo's and Okakulehin's paper highlights the capacity of distance education to provide higher education access in regions where access to many potential students, is severely limited. Teddi S. Deka's and Patrick McMurray's article reveals significant individual factors associated with success in both face-to-face and learning via teleclasses. Given the amount of choice provided in the learning modality offered to learners today, and likelihood of even greater choice in the future, studies such as this are useful for advisors and students to gauge their likelihood of success.

Christine Grandzol and John Grandzol provide a useful and practical review of the literature relevant to online business education in the Notes section of this issue. Their summary will be of value to both academics and administrators developing and reviewing programs in this very popular subject area for online delivery. Finally, this issue features four book reviews of recent distance education texts and three Technical Notes produced by Master's degree students at Athabasca University.

We trust you will enjoy the new format and will take the opportunity to try listening to an article on your MP3 player. We also hope you will share at least one article with a colleague. If you have concerns or suggestions please email myself or IRRODL's Managing Editor, Paula Smith at paulah@athabascau.ca

References

Antelman, K. (2004). Do open-access articles have a greater research impact? *College & Research Libraries 65*(5), 372 – 382. Retrieved November 17, 2005 from: http://eprints.rclis.org/archive/00002309/

Harnad, S., and Brody, T. (2004). Comparing the Impact of Open Access (OA) vs. Non-OA Articles in the Same Journals. *DLib Magazine 10*(6) Retrieved May 13, 2006 from: http://www.dlib.org/dlib/june04/harnad/06harnad.html

Plagiarism by Adult Learners Online: A case study in detection and remediation

Christine Jocoy
California State University, Long Beach
USA

David DiBiase
The Pennsylvania State University
USA

Abstract

Detecting and combating plagiarism from Web-based sources is a concern for administrators and instructors involved in online distance education. In this paper, we quantify copy-and-paste plagiarism among adult learners in an online geography course offered through Penn State's World Campus Geographic Information Systems (GIS) certificate program. We also evaluate the effectiveness of an "expectation management" strategy intended to discourage adult learners from unintentional violations. We found that while manual methods detected plagiarism in only about 3 percent of assignments, Turnitin.com revealed a 13 percent plagiarism rate among the same assignments. Our attempts to increase awareness and manage expectations decreased infractions measurably, but not significantly. In contrast, Turnitin.com substantially improved our ability to detect infractions. We conclude that raising awareness and managing expectations about plagiarism may be worthwhile, but is no substitute for systematic detection and vigilant enforcement, even among adult learners.

Keywords: Plagiarism; academic integrity; cheating; online; e-learning; adult education

Introduction

Educators have always been concerned with upholding standards of academic integrity among individuals engaged in scholarly pursuit. For many institutions of higher learning, academic integrity is viewed "as a basic guiding principle for all academic activity" (Penn State University Faculty Senate, 2000). Members of intellectual communities, such as universities, are expected to value honesty, trustworthiness, and civility and to behave accordingly (McCabe and Pavela, *n.d.*; Princeton University, 2003; York University, 2005). These standards of behavior are meant to ensure "that work done is one's own and that the work of others is properly recognized" (College of Agricultural Sciences, 2005). As a basic tenet of scholarly activity, educators have a responsibility to foster and maintain standards of academic integrity, which requires engaging students in the development of moral reasoning (Kohlberg and Hersh, 1977). One approach to

effective maintenance of standards and the advancement of students' moral development is the detection and remediation of specific violations.

Plagiarism is one type of violation of academic integrity. The Council of Writing Program Administrators states that "Plagiarism occurs when a writer deliberately uses someone else's language, ideas, or other original (not common-knowledge) materials without acknowledging its source" (as cited in Quinn, 2006). With the proliferation of digital source material on the Web, plagiarism has received renewed attention, particularly among administrators and instructors involved in online distance education (Groark, Oblinger, and Choa, 2001; Heberling, 2002; Hickman, 1998). Some observers believe that the Internet makes it easier for students to plagiarize (Harris, 2004; Saulnier, 2005). Underwood and Szabo (2003) find that students with more exposure to Internet use in assignment preparation self-reported greater willingness to engage in copy-and-paste plagiarism (i.e., copying word-for-word without citing the source). Hinman (1999) goes so far as to suggest that we soon will witness an increase in academic dishonesty as universities offer more courses through online distance education.

As instructors of an online distance education course, we share these concerns and chose to examine the extent of Internet plagiarism in five offerings of our online course between July 2003 and June 2004. Our course requires students to be active Internet users, including creating an online portfolio in which they post their assignments as webpages. This paper presents the results of our investigation of plagiarism prevalence, detection, and remediation among adult learners in an online course. We focus specifically on copy-and-paste plagiarism, the copying of another author's language word-for-word without proper citation.

The paper is organized in the following way. First, we offer an interpretation of the definition of plagiarism and explain its impact on quantifying, detecting, and preventing infractions. Second, we describe our online course, convey our expectations regarding plagiarism among adult learners, and explain our focus on the copy-and-paste variety. Third, we discuss the methods used. Fourth, we present the results of our study which include quantifying the actual rates of plagiarism among assignments prepared by students, comparing plagiarism rates obtained using two different methods of detection, and evaluating the efficacy of explicit plagiarism instruction to reduce infraction rates. Finally, we discuss the implications of our results and recommendations for maintaining academic integrity standards.

Defining and Identifying Plagiarism

The Council of Writing Program Administrators' definition of plagiarism reveals several contingencies which complicate the enforcement of academic integrity in higher education, particularly in regards to adult education. Intentionality is one contingency. Writers' uses of the works of others are not always deliberate. Infractions may result from mismatches between the ethical norms of the academy and the workplace (Martin, 1994), or simply from hasty and incomplete adaptation of passages copied and pasted from digital sources for reference purposes. Some might consider the latter an example of poor writing rather than plagiarism because it did not involve intentional cheating. Nonetheless, it is difficult to ascertain intentionality through detection except in extreme cases. (Extreme cases would include copying entire or large portions of papers written by someone else or papers purchased from term paper mills.) Lack of proof of intentionality may reduce the penalties for offenders, but detecting writing that gives the impression of being plagiarized remains important for offering instructive remedies. Unintentional violations of the rules do not mean that plagiarism has not occurred.

Regardless of the degree to which an infraction is intentional or substantial, plagiarism violates an original author's intellectual property rights. The "fair use" provision of US copyright law does allow quotations and paraphrasing of original works without authors' permission. When original authorship is not properly acknowledged, however, such uses constitute copyright infringement.

A second contingency is the degree of culpability. Researchers have identified different forms of plagiarism (Cabe, n.d.; Martin, 1994). Copying another writer's language (e.g., directly quoting word-for-word several sentences of common-knowledge materials) or poor paraphrasing (e.g., substituting a few synonyms for original text without significantly changing it) may be judged less substantive infractions than an attempt to pass off someone else's idea as one's own. Some educators suggest that concern with plagiarism should be more about teaching students to appreciate the development of knowledge, acknowledge intellectual contributions of other scholars, and represent the process of building on existing knowledge in academic writing and less about violating rules and copyright laws (Howard, 2003; Hunt, 2003; Martin, 1994).

Because academic integrity involves the development of behavior that reflects moral values, educators' responsibility for addressing plagiarism may go beyond shielding students from copyright infringement. Students whose use of other authors' works is constrained only by the perceived risk of detection and punishment may fail to recognize the relevance of the rights of others (Kohlberg and Hersh, 1977). By seeking more than mere compliance with what may seem to students to be arbitrary rules, therefore, educators enforce academic integrity in order to advance students moral development (Dark and Winstead, 2005). These considerations, which complicate the identification of plagiarism and enforcement of standards, affect instructors' ability to quantify, detect, and prevent incidences of plagiarism. The following sections review previous research on these three issues.

Quantifying Plagiarism Prevalence

Previous studies report widely varying percentages of cheating prevalence (Crown and Spiller, 1998; Ercegovac and Richardson, 2004; Lathrop and Foss, 2000; Whitley, 1998). Crown and Spiller (1998) attribute this to variation in the measurement of cheating along three dimensions: actual observance versus self-reporting of instances, type of cheating behavior evaluated, and time period in which cheating occurred. First, most research quantifies cheating by means of self-reporting in student surveys (CAI research, 2005; Ercegovac and Richardson, 2004; Whitley, 1998). Actual observations of cheating produce different results, usually much lower estimates of prevalence (Crown and Spiller, 1998; Karlins, Michaels, and Podlogar, 1988). Second, Whitley's 1998 review of the literature on college cheating indicates that cheating behavior is most frequently defined as cheating on examinations followed by estimates of total cheating, cheating on homework, and plagiarism. Estimates of total cheating typically include a variety of types of cheating behavior (e.g., copying from another student's exam or quiz; using notes during an exam; turning in a paper written by someone else; falsifying citations; failing to cite source material; unauthorized collaboration on homework (McCabe and Trevino, 1996). The wide range of cheating rates reported in the literature (i.e., from 9 to 95 percent of students for total cheating and from 3 to 98 percent for plagiarism as reported in Whitley (1998) suggests that the type of cheating behavior explains some of the variation in incidence levels (Crown and Spiller, 1998). Third, the bounding time frame for incidence occurrence, either for observance or survey self-reporting of cheating behavior, affects prevalence rates. Incidence rates for cheating on homework assignments over the course of a semester will differ from rates of plagiarism on one assignment or self-reporting of any incident of cheating during a college career (Crown and Spiller, 1998).

Less common in the literature are studies that examine the prevalence of plagiarism separately from other forms of cheating (Whitley, 1998). Most assessments of the prevalence of plagiarism alone among students rely on self-reporting in surveys (CAI research, 2005; Ercegovac and Richardson, 2004; Scanlon and Newman, 2002). Such surveys are often conduced within individual universities (Ercegovac and Richardson, 2004), but a few studies sample from multiple universities (CAI research, 2005; Scanlon and Newman, 2002). A few studies measure actual rates of plagiarism detection among student assignments as a way to gage prevalence (Braumoeller and Gaines, 2001; Karlins, Michaels, and Podlogar, 1988; Soto, Anand, and McGee, 2004). Given the effort involved in systematic cheating detection, studies reporting observed rates assess fewer plagiarism types, shorter time frames, and smaller samples of students or assignments at a single university. This may reflect the finding that instructors are reluctant to report student cheating and therefore have no desire to set up systematic procedures for detecting it (CAI Research, 2005; Ercegovac and Richardson, 2004). Table 1 summarizes the research on actual plagiarism rates. Differences in the types of plagiarism detected may account for some of the variation in plagiarism rates obtained in the three studies.

Table 1. Summary of studies quantifying actual plagiarism rates

Study	Plagiarism rate*	Sample size (*n*) (students)	Type of plagiarism	Time frame (semesters)	Number of classes & assignments
Karlins et al. 1988	3%	666	Verbatim copying & poor paraphrasing from previously submitted student papers.	2	1 (1)
Braumoeller and Gaines 2001	13%	151	Verbatim copying & poor paraphrasing from Web sources.	1	2 (1)
Soto et al. 2004	21%	220	Verbatim copying & poor paraphrasing from all available sources.	1	3 (1)

*Figures have been rounded to whole percentages.

Detecting Plagiarism

Instructors' ability to detect plagiarism has improved dramatically in the last decade. Prior to widespread use of the Internet, detection was limited to the manual efforts of instructors. For example, in the Karlins, Michaels, and Podlogar (1988) study, two people manually compared papers submitted during the current and preceding semester that contained citations of the same sources for verbatim copying or poor paraphrasing. Today, increased Internet use makes it both easier for students to copy-and-paste from online materials and for instructors to detect infractions (Braumoeller and Gaines, 2001; Tenbusch, 2002). Free online search engines such as Google allow instructors to track down copied phrases, while commercially available plagiarism detection software and online services (e.g., EVE; *Turnitin.com*) compare individual student papers to Web documents and/or to essay databases to find and report instances of matching text.[1]

The two recent studies discussed above used commercially available technology to quantify rates of plagiarism. Braumoeller and Gaines (2001) made use of EVE (Essay Verification Engine) software, while Soto, Anand, and McGee (2004) used Turnitin.com, an online detection service. (Rather than selling software, Turnitin.com sells subscriptions to its search engine services.) Soto, Anand, and McGee (2004) used Turnitin.com to catch Web plagiarism and checked sources from students' bibliographies for plagiarism from articles not available on the Web, while Braumoeller and Gaines (2001) examined Web sources only.

We compared our ability to detect Internet plagiarism within our students' assignments using two different methods. This allowed us to evaluate and compare the effectiveness of automated and manual methods of plagiarism detection.

Preventing Plagiarism

While recognizing the importance of plagiarism detection, we are also interested in prevention. Our own experience with student infractions supports the conclusion of Center for Academic Integrity (CAI) researchers that many students have yet to develop a clear sense of appropriate Internet use in written assignments (CAI research, 2005). Other researchers found actual observed infractions to be associated with a lack of knowledge about plagiarism (Soto, Anand, and McGee, 2004). Many educators view explicit plagiarism instruction as the best means of prevention (Conradson and Hernandez-Ramos, 2004; Harris, 2004; Vernon, Bigna, and Smith, 2001). Recent case study research provides support for the effectiveness of incorporating plagiarism instruction into individual courses. Soto, Anand, and McGee (2004) found that students who received no explicit plagiarism instruction plagiarized twice as often as those who participated in active instructional activities such as class discussions of definitions of plagiarism, review of Turnitin.com plagiarism reports, and exercises requiring students to identify instances of plagiarism in example essays. We also tested the impact on infraction rates of providing explicit plagiarism instruction in the form of an expectation management strategy introduced prior to students' preparation of assignments.

Case Study

We analyzed 429 assignments prepared by students[2] enrolled in five sections of Geography 482: The Nature of Geographic Information between July 2003 and June 2004 for signs of plagiarism.[3] Geography 482 is a required first course in both the Post-baccalaureate Certificate and Master of Geographic Information Systems (GIS) degree programs offered by Penn State's Department of

Geography and delivered through the University's World Campus. The course has been offered four times a year since 1999, attracting 40 to 100 students per offering. The purpose of the course is to introduce students to the field of GIS and to orient them to online learning. Students meet the latter objective by creating and maintaining a webpage portfolio (e-portfolio) of their course assignments.

Enrollees tend to study part-time while maintaining full-time employment.[4] Ages of students enrolled during the study period ranged from 25 to 87; the median age was 41 years. Students were located throughout the US and to a lesser extent the world. Sixty-six percent were male. Most had undergraduate degrees obtained through previous higher education.[5] Many were practicing GIS professionals seeking formal education in geography and GIS in support of career advancement. Others pursue the certificate in hopes of entering the field.

Plagiarism Among Adult Learners

Our course is populated primarily by part-time returning adult students. Our initial assumption was that the adult learners in our course would be less likely to plagiarize and more likely to have received instruction about academic integrity through previous education. Studies of the demographic characteristics of students support this assumption with evidence that age is associated with lower levels of cheating (Whitley, 1998). A closer look at the specific definitions of cheating used in studies, however, suggests this association is not true for plagiarism, which was defined as having "intentionally used someone else's ideas or words as your own" (Roberts, Anderson, and Yanish, 1997). Even though cheating is less acceptable to older, post-baccalaureate students, there is other evidence that graduate students still engage in cheating (Brown, 1995; Love and Simmons, 1998). These studies indicate that graduate students cheat for the same reason that undergraduates do: to get good grades when they do not study enough to earn them on their own. We found in our course that students experienced an additional financial pressure to attain grades of at least a B, as many of their employers reimburse them for the cost of the course only under that condition. While older students may be less likely to engage in cheating, this may not apply to plagiarism specifically and there are additional situational factors that may counter the demographic trends.

Copy-and-Paste Plagiarism

Even though evidence to date provides mixed support for the idea that levels of college student plagiarism, and cheating generally, are rampant and increasing (Crown and Spiller, 1998; Lathrop and Foss, 2000; McCabe and Trevino, 1996; Whitley, 1998); nonetheless, student responses to survey questions about Internet plagiarism are cause for concern. The Center for Academic Integrity (CAI) reports results from their survey of approximately 50,000 students at more than 60 universities that students believe:

> *'cut & paste' plagiarism – using a sentence or two (or more) from different sources on the Internet and weaving this information together into a paper without appropriate citation – is not a serious issue. While 10 percent of students admitted to engaging in such behavior in 1999, almost 40 percent admit to doing so in the Assessment Project surveys [2002-5]. A majority of students (77%) believe such cheating is not a very serious issue* (CAI research, 2005).

Another survey of college student attitudes towards Internet plagiarism reveal that nearly 90 percent (of 698 students at nine universities) agree that copying and pasting text from Internet or traditional sources without proper citation is wrong, but close to 25 percent admit having used Internet sources in this manner anyway (Scanlon and Neumann, 2002). This same study found that students perceived their peers to be guilty of copying and pasting text from Internet sources at a much higher rate (almost 88 percent). In a 2005 survey of undergraduate students at Penn State, 28 percent of respondents reported their belief that plagiarism occurs in many courses, while 14 percent said they knew at least one person who had plagiarized a paper (Penn State Information Technology Services, 2005).[6] No data are available for the thousands of adult professionals who participate in certificate and degree programs online through the University's World Campus.

In our course, copying and pasting text from Internet websites was the form of plagiarism that students were most likely to engage in, given the requirements for the assignments. We selected two of three project assignments to examine for signs of plagiarism. Students post project reports in their e-portfolios. Project 1 required students to compare three geospatial coordinate systems (i.e., grids that enable the specification of particular locations on the earth's surface) and to describe a map they create using an online mapping tool. Project 3 involved investigating a method or technology used to collect and analyze geographic information. We eliminated the second assignment from our study because it did not require students to review literature extensively. We were concerned with copy-and-paste plagiarism in this introductory course because assignments did not ask students to make evaluative or critical arguments, nor were they required to make original research contributions.

Methods

This study investigated three aspects of plagiarism. The first objective was to quantify actual rates of copy-and-paste plagiarism in student assignments. The second objective was to compare our ability to detect plagiarism manually with automated methods provided by plagiarism detection software. Manual methods were used during the process of grading the assignments during each of the course offerings. After the completion of the courses, the assignments were reevaluated for plagiarism using an automated detection service. The third objective was to contrast assignments prepared by students who were given minimal plagiarism instruction to assignments completed by those receiving explicit instruction. This before-and-after comparison revealed the extent to which explicit instruction reduced occurrences of plagiarism.
Quantifying plagiarism using manual detection

In instructions for the course assignments, plagiarism was defined generally as the unacknowledged use of ideas, words, or illustrations produced by other authors. Students were given a link to the definition of plagiarism used by Penn State's College of Earth and Mineral Sciences (College of EMS, 2002):

> *The fabrication of information and citations; submitting other's work from professional journals, books, articles, and papers; submission of other student's papers, lab results or project reports and representing the work as one's own; fabricating in part or total submissions and citing them falsely; purchasing or copying papers from Web; etc.*

During the process of grading, each assignment was evaluated for upholding principles of academic integrity using manual methods for plagiarism detection. The grader looked for

common signs of copy-and-paste plagiarized work: inconsistent citation styles, lack of citations in long passages, awkward formatting, use of dated language, use of difficult vocabulary and terminology, and irregularities of diction and style (Harris, 2004). Suspect text was checked against work cited in bibliographies and through Google searches for copied phrases and sentences. We employed a strict standard for classifying text as plagiarized. An assignment was considered to contain plagiarism if it included: 1) at least one sentence copied verbatim from an online source without the inclusion of quotation marks and a citation or; 2) two or more poorly paraphrased sentences that also lack citations. In the second case, poor paraphrasing was identified as sentences including too many of the author's actual words or phrases and/ or the author's original sentence structure.

We did not check printed materials as sources of plagiarism for several reasons. First, students were encouraged to use Web resources because one objective of this orientation course is Internet literacy. Second, students did not have required readings from printed materials as all of the course lecture material was online and served as the textbook for the course. Third, we recommended specific webpages from reputable organizations – pages which did a good job of citing sources – for their use in assignments. In addition, Braumoeller and Gaines (2001) found that printed sources may be detected indirectly through direct quotations included on webpages and in online articles. Nonetheless, there is a small chance that by excluding printed materials our analysis underestimates the amount of plagiarism.

Quantifying Plagiarism Using Automated Detection

To obtain a second measure of plagiarism, we re-analyzed the same set of assignments using Turnitin.com, an online detection service. We evaluated several plagiarism detection software packages and services before deciding on Turnitin.com. Most of these providers offer free demonstrations.[7] Turnitin.com met several of our needs: it is easy to use, it accepts papers in HTML format, and it allows for selected websites to be excluded from searches, a feature we needed so that the search did not simply match our students' papers to their own postings of their papers in their e-portfolios, which were publicly available webpages.

We used the same criteria described above for classifying text as plagiarized for both manual and automated methods of detection. We are reasonably confident that manual and automated methods detected copy-and-paste plagiarism in a similar fashion because all of the papers identified as containing plagiarism using manual methods also were detected using Turnitin.com. The automated reports generated by Turnitin.com calculate a percentage of copied text, but we did not use these measures in our determination of plagiarism.[8] Instead, we looked at each report and the text from original sources in side-by-side comparisons. This is because Turnitin.com cannot distinguish automatically between plagiarized text and properly cited direct quotations. Instructors must interpret the results documented in the reports, which can still be quite time-consuming. Nonetheless, Turnitin.com speeds up the process of finding copied text and finds it through more systematic searching than can be undertaken using manual methods.
Evaluating the impact of expectation management on plagiarism prevention

We consider communicating the principles of academic integrity to be one component of establishing high expectations in the classroom, a quality Chickering and Gamson (1987) associate with excellence in teaching. From the time our course was first offered, we directed students to properly cite source materials in their written assignments and provided a link to the College's website on academic integrity. After several offerings of our course, during which we

employed manual methods for detecting plagiarism, we noticed that a small percentage of our returning adult students sometimes violated standards of academic integrity in their written assignments, an issue we had not anticipated given their age and education levels. Students who plagiarized on the first assignment were given an explanation of their violation, including links to the sources from which they copied text without attribution. They were given a chance to revise and resubmit their papers for a new grade. They were not penalized because all students (who earned lower than an A) were given the opportunity to revise and resubmit Project 1 for re-grading, a standard practice for the course. For Project 3, students were not permitted to revise and resubmit, so students who plagiarized on the third assignment were penalized at least one letter grade depending on the number of instances of plagiarism within the assignment. In working with students to address the infractions on Project 1, we discovered that many were unfamiliar with standards for paraphrasing, quoting, and citing sources, and moreover, did not expect us to insist on these standards, despite our reference to university policies. We did not find any instances where students had clearly intended to cheat by handing in an assignment prepared by another student in a previous offering of the course. Therefore, our penalties were not as severe as those authorized by Penn State (College of EMS, 2002).

Because the reference to university policies alone did not prevent violations of academic integrity, we developed an expectation management strategy to better communicate our expectations with regard to plagiarism. We developed guidelines, customized to our course, for proper citation of text and graphic source material in student assignments.[9] In addition, we ensured that students adhere to those guidelines by requiring them to pass an academic integrity quiz to unlock instructions for project assignments.[10] The guidelines and quiz together constitute our expectation management strategy. Research linking carefully designed instruction about plagiarism to fewer infractions (Soto, Anand, and McGee, 2004) and to increased student recognition of the seriousness of infractions (Brown and Howell, 2001) supports the effectiveness of including such preventative strategies. We choose to test the effectiveness of the strategy by comparing plagiarism rates before and after its implementation.

Results

The use of an automated plagiarism detection service noticeably improved our ability to find and document instances of copy-and-paste plagiarism. The rate of plagiarism obtained using each method of detection is summarized in Table 2. Manual detection missed nearly 4 in 5 cases of plagiarism.

Table 2. Comparison of plagiarism rates

Detection method	Plagiarized assignments	Percent of total assignments plagiarized ($n = 429$)
Manual	12	2.8%
Automated	55	12.8%

Manual methods enabled detection of papers containing high levels of plagiarism, such as a paragraph copied word-for-word. Detection using Turnitin.com was more exact, uncovering instances where students copied just one sentence or several long phrases word-for-word.

Compared with manual methods, the Turnitin.com search engine proved to be more systematic in searching the Web and precise in matching assignment text to its original source.

While Turnitin.com increased our plagiarism detection abilities appreciably, the expectation management strategy only marginally reduced rates of plagiarism. We observed a 3.5 percent decrease after its implementation, but this improvement was not statistically significant (?2[1] = 1.148, p>0.05) (Table 3). We did not find any difference in the number of pre-quiz and post-quiz repeat offenders (students who plagiarized on both assignments) using Turnitin.com for detection. We did find, however, that of the five students caught (using manual detection methods) and penalized for using plagiarized material on the first assignment, none repeated the violation on the third assignment.

Table 3. Results of Chi-square test*

	Plagiarized	Non-plagiarized	Total	% of total plagiarized
Before quiz	27	155	182	14.8%
After quiz	28	219	247	11.3%
Total	55	374	429	12.8%

* The distribution is not significant $\chi^2[1] = 1.148$, p>0.05.

Discussion

Plagiarism Prevalence

Our finding of a 13 percent rate of plagiarism is in line with rates obtained from other studies that measured actual infractions (see Table 1 above). Given that previous studies quantified plagiarism among traditional undergraduate students, we also conclude that plagiarism rates among adult learners may not be lower than those for younger students. Additionally, our finding of a relatively low rate of plagiarism supports the notion that self-reported rates from survey questionnaires are likely to be higher than those obtained through actual detection of plagiarism (Crown and Spiller, 1998; Karlins, Michaels, and Podlogar, 1988). Instructors and researchers should heed the warnings of Crown and Spiller (1998) and make sure to account for the important bounding conditions of prevalence studies in their interpretation of rates.

Detection Method

The use of Turnitin.com improved our ability to detect cut-and-paste plagiarism measurably. While the automated process of checking papers was not necessarily faster than manual checking, it was certainly more thorough, enabling us to adhere and enforce to a stricter definition of plagiarism. We did not use Turnitin.com during the initial grading of these assignments, but we have incorporated its use into recent offerings of the course by making it part of the grading criteria presented to students. Braumoeller and Gaines (2001) found a benefit to informing students of the use of Turnitin.com prior to student submission of assignments. They suggest that actual checking for plagiarism using Turnitin.com followed by grade penalties for infractions serve as a deterrent to would-be plagiarizers in a way that verbal and written warnings do not.

While our findings lead us to conclude that plagiarism search engines are effective assessment tools, some questions remain about their robustness. Braumoeller and Gaines (2001) specifically tested the detection accuracy of EVE software with a test paper known to contain plagiarism by running the paper through the system three times. They found substantial variation in the rates of copied text reported with each search and documented instances where known plagiarized material was not detected. We did not test the robustness of Turnitin.com, but based on our experiences with false positives (see note 8), we agree with Braumoeller and Gaines's conclusion that the search engine should be used to facilitate further inspection of suspect papers. Nonetheless, we believe the automated methods to be superior to manual ones, at least for copy-and-paste forms of plagiarism.

Plagiarism Prevention

We did not see a significant reduction in plagiarism with the use of our expectation management strategy. Nonetheless, there was a small improvement in accordance with previous research that documents significant improvement (Soto, Anand, and McGee, 2004). We view expectation management as generally good practice, especially considering evidence that associates a lack of knowledge about plagiarism with higher rates of incidence (Soto, Anand, and McGee, 2004) and with student anxiety about committing offenses unintentionally (Ashworth, Bannister, and Thorne, 1997). By using an academic integrity quiz to assess student understanding, we go beyond basic written (or verbal) instruction, which by itself produces marginal, if any, deterrence to plagiarizing (Braumoeller and Gaines, 2001) and is not likely to provide the kind of instruction that furthers students' moral development.

We concede that our expectation management strategy does not provide students with a complete understanding of the dimensions of plagiarism nor a full appreciation of the role of proper citation in the development of knowledge and intellectual pursuit. Nonetheless, we do believe that the expectation management strategy combined with detection and enforcement using Turnitin.com emphasizes to students the importance of academic integrity and reinforces the values of institutions of higher education.

Conclusion

Educators are keenly interested in ways to assure the academic integrity of their students' work. This fact was highlighted for us while working with colleagues at Leeds University and the University of Southampton on a project concerned with developing e-learning resources for geographic education. Through the first three years of the project, the resource most eagerly shared among the project partners was the academic integrity guidelines and quiz described above. Revised versions of these resources are now provided to all students enrolled in the Schools of Geography at Leeds and Southampton. (The resources are freely available to other institutions on request.) Despite the limited impact of the guidelines and quiz on plagiarism rates revealed in this study, all three institutions plan to continue this effort to communicate our expectations about the proper use of reference materials published online. Like Braumoeller and Gaines (2001), however, we conclude that expectation management alone is no substitute for rigorous enforcement of academic integrity standards. Based on the research reported here and in previous studies, we are convinced that even the most vigilant grader is likely to overlook many, if not most, infractions. Consequently, we have revised our procedure for evaluating student projects in Geography 482 so that every project assignment is first checked for originality using

Turnitin.com (using the University's recently acquired site license). Assignments include warnings that Turnitin.com will be used to ensure that original sources are properly quoted, paraphrased, cited, and referenced. Originality reports are shared with students whose assignments contain academic integrity violations. As before, such students are invited to revise and resubmit the first two, but not the final, project. We expect that effective detection and enforcement will lead to a higher level of compliance with academic integrity standards in this introductory class, as well as in the classes that follow in our certificate and master's programs.

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References

Ashworth, P., Bannister, P., and Thorne, P. (1997). Guilty in Whose Eyes? University students' perceptions of cheating and plagiarism in academic work and assessment. *Studies in Higher Education 22*(2), 187 – 203.

Braumoeller, B. F., and Gaines, B. J. (2001). Actions do speak louder than words: Deterring plagiarism with the use of plagiarism detection software. *Political Science & Politics 34*(4), 835 – 839.

Brown, B. S. (1995). The Academic Ethics of Graduate Business Students: A survey. *Journal of Education for Business 70*(3), 151 – 156.

Brown, V. J., and Howell, M. E. (2001). The Efficacy of Policy Statements on Plagiarism: Do they change students' views? *Research in Higher Education 42*(1), 103 – 118.

Cabe, P. A. (n.d.) *Examples of Plagiarism: A taxonomy about plagiarism* (from TIPSters). Retrieved March 31, 2006 from: http://psych.skidmore.edu/plagiarism.htm

CAI Research. (2005). *Center for Academic Integrity.* Retrieved September 6, 2005 from: http://www.academicintegrity.org/cai_research.asp

Chickering, A. W., and Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *AAHE Bulletin 39*(7), 3 – 7.

College of Agricultural Sciences (CAS). (2005). *Academic Integrity. Penn State.* Retrieved April 13, 2006 from: http://academicintegrity.cas.psu.edu/

College of Earth and Mineral Sciences (EMS). (2002). *Academic integrity. Precedent tables. Penn State.* Retrieved September 10, 2005 from: http://www.ems.psu.edu/students/integrity/tables.html

Conradson, S., and Hernandez-Ramos, P. (2004). Computers, the Internet, and Cheating Among Secondary School Students: Some implications for educators. *Practical Assessment, Research and Evaluation 9*(9). Retrieved October 10, 2005 from: http://pareonline.net/getvn.asp?v=9&n=9

Crown, D. F., and Spiller, M. S. (1998). Learning from the Literature on Collegiate Cheating: A review of empirical research. *Journal of Business Ethics 17*(6), 683 – 700.

Dark, M. J., and Winstead, J. (2005). Using educational theory and moral psychology to inform the teaching of ethics in computing. *Information Security Curriculum Development Conference '05* on September 23-24, 2005 at Kennesaw, GA.: Association of Computing Machinery.

Ercegovac, Z., and Richardson, J. (2004). Academic Dishonesty, Plagiarism Included, in the Digital Age: A literature review. *College & Research Libraries 65*(4), 301 – 318.

Foster, A. L. (2002). Plagiarism-detection tool creates legal quandary. *Chronicle of Higher Education 48*(36), A37 – 38.

Groark, M., Oblinger, D., and Choa, M. (2001). Term Paper Mills, Anti-Plagiarism Tools, and Academic Integrity. *Educause Review*, 40 – 48. Retrieved September 24, 2005 from: http://www.educause.edu/ir/library/pdf/erm0153.pdf

Harris, R. (2004). Anti-plagiarism strategies for research papers. *VirtualSalt.* Retrieved October 10, 2005 from: http://www.virtualsalt.com/antiplag.htm

Heberling, M. (2002). Maintaining academic integrity in online education. *Online Journal of Distance Learning Administration 5*(1). Retrieved October 10, 2005 from: http://www.westga.edu/~distance/ojdla/spring51/heberling51.html

Hickman, J. N. (1998, March 23). Cybercheats: Term-paper shopping online. *The New Republic*, 14 – 6.

Hinman, L. M. (1999, November 15). Download your workload, offload your integrity. *Los Angeles Times*, 7.

Howard, R. M. (2003). Should educators use commercial services to combat plagiarism? *CQ Researcher 13*(32), 789. Retrieved April 13, 2006 from: http://www.cqpress.com/docs/Combating%20Plagiarism.pdf

Hunt, R. (2003) Let's hear it for internet plagiarism. *Bridges 2*(3). Retrieved April 5, 2006 from: http://www.usask.ca/tlc/bridges_journal/v2n3_nov_03/v2n3_internet_plagiarism.html

Karlins, M., Michaels, C., and Podlogar, S. (1988). An empirical investigation of actual cheating in a large sample of undergraduates. *Research in Higher Education 29*(4), 359 – 364.

Kohlberg. L., and Hersh, R. H. (1977). Moral Development: A review of the theory. *Theory Into Practice 16*(2), 53 – 59.

Lathrop, A., and Foss, K. (2000). *Student Cheating and Plagiarism in the Internet Era: A wake-up call.* Englewood, CO.: Libraries Unlimited.

Love, P. G., and Simmons, J. (1998). Factors influencing cheating and plagiarism among graduate students in a college of education. *College Student Journal 32*(4), 539 – 551.

Martin, B. (1994) Plagiarism: A misplaced emphasis. *Journal of Information Ethics 3*(2), 36 – 47. Retrieved April 13, 2006 from: http://www.uow.edu.au/arts/sts/bmartin/pubs/94jie.html

McCabe, D. L., and Pavela, G. (*n.d.*). Ten principles of academic integrity. *College Administration Publications*. Retrieved April 13, 2006 from: http://www.collegepubs.com/ref/10PrinAcaInteg.shtml

McCabe, D. L., and Trevino, L. K. (1996). What we know about cheating in college. *Change 28*(1), 28 – 34.

Penn State Information Technology Services (2005). *2005 FACAC student technology usage survey.* Retrieved September 24, 2005 from: http://tlt.its.psu.edu/surveys/spring2005/2005_Student_Survey.pdf

Penn State University Faculty Senate (2000). *Policies and Rules for Undergraduate Students: Academic integrity.* Retrieved March 31, 2006 from: http://www.psu.edu/ufs/policies/47-00.html#49-20

Princeton University (2003). *Academic integrity at Princeton.* Retrieved March 31, 2006 from: http://www.princeton.edu/pr/pub/integrity/index.html

Roberts, P., Anderson, J., and Yanish, P. (1997). *Academic Misconduct: Where do we start?* ERIC Document No: ED415781.

Quinn, M. J. (2006). *Ethics for the Information Age.* Boston, MA.: Pearson.

Saulnier, B. (2005). So tempting. *The Penn Stater 92*(4), 44 – 49.

Scanlon, P. M., and Neumann, D. R. (2002). Internet plagiarism among college students. *Journal of College Student Development 43*(3), 374 – 385.

Soto, J. G., Anand, S., and McGee, E. (2004, July/August). Plagiarism Avoidance: An empirical study examining teaching strategies. *Journal of College Science Teaching 33*(7), 42 – 48.

Tenbusch, J. P. (2002). Keeping students honest in the electronic age. *Scholastic Administrator website*. Retrieved October 10, 2005 from:
http://www.scholastic.com/administrator/spring02/features.asp?article=students

Underwood, J., and Szabo, A. (2003). Academic offences and e-learning: Individual propensities in cheating. *British Journal of Educational Technology 34*(4), 467 – 477.

Vernon, R., Bigna, S., and Smith, M. (2001). Plagiarism and the Web. *Journal of Social Work Education 37*(1), 193 – 196.

Whitley, B. (1998). Factors Associated with Cheating Among College Students: A review. *Research in Higher Education 39*(3), 235 – 274.

York University (2005). Senate policy on academic honesty. Retrieved March 31, 2006 from:
http://www.yorku.ca/univsec/policies/document.php?document=69

Endnotes

1. Scholars are debating the implications for intellectual-property rights of Turnitin.com's practice of keeping previously submitted student papers in its database (Foster, 2002).

2. Assignments were prepared by 261 students, several of whom did not complete both assignments.

3. Each course lasts 10 weeks.

4. For example, of the 73 students who introduced themselves (via threaded discussion) in the Fall 2003 offering of GEOG 482, 60 (82 percent) identified an employer. In Winter 2005 (when students were first surveyed formally about employment), 85 percent of students indicated that they worked more than 30 hours per week.

5. An analysis of program graduates through Summer 2002 indicated that 81 percent possessed baccalaureate degrees. The certificate program began to require baccalaureate degrees in 2004.

6. The specific definition of plagiarism used in the survey was not reported.

7. In summer 2004, we evaluated EVE2, Mydropbox.com, Plagiarism Finder, Scriptum, and Turnitin.com. All but Turnitin.com provided easily accessible, free examination versions or subscription trials of their products/services. Ironically, Turnitin.com discontinued offering free plagiarism detection for up to five papers from their website because of unethical behavior on the part of instructors! The company found that some instructors were abusing the system by registering multiple email addresses in order to evaluate papers for entire classes, five at a time. Turnitin.com will arrange for testing of their services on demand, which is what we did.

8. Our experience was similar to that of Braumoeller and Gaines (2001) who found that using the rates reported by detection software alone can be misleading. We checked all the assignments, not just those flagged with high percentages of matching text and interpreted the side-by-side comparisons of the student's submission and the flagged source material. Another reason that we checked each paper and not just flagged assignments was specific to the way we structured course assignments. For at least one of the two assignments checked, we provided a sample project online with example headings and citations and told the students that they could use this sample as a template for creating their webpages. Turnitin.com flagged text from the template and the

assignment instructions as copied text so we needed to eliminate these webpages from the system's searching procedures, which fortunately can be done using the "exclude and reanalyze" feature.

9. The guidelines can be retrieved from:
https://www.e-education.psu.edu/courses/geog482/policies.shtml#integrity

10. The academic integrity quiz can be retrieved from:
http://www.dialogplus.soton.ac.uk/aig/index.html

About the Authors

Christine L. Jocoy (cjocoy@csulb.edu) is an Assistant Professor of Geography at California State University, Long Beach. She received her PhD from Penn State in 2004. Her research interests include regional economic development, urban social policy, and geography education.

David DiBiase (dibiase@psu.edu) directs the John A. Dutton e-Education Institute within the College of Earth and Mineral Sciences at Penn State. His research interests include faculty workload and student engagement in e-learning, geographic information science education, academic certification, accreditation, and articulation, and reusable learning object design.

Athabasca University

Online Graduate Study of Health Care Learners' Perceptions of Instructional Immediacy

Sherri Melrose and **Kim Bergeron**
Centre for Nursing and Health Studies
Athabasca University - Canada's Open University

Abstract

Instructional immediacy is an established communication strategy that teachers can implement to create engaging learning environments. Yet, little is known about experiences distance education learners in graduate study programs have had with immediacy. This article presents findings from a qualitative research project designed to explore healthcare students' ideas about and activities related to instructional immediacy behaviors within a masters program offered exclusively through a *WebCT* online environment. A constructivist theoretical perspective and an action research approach framed the study. Data sources included two focus groups and 10 individual audio-tape recorded transcribed interviews. Content was analyzed by both the primary researcher and an assistant for themes and confirmed through ongoing member checking with participants. The following three overarching themes were identified and are used to explain and describe significant features of instructional immediacy behaviors that healthcare learners who graduated from either a Master of Nursing or Master of Health Studies distance education program found valuable: 1) Model engaging and personal ways of connecting; 2) Maintain collegial relationships; and 3) Honor individual learning accomplishments.

Keywords: immediacy; online graduate study; healthcare learners

Introduction

This article describes findings from a qualitative research project that investigated the experiences, reflections, and feelings of online healthcare students during times in their graduate study program where they experienced or would have valued experiencing instructional immediacy. While the main purpose of the project was to explore learners' ideas about instructional immediacy, a secondary purpose was to consider instructional strategies that respond to learner needs. The research was guided by the question: *What specific instructional immediacy strategies do online graduate healthcare learners perceive as helpful in creating a warm environment rich in social presence and sense of community?*

Participants in the study were graduates of either the Master of Nursing (MN) or Master of Health Studies (MHST) programs offered through the Centre for Nursing and Health Studies at Athabasca University – Canada's Open University. While students enrolled in the MN program hold undergraduate degrees in nursing, those in the MHST program come from nursing, physiotherapy, occupational health, dietetics, medicine and other healthcare disciplines. Both male and female students are enrolled in these graduate study programs and are required to have practiced in their field for at least two years. Graduates of the 2005 class were predominantly women and lived all across Canada as well as in a variety of other countries.

Course work in the MN and MHST programs is completed exclusively online using a *WebCT* course management system, therefore convocation ceremonies at the university campus were the first opportunity for students in these programs to meet their classmates and instructors. Data for the present research was gathered during these ceremonies.

The primary medium for communication, instruction and assessment within the MN and MHST programs is asynchronous text-based threaded discussions within a *WebCT* environment. In most courses, cohorts of approximately 20 students led by one instructor progress through a study guide identifying a series of readings, discussion questions, and learning activities during a 14 week time frame.

Literature Review

A literature review revealed that educators have consistently recognized the link between teachers who demonstrate warm friendly behaviors and the creation of welcoming interactive learning environments. One valuable instructional communication strategy that facilitates a sense of community and fosters a learning climate rich in social presence is immediacy. Considerable research has been undertaken to investigate instructional immediacy behaviors and their effect on students in a variety of different learning events. There is a "gap," however, in our understanding of how online graduate healthcare learners perceive instructional immediacy within their learning experiences.

The Construct of Immediacy

Immediacy is defined as an affective expression of emotional attachment or closeness to another person and was originally developed by social psychologist Albert Mehrabian in the 1960s (Mehrabian, 1967; 1971; Wiener and Mehrabian, 1968). The construct of immediacy is founded on the premise that individuals are drawn toward persons and things they like, evaluate highly and prefer. Expressions of immediacy include both verbal and non verbal behavioral cues. A "we" or "our" statement communicates immediacy while a "you" or "your" statement does not. Subtle variations in language indicate different degrees of separation or non-identity of speakers from the object of their communication.

Immediacy in Higher Education

Educational research examining the process of adapting the construct of immediacy from communication theory to applications in higher education classroom environments has proliferated over the past few decades. Building on Mehrabian's work, Andersen (1979) introduced the concept of instructor nonverbal immediacy in the college classroom. Andersen explained that immediacy is a nonverbal manifestation of high affect and is demonstrated through

maintaining eye contact, leaning closer, touching, smiling, maintaining a relaxed body posture, and attending to voice inflection. Furthering our understanding of the verbal component of the construct, Gorham (1988) identified that using personal examples, engaging in humor, asking questions, initiating conversations with students, addressing students by name, praising student work, and encouraging student expression of opinions are also all examples of instructional immediacy. Links between teacher immediacy, student motivation and affective learning have been examined (Christophel, 1990; Christophel and Gorham, 1995).

In online classroom environments, despite limited or absent non verbal visual cues, knowledge of instructional immediacy continues to develop. In a meta-analysis of 35 studies examining the relationship between teacher immediacy and cognitive learning, Hess and Smythe (2001) asserted that while most research offers only moderate correlations between immediacy and cognitive learning, the experience of liking and feeling close to the instructor led to positive effects in the classroom. Baker (2004) later further affirmed the correlation between immediacy and affective learning. Russo and Benson (2005) determined that perceptions of the instructor's presence were significantly correlated with both affective learning and with student learning satisfaction, an outcome in an online class that is consistent with findings on teacher immediacy literature in traditional classes. These findings all underscore the role of the teacher in establishing an engaging learning environment.

Arbaugh (2001) concluded that instructor immediacy behaviors were significantly associated with student learning and satisfaction in Web-based Masters of Business Administration (MBA) courses. He suggested that teachers who readily used verbally immediate behaviors in face-to-face classrooms could translate the strategies to an online format. In group discussions, he emphasized the importance of instructor's use of personal examples, humor, openness, and encouragement of student ideas. In individual discussion, he emphasized the importance of prompt responses and addressing students by name. Hutchins (2003) posited that instructor success with immediacy behaviors could advance the current theoretical framework for enhancing instructional effectiveness in distance education. Woods and Baker (2004) suggested that instructors can positively affect the quality of communication in the online environment when they move from mere interaction to authentic immediacy and interpersonal closeness.

Immediacy, Social Presence, and a Sense of Community

Instructional immediacy impacts social presence, which in turn, can strengthen the sense of community within learning experiences. Social psychologists Short, Williams and Christie (1976) defined social presence as the degree of salience within interpersonal relationships in mediated communication. Salience implies feelings of presence, engagement, affection, inclusion, and involvement. In essence, social presence is the degree to which a person is perceived as a "real person" in mediated communication. Short and colleagues measured social presence with a series of bipolar scales, sociable-unsociable, personal-impersonal, sensitive-insensitive, and warm-cold. A higher level of presence in a medium confers the attributes of being more sociable, more personal, more sensitive, and warmer.

Scholars in online education have investigated social presence extensively and it is beyond the scope to this article to elaborate on this comprehensive body of work. However, given the established associations among instructional immediacy, social presence and sense of community, a brief snapshot of seminal studies are identified. Within these associations, it is critical to distinguish that, from a constructivist framework, while teachers are responsible for the instructional immediacy behaviors that can set the stage for affective communication, both

teachers and learners are responsible for behaviors that contribute to social presence and a sense of community.

According to Gunawardena (1995), immediacy increases social presence and thus enhances the degree to which a person is perceived as 'real'. Rourke, Anderson, Garrison, and Archer (2001) defined social presence as the ability of learners to project themselves socially and affectively into a community of inquiry. Social presence has been found to be related to students' perceived learning and satisfaction (Gunawardena and Zittte, 1997; Richardson and Swan, 2003), persistence with their courses (Rovai, 2002), more complex discussion postings (Polhemus, Shih and Swan, 2001) and a significant factor in improving instructional effectiveness (Tu, 2002).

The complexities of establishing a sense of community among online learners has also been studied extensively. Social presence, with its underpinnings of immediacy, is considered a key element in establishing strong communities of inquiring and connected learners. Anderson (2004), referring to Garrison Anderson, and Archer's (2000) community of inquiry model, explained that social presence relates to the establishment of a supportive environment "such that students feel the necessary degree of comfort and safety to express their ideas in a collaborative context. The absence of social presence leads to an inability to express disagreements, share viewpoints, explore differences, and accept support and confirmation from peers and teacher" (p.274).

Current research has begun to explore the role of networked based learning tools designed to support interaction and social presence. Anderson (2005) discussed how these tools, known as educational social software (ESS), may be able to resolve students' conflicts between the freedom to pace their own learning and yet still work cooperatively with other students. Newer educational ESS tools are cost effective and offer students opportunities to connect with one another beyond the traditional methods of email and conferencing. In designing these tools, Anderson (2005) noted the importance of including mechanisms for students to make their presence online known, to notify them that new content or communication has been entered in to a learning space, to have systems that filter out illegitimate information, to refer them to activities where others are engaged, to model profiles that reflect individual learners, to facilitate introducing learners to one another, to promote helping others and to document and share constructed objects. At Athabasca University, Anderson (2005) has initiated research examining one social software tool set, the ELGG open source software.

Finally, Woods and Ebersole (2003) asserted that strong connections exist between a positive social dynamic and learning, but that creating that dynamic doesn't 'just happen,' rather, it must be intentionally created through a variety of communication cues. Likewise Aragon (2003) urged educators not to take social presence for granted and ensure that strategies promoting relationship development are built in to online course design and instruction.

Health Care Learners Valuing of Closeness

Although the constructs of instructional immediacy and social presence may not be identified specifically in research examining healthcare learners' experiences with online courses, a scan of current studies does suggest that a feeling of closeness and community is desired and valued. In their seminal work benchmarking best practices in Web-based nursing courses, Billings, Connors and Skiba (2001) identified an expectation that connectedness, where students and faculty form an online learning community that overcomes isolation, is present. Further, in her overview of best practices in online clinical content courses, Herie (2004) emphasized the crucial importance

of establishing a climate of psychological safety where learners feel supported by their instructor and peers. Diekelmann and Mendias (2005) discussed the importance of teachers being a supportive presence in online courses by knowing and connecting with students through writing.

In continuing education, an exploration of Canadian nurses' experiences with Web-based learning through surveys and focus group interviews noted nurses' appreciation of interactions with one another and their teachers in the forum and found these connections "sustained them" (Atack and Rankin,2002, p. 20).

In undergraduate education, a comparative analysis of different instructional communications methods online found significant group differences in satisfaction when carefully planned communication strategies were implemented (Frith and Kee, 2003). Also, in their work with second degree students comparing web-based and traditional course delivery methods, Kearns, Shoaf and Summey (2004) identified that students in the traditional course were more satisfied. A key contributor to students' dissatisfaction with their online course was the untimeliness of instructor feedback. These students " . . . expressed a strong sense of uncertainty about progressing with remaining coursework due to feedback delays" (Kearns, Shoaf and Summey, 2004, p.283).

In graduate education, a pre-test/ post-test survey of perceptions and preferences highlighted specific needs for adequate socialization and instructional support (Wills and Stommel, 2002). Similarly, in doctoral education, case study reports illustrated how helpful teachers' welcoming practices such as sending personal email were in reducing anxiety (Diekelmann and Gunn, 2004).

The Research Approach

This project was framed from a constructivist theoretical perspective (Appleton and King, 2002; Peters, 2000) and a naturalistic action research design (Altrichter, Posch and Somekh, 1998; Corey, 1949; Kemmis and McTaggart, 1990; Stringer and Genat, 2004). Data sources included two focus groups and ten audio tape-recorded transcribed interviews with graduates who attended Convocation ceremonies at Athabasca University campus. Content from these data sources were analyzed by both the primary researcher and an assistant. The transcripts were thoroughly read and re-read and a systematic process of content analysis was developed (Loiselle et al., 2004) to create the categorization and coding scheme that led to the themes. Pseudonyms were used when participants' comments are reported verbatim. Trustworthiness was established through ongoing interaction and member checking with participants to ensure authenticity. Full ethical approval was granted by the university.

Naturalistic Action Research

Action research is a reflective, spiral process where teachers use research techniques to examine their own educational practice carefully, systematically and with the intention of applying their findings directly to their own and other educators' every day practice. Kemmis and McTaggart (1988) offered the seminal explanation that action research is deliberate, solution-oriented investigation that is group or personally owned and conducted. It is characterized by spiraling cycles of problem identification, systematic data collection, reflection, analysis, data-driven action taken, and, finally, problem redefinition. The linking of the terms "action" and "research" highlights the essential features of this method: trying out ideas in practice as a means of increasing knowledge about or improving curriculum, teaching, and learning (Kemmis and McTaggart, 1988). Kemmis and McTaggart (1990) also suggested that the participatory nature of

action research, where researchers collaborate with participants in order to understand and improve educational events, can reduce the distance between researchers and participants and the ". . . problems they intend to solve, or the lived experience they intend to interpret" (p. 28).

Naturalistic research reflects a qualitative approach. As Ferrance (2000) explained: "The idea of using research in a 'natural' setting to change the way that the researcher interacts with that setting can be traced back to Kurt Lewin, a social psychologist and educator whose work on action research was developed throughout the 1940s in the United States. "Lewin is credited with coining the term 'action research' to describe work that did not separate the investigation from the action needed to solve the problem " (as cited in McFarland and Stansell, 1993, p. 14) . . . ." (p. 7)

In the 1940s and 1950s, at Teachers College at Columbia University, Steven Corey (1949) was one of the first to advocate action research approaches in the field of education. In Corey's view, action research was different from the existing quantitative paradigm focusing on findings that could be generalized to ". . . uniformities, explanatory principles or scientific laws" (p. 63). Rather, Corey stated "The action researcher is interested in the improvement of the educational practices in which he [sic] is engaging. He undertakes research in order to find out how to do his job better – action research means research that affects actions" (p. 63). In his view, action research was valued more for the change it can initiate in everyday practice than for a quantitative goal of generalizing the findings to a broader audience.

In their text Teachers Investigate Their Work: An Introduction to the Methods of Action Research, Altrichter, Posch and Somekh (1998) identified that interviewing students is an effective method of data collection and that developing categories and coding data is an effective method of data analysis within an action research approach. In healthcare, Stringer and Genat (2004) call for health professionals to engage in action research to ". . . seek practical solutions to problems in particular contexts . . . to engage participants in inquiry and enable the most effective use of knowledge available" (p. iv).

The following three themes emerged from analyzing the interview and focus group data collected from and confirmed with students who successfully completed their graduate studies online. The themes represent students' perceptions of key areas of instructional behaviors that demonstrate immediacy online. The first theme was to model engaging and personal ways of connecting. The second theme was to maintain collegial relationships. The third theme was to honor individual learning accomplishments.

Theme One: Model Engaging and Personal Ways of Connecting

Without exception, participants in this project all commented on how instructor communication that was appropriately personal in nature demonstrated immediacy and engaged them. When teachers introduced themselves at the beginning of a course by mentioning their family life as well as their work life, participants discussed how this modeled a meaningful way of relating within the course.

It is not unexpected that learners who have actively practiced in a healthcare discipline and who may demonstrate strong immediacy themselves would value having the skill modeled in an online setting. In traditional healthcare learning events, facilitators who begin classes by reaching out to participants individually, who share aspects of their own experiences and who use words that project gentle encouragement are well received.

Despite an absence of non verbal immediacy cues, similarities exist when adapting this established process of engagement to online classrooms. At the beginning of the course, an instructional strategy such as sending a private email welcoming each participant can communicate interest in learners as individuals. As Marg explained: "I had this wonderfully warm email introduction . . . before the course even started . . . [from an instructor who] just made me feel that she knew who I was and that she was looking forward to having me as part of her course. She gave a little synopsis of the course in a friendly and informal way, which made me have a sense that I would really enjoy the course. It was so welcoming – you just felt as if you really belonged."

Similarly, Lana described her response to a private email she received: [The instructor said] "Welcome Lana, nice to have you from Toronto, you bring a lot to us because of your focus and where you work." Small thing . . . but [the instructor] recognized and read [my introduction]. Just a general 'welcome to the class' isn't nearly as personal."

From the students' perspective, a key indication of immediacy was communicated in an instructor's first introductory posting. In Carol's words: "As a teacher, I would suggest that you talk about yourself, a little about the human aspects of you as a person . . . it just makes it more personable than artificial." Linda added: "The teachers that took time to introduce themselves and talk about their interests . . . 'I have a dog,' 'I live here' and established humanness really made a difference. And Claire continued: "The instructors I felt comfortable with set the stage [in their introductions] about who they were. That was very important to me to have a sense of who they were, their family, where they graduated from, what their work experience was, what their day was like, that sort of thing."

Further, including pictures in an introductory message was particularly important. Ella commented: "My first instructor posted a picture of herself, which I appreciated. This was actually a real person at the end of the line, somebody we could really connect with." Bonnie noted how the inclusion of pictures could be further personalized: "One of the instructors did a profile of everybody. [She collected] pictures and information about everyone in the class and gave us a document.

Addressing students by name communicated genuine interest. Rainu, whose first language was not English, stated: "For people like me, not from Canada, I was glad when instructors attempted to learn my name and use it." English speaking students concurred that seeing their names written out personalized communication as well.

Enhancing more formal course content messages with inspirational or humorous sayings also modeled immediacy and strengthened social presence. Karen observed: "One example of how an instructor showed caring . . . she gave a lot of herself in the course . . . was an idea about how you might reach out to others with an 'appreciagram'. She made a little email card with a picture patting someone on the back that says 'I appreciate.' Her name was on the bottom and then she wrote feedback to me on it. I developed one for my work and started using it. I asked my staff to put these cards at each of their sites and they can do the same thing." Similarly, participants in the focus groups discussed how postings that included poems, metaphors and tasteful humor helped create a safe welcoming environment where they felt willing to take risks.

Theme Two: Maintain Collegial Relationships

A striking feature of the present project was the value learners placed on language that reflected immediacy. Examples of instructors' words that stood out for participants included invitations to join, to journey with, to learn together, to enjoy, to care and to appreciate. Responses that were valued included: this is a thoughtful, helpful or useful comment; it ties in with . . . , how you feel about . . . and thank you for sharing. And, rather than noting what students "should" have done, guiding questions such as have you thought of . . . , might you consider . . . or how could you explore . . . were appreciated.

Prompt responses clearly contributed to students' perceptions that their instructors were present, accessible and immediate. Emily explained: "Getting emails answered promptly from the professors, that was wonderful. . . . Having confirmation that papers I submitted were received right away. Knowing where the instructors were, if they were out of town at a conference and couldn't get back to you right away, that promoted collegiality, I could respect their time." Kristin added: "I felt like I wasn't just a student at a computer. My instructors were always there. They allowed you to ask questions, no matter how silly they sounded. The more you could question the more connected you felt. With the best professors, you felt heard and that it mattered to them that you were there and that what you were contributing was useful."

By contrast, delayed responses and limited postings communicated disinterest. John clarified: "There were some instructors who were quite invisible. You didn't see them. Some of them said that right at the beginning that this was their style and that they would stand back unless they were asked questions. That behavior, right away, I felt they were not interested or they could not be bothered."

Encouraging social conversations in 'coffee room' forums rather than in course content areas stimulated social presence. Time and again, the adult learners in the present research expressed difficulty balancing the volume of reading required in graduate courses with their home and work demands. While the support from classmates for life events such as family births or deaths, achievements and challenges were all welcome conversations, being able to distinguish between academic and social messages was useful.

Maintaining teacher-student communication through private email further strengthened collegiality. Instructors who 'checked in' with students individually projected immediacy. Lynn's reflections described one instructional strategy that stood out for her. "The one thing I remember about the course wasn't the content of the material; it was the instructor saying 'tell me what you do to keep yourself healthy – what is your wellness plan?' So, an interest in me outside of my academia and wanting to actually make me a better person really stuck in my head." Other participants spoke about feeling connected with instructors who asked them: "So, how are you? Are you doing OK? Is the course too overwhelming? I'm feeling that you are struggling here?"

Theme Three: Honor Individual Learning Accomplishments

Private emails that acknowledged strengths and offered constructive feedback on student work inspired social presence. While public acknowledgement of accomplishments was discussed in the research interviews, several participants commented that: "If you don't get mentioned – you think what's wrong with my work?" Students' clear appreciation of detailed feedback is reflected in comments such as: "A lot of us can take the negative feedback, but if it is not constructive –

how is it going to help us?" . . . "The teachers who gave you feedback instead of just a mark. . . " The ones who would do 'track changes' on your assignments . . . " "When they directed you and said you did this well and this is where you can improve. . . " "When someone takes the time to really explain how you can do something better, to me – that's caring!"

Responding to individual learning concerns and offering different perspectives also communicated immediacy. In response to Betty's ". . . thinking I should be making 90% or above at least in all my courses," her advisor helped her "focus, get back on track and remember that this is education and learning – not just achieving high marks."

Similarly, responding by offering resources specific to individual student projects fostered immediacy. Mai-Ling valued: "When an instructor would say – 'I've read an article about that in such and such a spot, you might acknowledge it' or 'have you heard of this book' – sharing resources like that lent a good feeling."

Adapting course requirements when life crisis's emerged for students was also perceived as instructional immediacy. During discussions of instances when they were granted extensions to attend to family or work situations, participants frequently mentioned how instructors "understood" their personal needs during these difficult times.

Discussion

The aforementioned three themes, developed from discussions with students who successfully completed their graduate degrees exclusively through a *WebCT* online course management system, begin to illustrate the kinds of instructional immediacy behaviors that this group of learners' value. Listening attentively as students discussed their experiences and memories revealed useful ways of looking at how to create possibilities for learning environments rich in immediacy and social presence.

Specific instructional strategies that were important to students included modeling engaging and personal ways of connecting, maintaining collegial relationships and honoring individual learning accomplishments. These findings are consistent with Arbaugh's (2001) work with MBA students. They provide support to Woods and Baker's (2004) call to create more opportunities for authentic immediacy within online instruction. And, the idea of intentionally using verbal cues to project warmth, sensitivity and sociability is not significantly different from the ideas about immediacy first identified by Albert Mehrabian in the 1960s.

However, some of the strategies that stood out for this group of professional graduate level learners are unique. Posting self-introductions that include pictures and personal information about home and work, particularly at the beginning of the learning event, can be expected to communicate immediacy. Creating a document with biographical information about all members of the class can be helpful in developing a sense of community within the class group. Initiating private emails to learners can express personal interest. Responding promptly can indicate that an instructor is consistently present and available. Including affective learning elements such as poems, metaphors and tasteful humor in forum postings can strengthen social presence. Ensuring that social conversations, while enjoyable, do not dominate or distract can project respect for learners' limited time. As well, writing individuals' names, choosing words with gentle connotations and responding empathically to students' expressions of their individual needs can be well received. Therefore, instructors who risk implementing these kinds of online teaching approaches may be perceived as likeable and friendly.

The present investigation suggests expanding our ideas about facilitating learning with online graduate learners to include acknowledging the importance of establishing personal and collegial connections among students and teachers. In turn, this acknowledgment can guide us toward a deeper understanding of how best to model and respond with immediacy and to encourage meaningful social presence within online learning environments. Knowing how much online graduate learners value immediate instructors leads us to look for ways to demonstrate warm and inviting behaviors in our virtual classrooms. Affirmations of the value of instructors' willingness to share their personal experiences, to remain involved in discussions and to honor each student in unique ways inspires us to pay careful attention to these activities.

Conclusion

This article presented findings from a naturalistic action research study that explored online graduate students' perceptions of specific instructional immediacy strategies that helped create a warm environment rich in social presence and a sense of community within a *WebCT* course management system. In contrast to other studies that explored the construct of immediacy, this project extends existing understanding of instructional immediacy by describing professional healthcare workers' reflections on their own experiences during their masters program by identifying three overarching themes. This research found that learners especially valued instructors who modeled engaging and personal ways of connecting, who maintained collegial relationships and who honored individual learning accomplishments. The article calls for the creation of more opportunities to understand how students themselves perceive immediacy and social presence and for continued attention to constructing teaching strategies that respond to and collaborate with students in innovative and genuinely friendly ways.

References

Altrichter, H., Posch, P., and Somekh, B. (1998). *Teachers Investigate Their Work: An introduction to the methods of action research.* New York: Routledge.

Andersen, J. F. (1979). Teacher immediacy as a predictor of teaching effectiveness. *Communication Yearbook, 3*, 543 – 559.

Anderson, T. (2004). Teaching in an online learning context. In T. Anderson & F. Elloumi (Eds.) *Theory and practice of online learning* (p. 273-294). Athabasca, AB.: Athabasca University Press. Retrieved December 17, 2005 from: http://cde.athabascau.ca/online_book/

Anderson, T. (2005). Distance Learning – Social software's killer ap? Paper presented at the *2005 ODLAA Conference* held at the University of South Australia, November. Retrieved April 27, 2006 from: http://www.unisa.edu.au/odlaaconference/PPDF2s/13%20odlaa%20-%20Anderson.pdf

Appleton, J. J. V., and King, L. (2002). Journeying from the philosophical contemplation of constructivism to the methodological pragmatics of health services research. *Journal of Advanced Nursing 40*(6), 641 – 648.

Aragon, S. R. (2003). Creating social presence in online environments. In *New Directions for Adult and Continuing Education 100* (p. 57-68). San Francisco: Jossey-Bass.

Arbaugh, J. B. (2001). How instructor immediacy behaviors affect student satisfaction and learning in Web-based courses. *Business Communication Quarterly 64*(4), 42 – 54.

Atack, L., and Rankin, J. (2002). Nurses' experiences with Web-based learning. *The Canadian Nurse 98*(7), 18 – 22.

Baker, J. D. (2004). An investigation of relationships among instructor immediacy and affective and cognitive learning in the online classroom. *Internet and Higher Education 7*, 1 – 13.

Billings, D., Connors, H., and Skiba, D. (2001). Benchmarking best practices in Web-based nursing courses. Advances in *Nursing Science 23*(3), 41 – 53.

Christophel, D. M. (1990). The relationship among teacher immediacy behaviors, student motivation, and learning. *Communication Education 39*(4), 323 – 340.

Christophel, D. M., and Gorham, J. (1995). A test-retest analysis of student motivation, teacher immediacy, and perceived sources of motivation and demotivation in college classes. *Communication Education 44*, 292 – 306.

Corey, S. (1949). Action research, fundamental research and educational practices. *Teachers College Record 50*, 509 – 14.

Diekelmann, N., and Mendias, E. (2005). Being a supportive presence in online courses: Knowing and connecting with students through writing. *Journal of Nursing Education 44*(8), 344 – 346.

Diekelmann, N., and Gunn, J. (2004). Teachers going back to school: being a student again. *Journal of Nursing Education 43*(7), 293-296.

Ferrance, E. (2000). *Action research.* Northeast and Islands Regional Educational Laboratory. Brown University: Providence RI. Retrieved on December 17, 2005 from: http://www.alliance.brown.edu/pubs/themes_ed/act_research.pdf

Frith, K., and Kee, C. (2003). The effect of communication on nursing student outcomes in a web-based course. *Journal of Nursing Education 42*(8), 350 – 358.

Garrison, R., Anderson, T., and Archer, W. (2000). Critical Inquiry in a Text-based Environment: Computer conferencing in higher education, retrieved on December 17, 2005 from: http://communitiesofinquiry.com/documents/CTinTextEnvFinal.pdf

Gorham, J. (1988). The relationship between verbal teacher immediacy behaviors and student learning. *Communication Education 37*(1), 40 – 53.

Gunawardena, C. N. (1995). Social presence theory and implications for interaction and collaborative

learning in computer conferences. *International Journal of Educational Telecommunications 1*, 147 – 166.

Gunawardena, C. N., and Zittte, F. J. (1997). Social presence as a predictor of satisfaction within a computer-mediated conferencing environment. *American Journal of Distance Education 13*(3), 8 – 26.

Herie, M. (2004). Online teaching and learning. *International Journal of Mental Health and Addiction 2*(1), 22 – 28. Retrieved December 17, 2005 from: http://www.ecommunity-journal.com/content/full/2/1/4

Hess, J. A., and Smythe, M. J. (2001, Fall). Is teacher immediacy actually related to student cognitive learning? *Communication Studies.* Retrieved December 17, 2005 from: http://www.findarticles.com/p/articles/mi_qa3669/is_200110/ai_n8997667

Hutchins, H. M. (2003). Instructional Immediacy and the Seven Principles: Strategies for facilitating online courses. *Online Journal of Distance Learning Administration 6*(3). Retrieved December 17, 2005 from: http://www.westga.edu/~distance/ojdla/fall63/hutchins63.html

Kearns, L., Shoaf, J., and Summey, M. (2004). Performance and satisfaction of second-degree BSN students in web-based and traditional course delivery environments. *Journal of Nursing Education 43*(6), 280 – 285.

Kemmis, S., and McTaggart, R. (1990). *The action research reader* (3 ed.). Victoria, Australia: Deacon University Press.

Kemmis, S., and McTaggart, R. (1988). *The action research planner* (3rd ed.). Victoria, Australia: Deakin University Press.

Loiselle, C., Profetto-McGrath, J., Polit, D. and Beck, C. (2004). *Canadian essentials of nursing research.* Philadelphia, PA.: Lippincott, Williams and Wilkins.

McFarland, K. P., and Stansell, J. C. (1993). Historical perspectives. In L. Patterson, C. M. Santa, C.G. Short, and K. Smith (Eds.) *Teachers are Researchers: Reflection and action.* Newark, DE.: International Reading Association.

Mehrabian, A. (1967). Attitudes inferred from nonimmediacy of verbal communication. *Journal of Verbal Learning and Verbal Behavior 6*, 294 – 295.

Mehrabian, A. (1971). *Silent Messages.* Belmont, CA.: Wadsworth.

Peters, M. (2000). Does constructivist epistemology have a place in nurse education? *Journal of Nursing Education 39*(4), 166 – 173.

Polhemus, L., Shih, L. F., and Swan, K. (2001). *Virtual Interactivity: The representation of social presence in an online discussion.* Paper presented at the annual meeting of the American Educational Research Association, April. Seattle, WA.

Richardson, J. C., and Swan, K. (2003). Examining social presence in online course in relation to students' perceived learning and satisfaction. *Journal of Asynchronous Learning Networks 7*(1). Retrieved December 17, 2005 from: http://www.sloan-c.org/publications/jaln/v7n1/v7n1_richardson.asp

Rourke, L., Anderson, T., Garrison, D., and Archer, W. (2001). Assessing social presence in asynchronous
text-based computer conferencing. *Journal of Distance Education 14*(2). Retrieved December 17, 2005 from: http://cade.athabascau.ca/vol14.2/rourke_et_al.html

Rovai, A. (2002). Building Sense of Community at a Distance. *International Review of Research in Open and Distance Learning 3*(1). Retrieved December 17, 2005 from: http://www.irrodl.org/content/v3.1/rovai.html

Russo, T., and Benson, S. (2005). Learning with invisible others: Perceptions of online presence and their relationship to cognitive and affective learning. *Educational Technology & Society 8*(1), 54 – 62. Retrieved December 17, 2005, from: http://www.ifets.info/journals/8_1/8.pdf

Short, J., Williams, E., and Christie, B. (1976). *The social psychology of telecommunications.* London: John Wiley & Sons.

Stringer, E., and Genat, W. (2004). *Action research in health.* Upper Saddle River, NJ.: Pearson Prentice Hall.

Tu, C. H. (2002). The Measurement of social presence in an online learning environment. *International Journal on E-Learning 1*(2), 34 – 45. Retrieved December 17, 2005 from: http://www.aace.org/dl/files/IJEL/IJEL1234.pdf

Wiener, M. and Mehrabian, A. (1968). *Language Within Language: Immediacy, a channel in verbal communication.* New York: Appleton-Century-Crofts.

Wills, C. E., and Stommel, M. (2002). Graduate nursing students' pre- and post-course perceptions and preferences concerning fully Web-based courses. *Journal of Nursing Education 40*(5), 193 – 201.

Woods, R. H., and Baker, J. D. (2004). Interaction and immediacy in online learning. *International Review of Research in Open and Distance Learning 5*(2). Retrieved December 17, 2005 from: http://www.irrodl.org/content/v5.2/woods-baker.html

Woods, R.H., and Ebersole, S. (2003). Becoming a "Communal Architect" in the online classroom – Integrating cognitive and affective learning for maximum effect in Web-based learning. *Online Journal of Distance Learning Administration 6*(1). Retrieved December 17, 2005 from: http://www.westga.edu/~distance/ojdla/spring61/woods61.htm

Athabasca University

Attitudes and Perceptions of Students to Open and Distance Learning in Nigeria

David Olugbenga Ojo and **Felix Kayode Olakulehin**
National Open University of Nigeria

Abstract

In the West African Region of Africa, the National Open University of Nigeria (NOUN) is the first full fledged university that operates in an exclusively open and distance learning (ODL) mode of education. NOUN focuses mainly on open and distance teaching and learning system, and delivers its courses materials via print in conjunction with information and communication technology (ICT), when applicable. This 'single mode' of open education is different from the integration of distance learning system into the face- to- face teaching and learning system, which is more typical of conventional Universities in Nigeria and other parts of the world. Thus, NOUN reflects a novel development in the provision of higher education in Nigeria. This study assesses the attitudes and perceptions of distance teaching and learning by students enrolled in the NOUN and of the National Teachers' Institute (NTI) compared to their experiences at conventional universities. One hundred and twenty ($n = 120$) randomly selected NOUN and NTI students of NOUN were the subjects of the study. The Students' Attitude and Perception Rating of Open and Distance Learning Institutions Inventory (SAPRODLII), developed by the researchers, was administered to the subjects to measure their attitudes and experiences. Results of the study showed that students generally hold a positive perception and attitude towards ODL, compared to traditional forms of higher education.

Keywords: perception; attitude; flexibility; self-directed learning; conventional institution; learners

Introduction

Since the colonial period, correspondence colleges from the United Kingdom have provided intermediate and advanced level training to a number of suitably qualified Nigerians via correspondence courses (Owoeye, 2004). Being the only method of distance education available at the time, a large number of secretarial, commercial, and middle level administrators were trained using this mode of education. Many early nationalist leaders in Nigeria were also trained through this modality before they had the opportunity to travel to the United Kingdom to further their education (Adesina, 1988). Training was later extended to the preparation of students for the General Certificate Examinations – Ordinary and Advance levels – by notable institutions such as the Rapid Results College, Wolsey College, as well as Cambridge University and University of London (Owoeye, 2004). Delivery from foreign providers stopped, however, when Nigeria assumed full independence. At this time, internal developments have begun in many sectors of the Nigeria economy, including education.

The dynamics of globalization, plus the introduction of information and communication technologies (ICT) resulted in a tidal wave of information that has, in many cases, overwhelmed many countries around the world. This has resulted in radical changes in the educational needs of individuals and society at large, a phenomena that is reflected in the emerging need for additional specializations in learning. Because the world of work is more complex and fluid, newer approaches to working and learning are in demand; more than ever, educational institutions are required to imbue their students with functional lifelong learning skills they need to survive and meet the challenges and changes wrought by the twenty-first century. Experiences both nationally and internationally have shown that conventional education is extremely hard pressed to meet the demands of today's socio-educational milieu, especially for developing countries like Nigeria. In Nigeria there exists a wide gulf between the demands for spots in the educational system at the tertiary level versus the actual number of students admitted annually (see Table 1).

Table 1. Number of applicants and number of students admitted to higher education programs in Nigeria Source: Joint Admissions and Matriculations Board, 2004

Universities	1996/97	1998/99	1999/00	2000/2001
Number of Applicants	371,482	400,194	461,548	653,818
Number Admitted	56,055	78,550	78,550	50,277
Polytechnics				
Number of Applicants	168,981	123,231	110,831	198,850
Number Admitted	28,091	33,168	37,005	38,145
Colleges of Education				
Number of Applicants	16,546	27,916	n/a	14,438
Number Admitted	12,023	12,562	n/a	6,672

This lack of capacity has brought to fore the issue of open and distance learning (ODL) as an innovative and cost effective approach to the educative process. To bridge the gap between participants in the instructional process, ODL offers structured learning in which the instructor and students are separated by time and space, making use of instructional materials such as print materials, audio and video cassettes, CD ROMs, television and radio broadcasts, as well as multimedia components such as computer and satellite transmissions (Peat and Helland 2002). Many ODL institutions encourage students to attend tutorials in addition to academic counselling services, which are often available as complements to tutorial sessions. To foster interaction between learners, in certain cases, online support is offered through real time chat, advice, and email discussion groups with staff and other students (Ray and Day 1998). In many respects, however, ODL remains an alien system of inculcating knowledge to students in Nigeria, because they tend to be more accustom to conventional universities. Thus, because students are new to ODL and its innovations, opportunity for confusion exists.

This study assesses post graduate students' attitude and perceptions of distance learning institutions in Nigeria towards the quality and standard of training obtainable at their institutions, compared to that of the conventional institutions (where many had been enrolled prior to joining the distance learning institution). This study aims to reduce the existing gap in the literature on

students' perceptions and attitudes towards distance education in West Africa, and provide useful and practical information to distance education providers.

Open and Distance Learning in Nigeria

The National Teachers' Institute, Kaduna, was established in 1976 by the Nigerian Federal Government to produce qualified teachers needed to meet the requirements of the then Universal Primary Education (UPE). The Institute's enabling legislation charged NTI Kaduna to provide courses of instruction leading to the development, up-grading, and certification of teachers as specified in the relevant syllabus using distance education techniques. Thus NTI was the first institution formally established in Nigeria to offer courses via ODL methods. NTI courses are offered predominantly through print media. Efforts were made to further disseminate instruction with the aid of an FM radio station donated by the Commonwealth of Learning. This represented the first attempt to make use of instructional technology in distance learning settings in Nigeria, and led to further attempts by the National Open University of Nigeria (NOUN) to teach students using multi-media instructional technology. For instance, the course materials for GST 101 and GST 102, which are compulsory 'English and Communication Skills' courses for foundation students enrolled at NOUN, were supplemented with audio-tapes (referred to as narrow casting). Tutorials were also organised at study centres, which are scattered all over the country. NOUN has 23 study centres where tutorials are carried out face-to-face by part-time appointed facilitators, whilst NTI offers similar services at their study centres located across the country. Thus NTI remains a key institute in the production of professional and functional, intermediate and lower level, teaching workforce needed for the nation's educational system.

A new dimension was introduced into the Nigerian educational system in 2002 with the reopening of the National Open University of Nigeria (NOUN), which was closed 18 years earlier due to political upheavals in Nigeria. The reopening of NOUN brought into ascendancy the use of distance education as a modality that can meet general demand for quality higher education in all spheres of study. Although NTI and other conventional institutions in Nigeria, including Ahmadu Bello University, Zaria; Distance Learning Institute at the University of Lagos; Centre for Distance Learning at the University of Ibadan; and the Distance Learning and Continuing Education Centre at the University of Abuja (Aderinoye and Ojokheta, 2004) had been offering distance-learning courses, the arrival of NOUN on the educational scene provided credence and the level of awareness needed for the acceptance of distance education in Nigeria.

Unlike conventional educational delivery methods, there are no structured face-to-face contacts between students and teachers. Instead, high quality, self-directed, learner-centred instructional materials are made available to students, while instructional facilitation is carried out when necessary, typically after arrangements have been made by the university based on agreement between the students and the course facilitators. Similar to other distance learning institutions around the world, tutorial facilitation is optional for students of both NTI and NOUN. At NOUN, guidance counsellors from the Directorate of Learners' Support are available at the study centres to provide individual students with the necessary information, support, and study skills. For NTI students, counselling services are provided at the point of registration for their course (FME Implementation Plan and Blueprint, 2002).

All these arrangements are important for the effectiveness of instructional process in distance education. It has been confirmed by research and by practice that individualized learning is a lonely activity and that most distance learners are faced with the challenges of family, work, and other social demands, some of which take precedence over their programme of study. In the conventional system, students remain in close and easy contact with the institution, but in the

distance education settings students are often isolated and contact with their university is, at best, infrequent and more often than not takes place at a distance. Although more flexible, the fact remains that this educational approach demands a great deal of personal sacrifice on the part of learners. It requires students to have good study skills, discipline, and self-motivation – attributes needed to attain learner autonomy (Collis, 1996). These attributes, in addition to learners' socio-cultural backgrounds, previous knowledge and learning experiences attained at conventional institutions, will likely influence their perceptions of, and attitudes towards, ODL.

Perceptions of Distance Education

The term 'Distance Education' refers to an educational approach in which there is a quasi separation of the learner and the teacher in time and space (Keegan 1996). In distance education, the instructor and the instructional strategy/ methods are subsumed into the learning material (popularly referred to as Study Materials), that have been designed as a self-directed learning guide for the student. The term 'Open Learning,' on the other hand, refers to the philosophical construct that seeks to remove barriers and constraints that may prevent learners from accessing and succeeding in quality, lifelong education. ODL as an educational method and a philosophic construct has been identified as the most potent instrument for combating the educational problems assailing a nation like Nigeria. Moore and Tait (2002) asserted that ". . . in developing countries, human knowledge resource development through initial and continuing education is not only seen as crucial for growth and competitiveness, but also has far reaching social impact, for example in influencing birth rate, increasing the independence of women, and improving standards of health and rural environment" (p. 17).

This affirms the crucial role that education can play in developing countries like Nigeria. Education is an important ally in the role of social and economic development. The potential of ODL in realising these educational goals has been viewed ambivalently, however. In efforts to meet the new and changing demands for education and training, ODL may be seen as an approach that is at least complementary – and in some circumstances a more appropriate substitute – for face-to-face classroom methods that still dominate most educational systems. Despite the rapid growth and increased popularity of distance learning, the quality of higher learning via distance education has been called to question (Dede 1996; Harrison 2001 as cited in Peat and Helland, 2002). Walter Perry the first vice-chancellor of the Open University of United Kingdom, noted the "scepticism garnished with ridicule and hostility" of distance education universities (Young 1994). According to empirical evidence, however, there is no significant difference between learning outcomes that can be attained at traditional institutions versus distance learning (Verduin and Clark 1991).

While its benefits can be evaluated by technical, social, and economic criteria, distance learning methods also have their pedagogical merit, which leads students to a different way of conceiving knowledge generation and acquisition. Different people perceive the advantages of ODL differently, and their perceptions have influenced attitudes towards acceptance and use of ODL in the education system in Nigeria and elsewhere. There remains concerns, however, about the effectiveness of distance education for learners who may be considered less independent and thus may require direct interaction throughout the instructional process (Schmidt and Faulkner 1989). Another concern is the cost of ODL programming for individual students (Ojo, Ogidan, and Olakulehin, 2005). There is a perception that most all distant learners are members of the working class, but this is not entirely true as shown by the statistics of registered students in NOUN shown in Table 2.

Table 2. Employment Status of NOUN Students

	Working	Not-Working	Total
Male	2,965	3,809	6,774
Female	1,109	2,083	3,192
Total	4,074 (41%)	5,892 (59%)	9,966

Source: *Academic Registry Department, NOUN.*

Studies have found little difference in the quality of education received through distance learning versus conventional university classroom settings. Studies have determined that students taking distance learning courses perform as well as students taking courses via traditional methods (Gagne and Shepherd, 2001; Russell, 2002). More often than not, perceptions of the distance learning system in the instructional process is influenced by an individual's beliefs about the advantages of distance education, for himself, as a student, as an employer (whose employees are also distant learning students), or as an educational planner (desirous of providing potent solutions to educational problems).

Method

The samples for this study comprised 120 distant learning students randomly selected from study centres located at the six geo-political zones in Nigeria. The sample was drawn from students who registered for various postgraduate diplomas and master degree programmes at the NTI and NOUN study centres. A structured questionnaire entitled the Students' Attitude and Perceptions Rating of Open and Distance Learning Institutions Inventory (SAPRODLII), was developed by the researchers to gather the required information. The SAPRODLII is a 12 item Likert-type inventory designed to measure distance learning students (specifically those who have also experienced conventional university training) attitudes and perceptions towards ODL. The instrument was administered face-to-face to the distance learners during the tutorial sessions through the assistance of the Study Centre Managers at the Centres in each of Nigeria's six geo-political zones. Subjects were asked to rank each item (in comparison to traditional education) as true, false, or undecided. The questions on the SAPRODLII were designed to elicit subjects' opinions and attitudes towards the learning materials used in the two different modes, the instructional technology used, entry point considerations, attention to students' counselling needs, learning materials available, and the perceived advantages of the two modes. The instrument was validated by two experts in research and evaluation; its test-retest reliability was 0.67 ($n = 15$).

The respondents were 57 percent male and 43 percent female, with age ranging from 24 to 65 years. Thirty-two ($n = 32$) respondents were from NTI; eighty-eight ($n = 88$) were from NOUN. Respondents were registered in programmes such as PGD Education; PGD Human Resource Management, Financial Management; MBA; Masters of Education; M. Sc., Information Technology. Results were analysed using simple percentage statistics.

Results and Findings

Results generated from the instrument are presented in Table 3.

Table 3. Results of the Survey

S/N	Issue	True	False	Undecided
1.	The study materials received in ODL are of better quality than the lecture notes received in conventional system	66 (55%)	26 (21.6%)	28 (23.4%)
2.	The use of instructional technology in the ODL is as prevalent as those used during my training in the conventional system	16 (13.3%)	58 (48.3%)	46 (38.3%)
3.	The entry point into the ODL system seems more relaxed than the conventional system	79 (65.8%)	31 (25.8%)	10 (8.4%)
4.	The tutorials in use in ODL are as effective as the lecture methods used in the conventional system	52 (43.3%)	57 (47.6%)	11 (9.1%)
5.	The counselling needs of learners are better met in ODL than in the conventional higher education	56 (46.6%)	36 (30%)	28 (23.4%)
6.	If I had the choice, I would have undertaken my first degree via the ODL method	68 (56%)	52 (44%)	~
7.	There is more room for academic cheating in ODL institutions	55 (45.8%)	58 (48.3%)	7 (5.8%)
8.	Group discussions are more important in ODL than the conventional system	95 (79.1%)	4 (3.4%)	21 (17.5%)
9.	The workload in ODL institutions is too much	40 (33.3%)	43 (35.7%)	37 (30.8%)
10.	The materials provided in ODL are self sufficient for my studies	98 (81.7%)	~	22 (18.3%)
11.	It is easier to work and study in the ODL institution unlike in the conventional university	96 (80%)	18 (15%)	6 (5%)
12.	The ODL institution permits one to extend the completion period of a programme without penalty	89 (74.2%)	~	8 (6.7%)

Table 3 shows the item-by-item percentage analysis of the SAPRODLII. Sixty-six students (55%) perceived that the course materials used in their ODL study are of higher quality than the lecture notes provided by lecturers at conventional institutions. Fifty-eight students (48.3%) disagreed to the statement: "*The use of instructional technology in the ODL is as prevalent as those used during my training in the conventional system.*" We suggest that this finding is not surprising however, considering that distance teaching institutions in Nigeria currently only make use of low-level technology such as audiotapes and videotapes.

Responses to Item 4: "*The tutorials in use in ODL are as effective as the lecture methods used in the conventional system,*" indicate that there is little difference in students' perceptions of lectures/ tutorials used in the conventional institutions versus ODL institutions. This finding suggests that students engaged in ODL will likely achieve learning outcomes similar to those offered by conventional educational methods.

Findings from Item 5: "*The counselling needs of learners are better met in ODL than in the conventional higher education,*" suggests that students' need for counselling were better met in ODL institutions than in conventional university; 46.6 percent of the students responded positively approve this statement, while 30 percent responded negatively, and 23 percent indicated they were undecided.

Other statements designed to measure students' attitudes and perceptions about ODL institutions, specifically Items 6, 8, 9, 10, 11 and 12, indicated students held favourable perceptions towards ODL. On the other hand, findings were very similar for Item 7 "*There is more room for academic cheating in ODL institutions,*"which was developed to ascertain students' perceptions of cheating.

Discussion

Widely held attitudes are fundamental to understanding social perception of people, because they greatly influence their own and peoples' actions. Cohen (1966) and Ojo (2000) contend that it is only human nature to view things in certain ways and act accordingly. The flexibility inherent in ODL as a delivery method enables students to pursue whatever kind of degree or training they want, even though they may be working full or part-time. Entry point requirements are more relaxed in ODL, and if there is demonstrable need, students have the opportunity of defer courses, programmes, and even examinations. Such flexibility is very difficult to achieve in the conventional universities because their activities and management systems are more rigid and thus restrictive by design.

Innovative use of instructional technology is another point of potential contact between students and the institution. Use of instructional technology may also be one of the reasons leading to favourable findings students indicated toward ODL. Other favourable factors may be personal, social, academic, and situational – factors that may influence students' intention to enrol for programmes offered by ODL institutions (Walker and Lowenthai, 1981).

Findings from this study are very important. Although respondents' recognition of a conventional university education value was never in doubt, they nonetheless had purposefully chosen to enrol in an ODL institution. Students' responses to Items 4, 9 and 11 support this assertion. Most students in this study held positive perceptions and attitudes towards ODL. This finding suggests there is strong rationale for the expansion of the ODL institutions in Nigeria. It also suggests that ODL institutions have reached the critical tipping point of acceptance, and as such ODL institutions are well positioned to become a permanent component of the formal education system in Nigeria. Sustaining students' favourable perceptions and improving any and all shortcomings as they arise now rests squarely on the shoulders of those charged with running Nigeria's ODL institutions. These educational leaders must not only run ODL institutions effectively and efficiently, they must strive to continuously improve the quality of their institutions' educational offerings and continuously seek ways to expand their educational provision.

Responses in Item 2, "*The use of instructional technology in the ODL is as prevalent as those used during my training in the conventional system*" indicates that the use of instructional technology/ ICT remains rather sparse in the pedagogical practice of distance education in

Nigeria. It is suggested, however, that this shortcoming is more a reflection of the entire education system throughout Nigeria and, by extension, its entire socio-economic system. Indeed, most Nigerians still grapple with problems inherent in the digital divide; access to instructional technology and capacity to use such technology is negligible compared to those of developed nations (Yusuf and Falade, 2005). Thus administrators and leaders charged with oversight of distance teaching institutions in Nigeria may want to concentrate their research efforts on overcoming the deficits that underpin and perpetuates the digital divide.

For Item 7, a large percentage of the respondents (45.8%) agreed that ODL institutions provide ample opportunity for cheating. However, there is no clear cut difference in the responses between ODL and conventional universities on the topic of 'cheating.' Such small difference (< 3%) might be attributable to the fact that ODL students are at liberty to answer the Tutor Marked Assignment given to them in course materials provided. This practice can be compared to that of conventional universities in which students are required to answer questions in a face-to-face classroom setting. Thus, whatever cheating that may be perpetuated by ODL students as compared to those students enrolled in conventional universities cannot be easily deciphered. Moreover, perhaps such differences cannot be accurately measured simply because the rationale for giving ODL students the answers in the learning materials in the first place, puts emphasis on functional application of knowledge as opposed to rote memorization and recall-style learning that often characterises conventional learning settings. This means that distance learning institutions should remain focused on developing open-book, portfolio, and problem-based learning situations wherein students work together to find creative solutions to problems posed in the learning materials.

ODL students may cheat by hiring someone who has a greater understanding of the topic to write their assignments for them. Indeed, no one is there to watch over them and monitor their learning as is the case in conventional universities. Thus quality concerns in ODL should be addressed through the administration of end-of-semester exams that are proctored in face-to-face settings. In short, use of proctored examinations will help ensure ODL students' assessment of learning outcomes is 100 percent reliable. Exam results are key to understanding students' comprehension, knowledge acquisition, and application of the study materials, and are needed to critically assess the learning materials itself.

Conclusion

Findings from this study reveal that distance learners in Nigeria are favourably disposed to Open and Distance Learning institutions at this time. The 120 students who responded to this survey indicated their interest in the unique features that make-up ODL institutions, such as open access, opportunity for flexible learning, provision of quality learning materials, the use of multi-media and ICTs, etc. The findings reported here also suggest that those administering and leading Nigeria's ODL institutions are in an excellent position to build positively on the favourable perceptions already held by many distance learning students. They can achieve this through the effective and efficient management of Nigeria's ODL institutions. Put differently, because students currently hold favourable opinions and perceptions towards ODL and its potential, Nigeria is a position to leap forward to take advantage of their ODL institutions at home, and perhaps expand to serve sub-Saharan Africa in general. To achieve the full potential of ODL however, effective measures must be undertaken to adopt instructional technology for distance learning, expand provision of quality assurance in design, ensure the timely development and delivery of quality course materials, and continue to enhance student support services. ODL can be everything to more people and now is the time to act.

References

Adesina, S. (1988). *The Development of Modern Education Nigeria.* Heinemann: Ibadan, Nigeria.

Aderinoye R., and Ojokheta K. (2004) Open-Distance Education as a Mechanism for Sustainable Development: Reflections on the Nigerian Experience. International Review of Research in Open and Distance Learning 5(1). Retrieved June 5, 2006 from: http://www.irrodl.org/index.php/irrodl/article/view/174/256

Crider, A. B., Goethals, G. R., Karanaugh, R. D., and Solomon, P.R. (1983). *Psychology.* Glenview: IL.: Scott Foresman and Co.

Federal Ministry of Education (2002). *Implementation Plan and Blueprint for the National Open University of Nigeria.* Abuja, Nigeria: FME.

Gagne. M., and Shepherd, M. (2001). A comparison between a distance and a traditional graduate accounting class. *T.H.E. Journal 28*(9). Retrieve June 6, 2006 from: http://www.thejournal.com/magazine/vault/A3433.cfm

Hellman, J. A. (2003). *The Riddle of Distance Education: Promise, problems and applications for development.* Geneva: United Nations Research Institute for Social Development.

Keegan, D. (1996). *Foundations of Distance Education* (3rd ed). London: Routledge.

Koul, B. N. (2005). Academic Operations in ODL. Presentation at the *NOUN Staff Induction Workshop* held at Lagos Nigeria in January. National Open University of Nigeria.

Moore, M., and Tait, A. (2002). *Open and Distance Learning: Trends, Policy and Strategy considerations.* Paris: UNESCO.

Ojo O. D. (2000). *Knowledge, Attitudes and Practices of Parents and Teachers in relations to Adolescents' Reproductive Health Training in Osun State, Nigeria.* Unpublished Ph.D Dissertation. Faculty of Education, Obafemi Awolowo University: Ile-Ife, Nigeria.

Ojo, O. D., Ogidan, R., and Olakulehin F. K. (*in press*). Cost-effectiveness of Open and Distance Learning in Nigeria: Responses from focus group discussion.

Owoeye, J. S. (2004) An Overview of Distance Education in the University of Ibadan. In O. A. Afemikhe and J. G. Adewale (Eds.) *Issues in Educational Measurement and Evaluation in Nigeria.* ERSG: Ibadan.

Peat J., and Helland, K. (2002). Perceptions of Distance Learning and the Effects on Selection Decisions. Retrieved July 21, 2005 from:

http://bus.utk.edu/iopsyc/pdf/Perceptions-of-Distance-Education-siop2003.pdf

Ray, K., and Day, J. (1998) Student attitudes towards electronic information Resources. *Information Research 4*(2). Retrieved June 5, 2006 from: http://informationr.net/ir/4-2/paper54.html

Siegel, D. (n.d.). Likert Scales. Center for Gifted Education and Talent Development website. Retrieved December 8, 2005 from: http://www.gifted.uconn.edu/siegle/research/instrument%20Reliability%20and%20Validity/Likert.html

Walker V. L., and Lowenthai, W. (1981). Perceptions of Undergraduate Students toward Continuing Education. *America Journal of Pharmacy Education 45*(3). 268 – 272.

Young, M. (1994). *Prospects for Open Learning.* Lecture held at the Open University at Churchill College in Cambridge England on April 15 1994.

Yusuf, M.O., and Falade, A. A. (2005) Media in Distance Learning: The Nigerian National Teachers Institute Distance Education Programme. *Turkish Online Journal of Distance Education 6*(4). Retrieved June 5, 2006 from: http://tojde.anadolu.edu.tr/tojde20/pdf/Volume6Number4.pdf

Student Success in Face-To-Face and Distance Teleclass Environments: A matter of contact?

Teddi S. Deka and **Patrick McMurry**
Missouri Western State University

Abstract

Learning from a distance continues to gain popularity. An influx of traditional, and even on-campus students attest to its flexibility, but are they equipped to succeed in a low-contact distance environment versus a face-to-face, on-campus environment? This research explored whether several variables including background, preparedness and self-perceptions assessed within the first week of class contributed differently to the success of students completing one-way distance teleclasses ($n = 35$) versus students completing the same classes in face-to-face, on-campus environments ($n = 64$). The distance students were less successful than face-to-face students when exam grades were examined (A, B, C versus D, F, drop). For distance learners, higher reading comprehension and scholastic competence were indicative of exam grade success. Student-initiated contact with the instructor was marginally related to distance student success. For face-to-face learners, reading comprehension, reading rate and lower athletic competence was indicative of exam grade success. Suggestions to help students decide whether distance learning is right for them and ways to support distance learners in low-contact environments are discussed.

Keywords: Distance; success; retention; self-efficacy; self-esteem; contact; comprehension

Student Success in Face-To-Face and Distance Teleclass Environments: A Matter of Contact?

Most universities began to offer distance classes to reach students with work and family commitments, or who lived too far away from campus (Galusho, 1997). It is not surprising, then, that when one thinks of the typical distance learner, the non-traditional working student comes to mind (Wallace, 1996). The demographics of distance students have slowly begun to change towards younger students, some of whom concurrently enroll in on-campus and distance classes (Guernsey, 1998; Wallace, 1996). These students report enrolling in distance classes when work demands interfere with class times, or when classes they wanted to enroll in are full (Minich, 1996; Swan, Shea, Fredericksen, Pickett, Pelz, and Maher, 2000).

Taking classes at a distance may pose new challenges for students who are used to taking on-campus classes in terms of studying, time management and autonomy (Moore, 1998). This study seeks to

explore whether there are indications of preparedness that will help students who have the option of taking a class on campus or at a distance decide which medium will best support their success.

Measuring Success

Two common indices for measuring success are class grades and retention rates. Distance students fare well when compared to on-campus, face-to-face (F2F) students, either showing no significant differences or even slight increases in class grades (Schoenfield-Tacher, McConnell, and Graham, 2001; Tucker, 2000). One difficulty with using grades to measure success is that students must not drop out of the class to receive a letter grade. Investigations that use grades to measure success do not appear to include students who drop out, and drop out rates tend to be significantly higher in distance classes (Carr, 2000; Garrison, 1987; Tucker, 2000; Woodley and Parlett, 1983; Zajkowski, 1997). Indeed, lower retention rates can be attributed to situational problems (i.e., job, finances, family) and institutional barriers (i.e., cost, instructor problems, bureaucracy), but we must not forget that some students may have dispositional problems such as learning style and lack of confidence that don't mesh well with the distance format (Garland, 1993).

Several variables have been useful in predicting who successful, and unsuccessful, F2F learners will be, such as grades in high school, performance on standardized measures (i.e., ACT, SAT), study skills, motivation to succeed, demographic variables, and timeliness of the educational experience. Some of these variables have been identified as particularly important for distance learner success, but with very little supporting evidence (Pachnowski and Jurczyk, 2000). These variables can be classified into four categories: Background (particularly age and gender), preparedness (such as study skills and abilities, particularly reading ability) self-esteem/ self-efficacy, and motivation to succeed (Gibson, 1998).

For background, distance students tend to be female, older than F2F students, and to have family or work obligations (U.S. Dept. of Education, 2002). Higher age, grade point average, and being married, correlate with success in distance classes (Dille and Mazack, 1991). Very little information is available for how preparedness, self-esteem/ self-efficacy and motivation to succeed relate to distance student success, but it seems fair to assume that students who are more prepared with higher self-efficacy and higher motivation will perform better in any class, regardless of whether it is taught at a distance or F2F. There is good reason to suppose that these variables are very important for success in the distance classroom: The distance student will have a reduced level of contact with the instructor and other classmates, so he or she will have to rely more on the self to provide pacing, study strategies and momentum for continuing the class (Moore, 1989). Reduced contact also increases reliance on the text rather than direct contact with the instructor or other classmates, and this may particularly affect students with poor reading skills.

Contact with the Instructor

The most straightforward way to investigate whether contact with the instructor, in and of itself, impacts the success of distance students is to compare grades or retention rates between the same classes taught at a distance versus F2F, with the assumption that distance students have less contact with the instructor. Students taking distance classes fare the same, or even better, in terms of grades, yet worse in terms of retention rates when compared to F2F students (Denton, Clark, Rossing, and O'Connor, 1984; Hogan, 1997; Schoenfeld-Tacher, McConnell, and Graham, 2001). These results suggest that contact with the instructor has little effect, at least on grades. The main problem with this conclusion is that lower contact between faculty and students is assumed, and this may not be the case at all!

Many distance learning formats offer easy contact with the instructor, such as computer-based classes with *WebCT* or chat capabilities, and two-way interactive teleclasses with audio and video feed. Most comparisons between distance and F2F student success have involved such higher-contact formats. Few investigations have examined success in situations where contact is harder to achieve, such as with the traditional teleclass or one-way teleclass.

With a traditional teleclass, learners receive videotapes of lectures, usually by mail, and view these lectures at their own pace. With the one-way teleclass, the instructor's lectures are aired live over cable television. Students taking the class can then engage in synchronous learning, calling in to the classroom to talk directly with the instructor, or they can engage in asynchronous learning, taping the classes to watch at their own pace. Student-instructor interaction, with either format, usually requires more effort on the part of the student than the higher-contact formats, and sometimes requires public effort that some students may find undesirable.

Investigations comparing success of distance students in lower-contact environments with students in F2F environments has yielded mixed results. The Ritchie and Newby study (1989) found no test score differences when information was presented in a 13-minute face-to-face format versus a one-way teleclass format, and the Towles, Ellis and Spencer (1993) study found marginal increases in retention rates when students in a one-way teleclass were contacted by their instructor during the semester when compared to students who were not contacted at all, although the amount of contact was not reported. The Hogan (1997) study compared grades from several one-way teleclasses with their F2F counterparts and found greater success for students in the telecourses in terms of grades, but lower success in terms of retention rates. Regardless of whether actual contact contributes to success, distance students who report more contact with their instructors report more satisfaction with their distance class (Fulford and Zhang, 1993; Ritchie and Newby, 1989; Swan et al., 2000).

The purpose of the current study is to investigate whether contact with the instructor, as well as other variables within the categories of background (i.e., age, gender), preparedness (e.g., study skills, reading comprehension), and self-esteem/ self-efficacy/ motivation contribute to the success of distance learners in low-contact environments versus F2F, on-campus learners. All variables except contact with the instructor are assessed either before or within the first week of the semester because early detection of possible success was a goal of this research. Particular attention is paid to the definition of success, to include students who dropped the class who were failing at the time, as well as the amount of contact that ensued between instructor and student in the distance environment.

Method

Context and Participants

The mid-sized, Midwestern university where the research was conducted offers both F2F classes and distance classes. Distance classes have been offered since 1991, and are either computer-based or video-based (teleclasses). Since its inception, 127 computer-based classes with 2,778 enrollments and 94 video-based classes with 3,756 enrollments have been offered. The current research was limited to one-way teleclasses for two reasons: First, each teleclass has its exact, F2F equivalent. The one-way teleclass is broadcast from an on-campus classroom with students who are taking the class as the audience. Therefore, each class contains both F2F students and distance students who see the same lecture with the same instructor. While F2F students attend class on campus, distance students have the option of watching the broadcast as it is being aired, in real time on the university's cable channel (which is available to the surrounding community), a re-

broadcast in the evening, taping the broadcast and watching it later, renting the tapes from our Instructional Media Center, or viewing the tapes in the library on campus.

The second reason why only one-way teleclasses were examined was because the research focused on the success of students in low-contact environments. The internet classes have greater potential to involve more immediate contact. There are varying levels of contact that are potential in the one-way teleclass as well, especially if the student watches the broadcast in real-time and calls in. Of the individuals surveyed, only 20 percent planned to watch the broadcast in real time. The majority, 65 percent, reported that they would tape the broadcast to watch it later, would watch the re-broadcast at night, or would watch the tapes in the library at their convenience. The remaining 15 percent would rent the tapes from the Instructional Media Center. Thus, the majority of individuals in this research planned to take the class in a lower-contact environment, whether by preference or circumstance. The only required contact in these classes was that students had to come to the institution to complete exams, and the instructors had to offer one time at night that students could do so. If a student could not come in at that time, individual arrangements were made with an exam proctor.

Four classes were examined: Two sections of introductory psychology and two sections of basic economics. Each section contained F2F students within the classroom and distance students watching the class on TV. An orientation meeting was held with distance students the weekend before the semester began to better prepare them for their distance learning experience. The orientation included explanations of the format and requirements of distance classes in general, as well as personal meetings with the various instructors. During the orientation, students were asked to participate in the research and complete the questionnaires. The ones who did not attend the session were contacted by phone and asked to complete the survey within the first week of the semester, which yielded five additional students. Of the 69 distance students enrolled in these four courses, 52 percent (22 females and 13 males) completed the questionnaires, ranging in age from 18 to 52 with a mean age of 25.71. Of these distance students, 90 percent reported simultaneously completing classes on-campus in F2F environments, and 72 percent were full-time students. The F2F students were asked to participate in the research during the first week of the semester. Of 107 F2F students, 60 percent (40 females and 24 males) completed the questionnaires during one class period in the first week of the semester, ranging in age from 18 to 44 with a mean age of 20.58. None of these students were simultaneously enrolled in a distance teleclass, and 92 percent described themselves as full-time students. For both the distance and F2F students, information on non-participants is not available. There were very few refusals for participating at the orientation session for the distance students or during the class period for the F2F students. Most non-participators simply were not present when it was most convenient to complete the questionnaires, which could have affected the type of distance learner completing the questionnaires. However, the research focus was on students who have opportunity to complete F2F classes yet take distance classes. Since 90 percent of the distance students were also completing F2F classes on campus, this group was the desired group for this investigation.

Procedures and Methodology

Participants completed all questionnaires either during their orientation session or within the first week of the semester. Questionnaires pertained to reading, study skills, self-perceptions and background information.

Reading: The Nelson-Denny Reading Test[1] (Brown, Fishco, and Hanna, 1993) assesses reading comprehension and reading rate. The reading comprehension scale contains seven reading passages and 38 questions with five answer choices, and is limited to a completion time of 20 minutes. Reading rate is measured by how much of the first reading comprehension passage is read within the first minute of testing. Scores for both measures are converted to percentiles ranging from 0 to 1.00 based on national standardized data for four-year colleges.

Study skills: The Study Skills Self-Report[2] (Deka, 2000) presents participants with a list of 65 successful study skills based on suggestions by Walter and Siebert (1990). For each study skill, participants circle True or False depending on whether they have used the skill repeatedly in the past. Each item is focused on one of five themes: Confidence, time management, general study skills, reading practices and preparation for exams. Individual scores can range from 0 (no use of study skills) to 65 (use of all study skills) and shows good reliability (Chronbach's Alpha [$n = 70$] = .74). Subscales were not examined to maximize the reliability of the measure.

Self-perceptions: The Self-Perception Profile for College Students (Neeman and Harter, 1986) is a 54-item paper-and-pencil questionnaire that measures self-esteem across 13 dimensions: Creativity, intellectual ability, scholastic competence, job competence, athletic competence, appearance, romantic relationships, social acceptance, close friendships, parent relationships, finding humor in one's life, morality and global self-worth. Chronbach's Alpha reliabilities for the subscales range from .92 to .76. Items for each subscale are scored from 4 (high self-esteem) to 1 (low self-esteem). Items within each dimension were averaged so that the maximum score for each dimension was 4 and the minimum was 1.

A background questionnaire was administered last, on which students indicated information such as gender and age. Distance students were asked to indicate best times for instructors to contact them by phone.

Contact with instructor: The 35 distance students who completed the questionnaires were divided into two groups based on their scores on the reading comprehension, reading rate, study skills, and global self-worth questionnaires, in addition to gender and age so that the resulting two groups did not differ significantly on any of these variables. Students in the Contact Group received one phone call per week for 13 weeks during the semester from their instructor asking how they were progressing and if they had any questions about the course material. These students were contacted at times and days they indicated would be good for contact on their background questionnaire. If a student was not home, the instructor left a message, and called the student the next day. Students in the No Contact group did not receive these calls, but could contact the instructor via phone or email, just as any other student in the distance or F2F sections. The minutes in contact with each distance student were recorded by the instructor, and whether the contact was instructor-initiated or student-initiated. Actual time in contact was logged for phone contact, and two minutes of contact time was logged for one-to-one email to either the student or instructor, depending on who initiated the contact. Instructors did not send mass information over email to students. Instead, announcements were made in class since

the distance learners viewed the class either live, on a re-broadcast or on videotape and were not logged as "contact."

Success: Success was measured with exam grades and retention rates. Exam grades were chosen because the Psychology and Economics courses both involved four exams, and at least 90 percent of the final grade was determined by exam grades. In addition, distance students had to complete the same requirements as their F2F counterparts within the same time frame, but were usually allowed an additional week because some distance students received their videotapes by mail. Based on the exam grades alone, students were assigned a score of 1 (successful) if they received an A, B, or C average, and a score of 0 (unsuccessful) if they received a D, F, or did not complete the class after taking at least one exam and averaging a D or F at the time of no longer participating. Three non-completers (two distance and one F2F) did not meet these criteria because they did not complete any exams. They were excluded from the analysis. Eight distance and six F2F students did not complete all of the exams and were included in the unsuccessful group. An ANOVA comparing the length of time these non-completers persisted in their classes showed no significant differences, with distance non-completers taking an average of 1.38 exams and F2F non-completers taking an average of 1.83 exams. The remainder of individuals in the unsuccessful groups (10 distance and 14 F2F) completed all required exams yet received D or F grades. In total, the research included 15 successful and 18 unsuccessful distance students, and 43 successful and 20 unsuccessful F2F students.

Results

Comparison of Distance and F2F Students

A Multivariate Analysis of Variance (MANOVA) was conducted to compare the distance and in-class students on all variables. Learning group (distance or F2F) was the independent variable and the background, reading, study skills, self-esteem, and success variables were dependent variables. A significant effect was found ($? [18, 77] = 2.22$, $p < .009$). Follow-up ANOVAs indicated significant learning group differences in the following variables: Age (F $[1, 94] = 13.06$, $p < .0001$), Reading Comprehension (F $[1, 94] = 4.75$, $p < .04$), and Success (F $[1, 94] = 4.85$, $p < .03$). As indicated in Table 1, distance learners were significantly older than F2F learners. They also had higher reading comprehension rates. However, they were less likely to be successful (A, B, C vs. D, F, Drop).

Table 1. *Comparison of distance and FTF Students*

Variable	Distance *M (SD)*	F2F *M (SD)*	F	Min	Max
	n = 33	*n* = 63			
Background					
Gender	.39 (.50)	.35 (.48)	*ns*	0.00	1.00
Age	26.12 (9.78)	20.60 (5.21)	13.06**	18.00	52.00
Reading					
Comprehen.	58.75 (25.84)	46.67 (25.80)	4.75*	1.00	99.00
Rate	41.30 (27.48)	35.97 (27.97)	*ns*	1.00	99.00
Study Skills	44.09 (8.02)	41.29 (6.80)	*ns*	21.00	58.00
Self-Perceptions					
Job Comp.	3.46 (.54)	3.29 (.57)	*ns*	2.00	4.00
Scholastic Abil.	2.85 (.72)	2.86 (.72)	*ns*	1.50	4.00
Social Accept.	3.12 (.70)	2.86 (.56)	*ns*	1.00	4.00
Appearance	2.65 (.75)	2.71 (.90)	*ns*	1.00	4.00
Parental Acc.	3.49 (.57)	3.39 (.68)	*ns*	1.00	4.00
Close Relat.	3.20 (.76)	3.30 (.74)	*ns*	1.00	4.00
Intelligence	3.17 (.67)	2.98 (.67)	*ns*	1.00	4.00
Moral	3.19 (.73)	3.21 (.60)	*ns*	1.25	4.00
Romantic	2.76 (.86)	2.79 (.82)	*ns*	1.00	4.00
Humor	3.46 (.56)	3.40 (.66)	*ns*	1.25	4.00
Creativity	3.02 (.67)	2.89 (.75)	*ns*	1.25	4.00
Athletic Comp.	2.53 (.86)	2.58 (.98)	*ns*	1.00	4.00
Self-Worth	3.16 (.65)	3.17 (.66)	*ns*	1.50	4.00
Success	.45 (.51)	.68 (.47)	4.85*	0.00	1.00

Note. ** For gender, 1 represented male and 0 represented female.
For reading, means represent percentiles based on normative four-year college data.
For success, mean represents the percent of students receiving A, B or C grades.
p < .01, * *p* < .05.

Success of Distance Students

A MANOVA was used to compare successful and unsuccessful distance students on background, reading, study skills, self-esteem and additionally, the contact variables of instructor-initiated contact minutes, student-initiated contact minutes, total contact minutes, and whether the student was called weekly by the instructor. The independent variable was Success (students earning A, B, C grades versus D, F Drop). The MANOVA was marginally significant (? [21, 11] = 2.37, p < .08). Follow-up ANOVAs indicated significant differences between successful and unsuccessful distance students in reading comprehension (F [1, 31] = 15.42, p < .0001), scholastic competence (F [1, 31] = 6.38, p < .02) and athletic competence (F [1, 31] = 5.82, p < .03). As indicated in Table 2, successful distance students scored significantly higher in reading comprehension and scholastic competence, and lower in athletic competence, before or within the first week of the semester. None of the contact variables were significant. Of interest was the number of student-initiated contact minutes logged throughout the semester, which approached significance and was higher for successful distance students.

Success of F2F Students

A MANOVA was used to compare successful and unsuccessful students in on-campus classes on the background, reading, study skills and self-esteem variables, but was not significant. ANOVA results indicated significant differences in reading comprehension (F [1, 62] = 5.54, p < .03), reading rate (F [1, 62] = 5.59, p < .03) and athletic competence (F [1, 62] = 8.59, p < .001). As indicated in Table 3, successful on-campus students showed higher reading comprehension and reading rate scores, and lower levels of athletic competence.

Table 2. *Comparison of successful and unsuccessful distance students*

Variable	Successful	Unsuccessful	F	Min	Max
	M (SD)	*M (SD)*			
	n = 15	*n* = 18			
Background					
Gender	.33 (.49)	.44 (.51)	*ns*	0.00	1.00
Age	28.20 (10.47)	24.39 (9.11)	*ns*	18.00	52.00
Reading					
Comprehen.	74.20 (20.43)	45.89 (22.97)	15.42**	12.00	99.00
Rate	42.53 (25.30)	40.28 (29.87)	*ns*	1.00	96.00
Study Skills	44.07 (8.60)	44.11 (7.75)	*ns*	26.00	58.00
Self-Perceptions					
Job Comp.	3.54 (.57)	3.40 (.52)	*ns*	2.00	4.00
Scholastic Abil.	3.20 (.59)	2.60 (.72)	6.38*	1.50	4.00
Social Accept.	3.04 (.71)	3.18 (.71)	*ns*	1.75	4.00
Appearance	2.54 (.71)	2.77 (.77)	*ns*	1.00	4.00
Parental Acc.	3.39 (.65)	3.57 (.50)	*ns*	2.00	4.00
Close Relat.	3.32 (.81)	3.11 (.72)	*ns*	1.50	4.00
Intelligence	3.38 (.79)	3.01 (.54)	*ns*	1.00	4.00
Moral	3.20 (.95)	3.18 (.53)	*ns*	1.25	4.00
Romantic	2.87 (.91)	2.67 (.84)	*ns*	1.00	4.00
Humor	3.39 (.65)	3.51 (.50)	*ns*	2.00	4.00
Creativity	3.25 (.70)	2.85 (.81)	*ns*	2.00	4.00
Athletic Comp.	2.14 (.79)	2.83 (.81)	5.82*	1.00	4.00
Self-Worth	3.26 (.65)	3.07 (.66)	*ns*	1.50	4.00
Contact					
Instr.-Initiated	18.87 (32.62)	20.94 (26.84)	*ns*	0.00	104.00
Stud.-Initiated	10.00 (16.73)	5.50 (9.21)	*ns*	0.00	57.00
Total Minutes	28.87 (39.62)	26.44 (32.40)	*ns*	0.00	139.00
Called by Inst.	1.47 (.52)	1.61 (.50)	*ns*	1.00	2.00

Note. For gender, 1 represented male and 0 represented female.
For reading, means represent percentiles based on normative four-year college data.
For Called by Instructor, students were assigned a 2 if they were called by the instructor and a 1
if they were not called by the instructor.
For Instructor-Initiated, Student-Initiated and Total Minutes, means represent actual minutes
spent talking to the student.
** $p < .01$, * $p < .05$

Table 3. *Comparison of successful and unsuccessful FTF students*

Variable	Successful	Unsuccessful	F	Min	Max
	M (SD)	*M (SD)*			
	n = 43	*n* = 20			
Background					
Gender	.28 (.45)	.50 (.51)	ns	0.00	1.00
Age	21.14 (6.07)	19.45 (2.26)	ns	18.00	44.00
Reading					
Comprehension	52.02 (25.00)	35.15 (24.23)	6.34*	1.00	97.00
Rate	41.70 (28.33)	23.65 (23.33)	6.16*	1.00	99.00
Study Skills	41.09 (7.32)	41.70 (5.66)	ns	21.00	58.00
Self-Perceptions					
Job Comp.	3.27 (.59)	3.35 (.53)	ns	2.25	4.00
Scholastic Abil.	2.85 (.66)	2.68 (.38)	ns	1.50	4.00
Social Accept.	2.90 (52)	2.78 (.64)	ns	1.00	4.00
Appearance	2.71 (.90)	2.73 (.91)	ns	1.00	4.00
Parental Acc.	3.37 (.66)	3.44 (.74)	ns	1.00	4.00
Close Relat.	3.35 (.70)	3.19 (.83)	ns	1.00	4.00
Intelligence	2.99 (.71)	2.96 (.58)	ns	1.75	4.00
Moral	3.19 (.62)	3.28 (.57)	ns	2.00	4.00
Romantic	2.73 (.87)	2.93 (.72)	ns	1.00	4.00
Humor	3.33 (.73)	3.54 (.50)	ns	1.25	4.00
Creativity	2.93 (.74)	2.81 (.79)	ns	1.25	4.00
Athletic Comp.	2.34 (.93)	3.08 (.92)	8.52**	1.00	4.00
Self-Worth	3.16 (.67)	3.20 (.66)	ns	1.50	4.00

Note. For gender, 1 represented male and 0 represented female.
For reading, means represent percentiles based on normative four-year college data.
** $p < .01$, * $p < .05$

Discussion

Because so many students have become interested in taking distance classes, understanding the unique demands of learning at a distance has become more important for instructors, students and advisors. Several themes emerged from the current research and will be discussed in turn with possible solutions and future directions for research.

Defining Student Success

Past research indicates that distance students are at least, or more successful in grades, but less successful in terms of retention when compared with F2F students (Schoenfield-Tacher et al., 2001; Tucker, 2000). We argued that success as defined by grades should not necessarily be separated from success as defined by retention, especially when students drop or stop after obtaining feedback that indicates they are not passing the class. We were able to include these students because the assessment measures were given either before classes began or within the first week of classes when all students were attending. Using this more inclusive definition of success, F2F students were significantly more successful than distance students, obtaining a higher percentage of A, B, and C grades. The primary difference between the two groups appeared to be that more distance students failed to complete all of the exams, but completed at least one exam (24 percent of the distance students compared to 9.5 percent of the F2F students). Only two distance and one F2F student did not complete any exams, and these three were not considered in the analysis. Our research indicated no significant differences in how long non-completing F2F and distance students persisted (1.83 exams vs. 1.38 exams, respectively). The matter of persistence was not about "how long," but about "how many." Students completing the distance classes in this research were limited in their flexibility to self-pace. They had to complete their assignments and exams within the semester, and usually within one week of the F2F students. Susceptibility to falling behind due to the logistics of completing the distance class, or even a little procrastination, could start the distance learner on a slippery slope to giving up. Providing more flexibility for completion of the course may help increase the success of distance students.

Distance as an Option

At our institution, as well as many others in the U.S., the majority of distance students report simultaneous enrollment in both on-campus (F2F) classes and distance classes. Ninety percent of our participants indicated simultaneous enrollment, and 72 percent reported being full-time students. These figures contradict the typical portrayal of the distance student as living further from campus or not having access to campus (Guernsey, 1998; Wallace, 1996). Our distance learners were, on average, five years older than their F2F counterparts, but age did not contribute to the success of either group.

Preparedness, as measured by study skills and reading comprehension/reading rate, showed mixed results in relationship to success of the distance group. Reading comprehension was strongly related to success but other variables, such as study skills and reading rate, were not. Reading comprehension was also significantly higher for the successful F2F students when the ANOVA was examined, but the MANOVA that compared successful to unsuccessful F2F students was not significant.

For self-perception, some interesting differences emerged between the successful and unsuccessful distance groups: Successful distance students reported more positive feelings about their scholastic competence before or within the first week of class. This result was not evident for the F2F learners. Neeman and Harter (1986) describe scholastic competence as confidence in the ability to master

coursework. Students with high confidence may be accurate judges of their own ability and feel more comfortable with self-directed learning. Other research has shown null results when self-efficacy has been examined for success in online classes (DeTure, 2004), but no research is available for low-contact classes.

Increasing self-efficacy can be achieved in several ways. Gibson (1998) stresses that confidence is enhanced when distance students have access to resources that are available to on-campus students such as tutors or study programs, are offered instruction in time management and stress management, and participate in orientation sessions offering direct contact with the instructor. Although all but two of the distance students participating in this research attended an orientation session that offered direct contact with the instructor, perhaps a more focused agenda emphasizing these skills would improve confidence for those who are less sure about their abilities to succeed in a distance class.

Making the Connection

Contact between instructor and student is considered a central component for learning both in F2F and distance environments (Chickering and Ehrmann, 1996). Contact provides ways for answering questions and making inquiries that can increase the interest and motivation of students (Silverman, 1999). The current research suggests that instructor-initiated contact with teleclass students does not increase chances of success in classes, which contradicts the only study that investigated instructor-initiated contact in low-contact distance environments (Towles, Ellis and Spencer, 1993). Instead, we found that student-initiated contact approached significance, and successful teleclass learners spent more than double the amount of student-initiated contact time with their instructor than unsuccessful ones.

Several suggestions have been made on how to increase contact time between instructor and learner in higher-contact computer-based learning environments. Applying these suggestions in lower-contact teleclass learning environments should be helpful. First, students need to be aware of the ways in which the instructor or mentor can be contacted (Silverman, 1999). Contact mechanisms can involve the computer, phone, video, fax, or in-person interaction (such as orientation, group meetings, field trips, workshops or individual meetings). Using several mechanisms may encourage students to contact the instructor or mentor with questions, or build rapport. The instructor should make sure that students know how to use the contact mechanisms by providing training, or asking students to complete tasks that include feedback to the instructor that verifies the skill, such as providing a location to a message board and asking the student to leave a message that the instructor can check (Baab, 1999).

Second, students should understand that they need to be assertive, active participants in the student-instructor relationship (Chickering and Ehrmann, 1996). Just as in F2F classrooms, the interaction should be encouraged by both instructor and learner. Students need to know that building a relationship with the instructor improves their chance of success in a class, and helps the instructor suit the class to the needs of the students involved (Easton, 2003). In turn, prompt feedback by instructors can further encourage exchange (Baab, 1999).

Assessments of Readiness

Valasek (2001) recommends that screening and advising potential distance students is important for their success, and that "self-tests" should be used to indicate individuals suited for such learning. The current research indicates three areas of importance that show good prediction of success even before the class initially meets. The first is reading ability, especially reading comprehension. The second is

confidence in abilities needed to succeed in the class. The third is willingness to maintain the interaction between instructor and student. Many variables could be related to this willingness, such as motivation and ability in self-directed learning. At the least, distance learners understand the importance of contacting the instructor and feel comfortable calling, emailing or otherwise contacting their instructor when help is needed or when a question arises. Instructors can encourage such contact by being accessible to students and making sure that students know how to use the technology that will enable the contact to continue.

Distance learning is here to stay. As more "traditional," and even on-campus students re-define who the distance student is, faculty and advisors must be equipped to help students achieve success. By recognizing variables that contribute to the success of distance learners versus F2F learners, we can better prepare students to choose between different learning formats and work on the prerequisite skills to increase their probability of success.

References

Baab, L. (1999). Coming and Going in All Directions: Preparing students for online learning. Paper presented at the Teaching in the Community Colleges Online Conference *Best Practices in Delivering, Supporting, and Managing Online Learning* in April 1999 at Honolulu, Hawaii. ERIC Document No. 469901.

Brown, J. I., Fishco, V. V., and Hanna, G. (1993). *Nelson-Denny Reading Test.* Itasca, IL: Riverside Publishing Company.

Carr, S. (2000). As distance education comes of age, the challenge is keeping the students. *Chronical of Higher Education, 46*(22), A39 – A41.

Chickering, A. W. and Ehrmann, S. C. (1996). Implementing the Seven Principles: Technology as lever. *American Association of Higher Education Bulletin 49*(2), 3 – 6.

Deka, T. S. (2000). *Study Skills Self-Report.* Saint Joseph, MO.: Missouri Western State University.

Denton, J. J., Clark, F. E., Rossing, R. G, and O'Connor, M. J. (1984). An examination of instructional strategies used with two-way television. *Journal of Classroom Interaction, 19*(2), 12 – 20.

DeTure, M. (1994). Cognitive style and self-efficacy: Predicting student success in online distance education. *American Journal of Distance Education 18*(1), 21 – 38.

Dille, B., and Mezack, M. (1991). Identifying predictors of high risk among community college telecourse students. *American Journal of Distance Education 5*(1), 24 – 35.

Fulford, C. P., and Zhang, S. (1993). Perceptions of Interaction: The critical predictor in distance education. *The American Journal of Distance Education 7*(3), 8 – 21.

Galusho, J. M. (1997). Barriers to learning in distance education. *The Infrastruction Network.* Retrieved July 15, 2005 from: http://www.infrastruction.com/barriers.htm

Garland, M. (1993). Ethnography penetrates the "I didn't have time" rationale to elucidate higher order reasons for distance education withdrawal. *Research in Distance Education 5*(2), 6 – 10.

Garrison, D. R. (1987). Researching dropout in distance education. *Distance Education 8*(1), 95 – 101.

Gibson, C. C. (1998). The distance learner's academic self-concept. In C.C. Gibson (Ed.) *Distance Learners in Higher Education: Institutional responses for quality outcomes* (p. 65-76). Madison, WI.: Atwood.

Guernsey, L. (1998). Distance education for the not-so-distant. *Chronicle of Higher Education 44*(29), A29 – A30.

Hogan, R. (1997). Analysis of student success in distance learning courses compared to traditional courses. Paper presented at the annual *Conference on Multimedia in Education and Industry* in July 1997 at Chattanooga, TN. ERIC Document No. 412992.

Minich, E. L. (1996). *Using student feedback to improve distance education.* Jacksonville, FL.: Florida Community College. ERIC Document No. 397893.

Moore, M. G. (1988). Introduction. In C.C. Gibson (Ed.) *Distance Learners in Higher Education: Institutional responses for quality outcomes* (p. 65-76). Madison, WI.: Atwood.

Moore, M. G. (1989). Three types of interaction. *The American Journal of Distance Education 3*(2), 1 – 6.

Moore, M. G., and Kearsley, G. (1996). *Distance Education: A systems view.* Albany, NY.: Wadsworth.

Neeman, J., and Harter, S. (1986). *Manual for the self-perception profile for college students.* Denver, CO.: University of Denver.

Pachnowski, L. M., and Jurczyk, J. P. (2000). Correlating self-directed learning with distance learning success. Paper presented at the annual meeting of the *Eastern Educational Research Association* at Clearwater, FL., in February 2000. ERIC Document No. 441000.

Ritchie, H., and Newby, T.(1989). Classroom lecture/discussion vs. live televised instruction: A comparison of effects on student performance, attitude, and interaction. *American Journal of Distance Education 3*(3), 36 – 45.

Schoenfeld-Tacher, R., McConnell, S., and Graham, M. (2001). Do No Harm – A comparison of the effects of on-line vs. traditional delivery media on a science course. *Journal of Science Education and Technology 10*(3), 257 – 265.

Silverman, R. M. (1999). *Guidelines for Good Practices: Effective instructor-student contact in distance learning.* Sacramento, CA.: Academic Senate for California Community Colleges. ERIC Document No. 432338.

Swan, K., Shea, P., Fredericksen, E., Pickett, A., Pelz, W., and Maher, G. (2000). Building knowledge, building communities: Consistency, contact and communication in the virtual classroom. *Journal of Educational Computing Research 23*(4), 359 – 383.

Valasek, T. (2001). *Student Persistence in Web-based Courses: Identifying a profile for success.* New Jersey: Raritan Valley Community College Center for the Advancement of Innovative Teaching and Learning. ERIC Document No. 466276.

Towles, D. E., Ellis, J. R., and Spencer, J. (1993). Student Persistence in a Distance Education Program: The Effect of Faculty-Initiated Contact. Paper presented at the annual forum of the *Association for Institutional Research* in May 1993 at Chicago, Illinois.

Tucker, S. Y. (2000). Assessing the Effectiveness of Distance Education Versus Traditional On-Campus Education. Paper presented at the annual meeting of the *American Educational Research Association* in April 2000 at New Orleans, Louisiana.

U.S. Department of Education. (2002). A profile of participation in distance education: 1999 – 2000. NCES Publication No. 2003-154). Jessup, MD.: Anna C. Sikora.

Wallace, L. (1996). Changes in the demographics and motivations of distance education students. *Journal of Distance Education 9*(1), 1 – 31.

Walter, T. and Siebert, A. (1990). *Student Success: How to succeed in college and still have time for your friends* (5th ed.). Fort Worth, TX.: Holt, Rinehart and Winston.

Woodley, A. and Parlett, M. (1983). Student drop-out. *Teaching at a Distance 24*, 2 – 23.

Zajkowski, M. E.(1997). Price and persistence in distance education. *Open Learning 12*(1), 12 – 23.

Endnotes

1. The *Nelson-Denny Reading Test* (1993) by J. I. Brown, V. V. Fishco, and G. Hanna is available from Riverside Publishing Company, 425 Spring Lake Drive, Itasca, IL 60143-2079.

2. The *Study Skills Self-Report* (2000) is available from T.S. Deka, Missouri Western State University, 4525 Downs Drive, Saint Joseph, MO 64507).

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About the Authors

Teddi Deka is an associate professor of Psychology at Missouri Western State University (Western). Like his co-author, Dr. Deka has been teaching teleclasses for several years, and has helped to expand and improve the program at Western.

Patrick McMurry is a professor of Economics at Missouri Western State University (Western). Like his co-author, Dr. McMurry has been teaching teleclasses for several years, and has helped to expand and improve the program at Western.

Athabasca University

Best Practices for Online Business Education

John R. Grandzol and **Christian J. Grandzol**
Bloomsburg University of Pennsylvania

Abstract

This integrative review of literature on online educational best practices is intended to provide a quick reference for those interested in designing online business courses and programs. Primarily American in its perspective, this review may be helpful for business schools seeking optimal online course designs that foster quality learning experiences comparable in outcomes to traditional methods. Paramount in this review is the emphasis on consistency, cohesiveness, and assessment.

Keywords: online business education; online course design

Introduction

The increasing popularity and acceptance of online education as an effective, efficient educational medium create both an opportunity and a threat for a college of business. An extensive body of literature confirms the probable future success of online education and generally supports the educational value of the medium. While debate continues on certain nuances, there is little doubt the medium is here to stay. Therefore, the question is not whether a college of business should pursue online education, but rather, how it should strategically respond to this growing challenge. Existing literature suggests the need to search for pedagogical approaches to online education that improve the quality of student learning, stimulate faculty intellectual growth, and enhance overall academic productivity (Bishop, 2003). According to Rungtusanatham, Ellram, Siferd, and Salik (2004), the "question of how courses and degree programs should be designed for effective delivery via the Internet is a nontrivial concern and challenge" (p. 101).

Recognizing online education's potential, it is important to identify best practices and establish standards that assure quality, comply with accrediting bodies, support faculty initiatives, and provide business students with a product that leads to a satisfying and wholly worthwhile learning experience. Quality transformation to online education requires participating faculty members and departments to challenge their current teaching roles. According to Fredericksen, Pickett, Pelz, Swan, and Shea (2000), "developing effective on-line instructors and instruction have both technical and instructional aspects that are not necessarily intuitive or analogous to the traditional classroom" (p. 10). If done effectively, faculty can use this opportunity to improve pedagogy, not only online, but in the classroom, as well (Thompson, 2001).

This article organizes a review of notable research findings in the field of online education. It identifies the current status of online education in the United States, recommendations/ standards of U.S. accrediting bodies, anecdotal research, and finally empirical research. Most of the research suggestions are then organized in easy to follow table format, allowing for quick reference. Ultimately, the reviewers establish the substantial potential of online education as an educational medium and argue the need for business educators to approach it with diligence.

Status of Online Education

Analysis of the online education market reveals interesting trends. Although online students comprise a relatively small percentage of the total American higher education market, key indicators show tremendous growth potential (Roach, 2002). A recent study of chief academic officers, financed by the Alfred P. Sloan Foundation, found overall online enrollments for U.S.-based institutions increased from 1.98 million in 2003 to 2.35 million in 2004, an 18.2 percent increase (Sloan Consortium, 2005). This growth rate is similar to the 19.8 percent found from 2001 to 2002 and the 22.9 percent found from 2002 to 2003. These growth rates are between 10 and 20 times the National Center for Education Statistics' (2005) expectations for growth in the entire United States higher education market. Most institutions have accepted online courses as an educational medium. For example, 62.5 percent of institutions that offer traditional undergraduate courses also offer undergraduate courses online (Sloan Consortium). The business discipline in particular has the highest reported levels of penetration, as 43 percent of institutions that offer face-to-face business programs also offer online business programs (Sloan Consortium). Additionally, more than half of institutions believe online education is critical to the long-term strategy of their institution, with 74 percent of public institutions and 41 percent of private institutions agreeing (Sloan Consortium).

To date, it appears that the biggest winners in online education are the propriety institutions, even though they serve a minority of online enrollees (Sloan Consortium, 2005). However, for-profit institutions serve over 20 percent of students in online degree and certificate programs, and because of increasing name recognition and efficiency, will probably continue to make significant in-roads in the market (Roach, 2002). The Sloan survey supports this trend, finding that for-profits continue to have the largest growth in the online education component, and are expecting rates greater than 40 percent , dwarfing the 15 percent expected for public institutions and 22 percent expected for private, non-profits (Sloan Consortium). It is clear, then, that institutions wanting to build or sustain enrollments face nimble and differentiated competition from proprietary institutions.

Popovich and Neel (2005) investigated a broad spectrum of institutional characteristics that relate to online courses and programs at AACSB-accredited business schools. These included such factors as the number of students, faculty qualifications, tuition rates, and length of programs among many others. Their sample of 163 business school deans indicated growth statistics consistent with overall online program results presented earlier: 53 percent offered online business programs, 67 percent indicated retention/ expansion of online programs, 80 percent represented public institutions, and new entrants to this market continued to increase.
Advantages and Disadvantages

The research body on online education is extensive, analyzing multiple facets of the medium. Since the intent of this review is to suggest standardized, best practices, there is no compelling

need to fully develop the tangential literature. We present only a cursory review as a foundation to satisfy our primary intention.

The advantages and disadvantages of online education have been well documented in the literature. The anecdotal advantages include: graduating technically literate students (Chisholm and Carey, 2002), flexibility, ameliorating the projected instructor shortage (Green and Gentemann, 2001), alleviation of overcrowding, reduced spending on construction, bolstering enrollment, large profits, extending the reach of elite universities (Roach, 2002), a more friendly learning environment (Sullivan, 2001), ability to work at one's own pace, reduced bias (Thornton, 1999), possibilities for reusing or reselling course materials (Manzo, 2000), access to the developing world and those geographically isolated (Durden, 2001; Symonds, 2001), reduction in costs associated with technology (Bruno, 1997), minimizing revenue loss due to transfer credits, increasing academic integrity by limiting transfer credits, improving graduation rates, allowing students to work according to their learning style (Benton, 2005), and reduction of costs associated with commuting and more demanding work (Jana, 1999).

The anecdotal disadvantages include: poor quality, lack of name recognition for some for-profits (Symonds, 2001), professor training costs, faculty resistance to change (Arnone, 2002; Manzo, 2000), financial aid constraints (Carnevale 2001; Symonds, 2001), lack of interactivity (Hereford, 2000), skepticism by employers (Carnevale, 2005), difficult medium for subjective course content, (Jana, 1999), online work loads and class size (Roach, 2002), technology gaps (Chisholm and Carey, 2002), high costs of entry (Gagne and Shepherd, 2001), administrative problems (Higgins, 1999), loss of unplanned interaction between faculty and students (Benton, 2005), loss of geographic competitive advantage (Strugatch, 1999), loss of scholarly control, and cannibalization of existing traditional programs (Mangan, 2001).

Accreditation

The process of developing online programs cannot be accomplished without reference to the accrediting bodies. In 2001, the eight U.S. regional accrediting commissions, in an attempt to hold online programs to high standards, collectively created a best practices statement to assist institutions in facilitating online programs. Their goal was to encourage imaginative experimentation, while promoting institutional quality to the highest degree. The commissions recommended five separate components of distance education activities to express the best practices and to provide a self-assessment framework. Standards were then developed by each local region and tend not to be as stringent.

A concise review of these five components might further encourage the need for institutionalized standards. Institutional Context and Commitment assures adequate technical facilities, compliance with copyright laws, appropriate academic oversight, and consistency with mission. Curriculum and Instruction stresses appropriate rigor and breadth for the specific degree, and the participation of academically qualified persons in all decisions. Faculty Support considers workload, compensation, ownership, and training. Student Support focuses on administrative, financial, and technical commitments to the continuation of the program for student completion. Finally, Evaluation and Assessment requires documentation of student achievement, student identification during exams, measures of program effectiveness, and continual self-evaluation (Regional Accrediting Commissions, 2001).

Of particular interest to a college of business is AACSB International's latest accreditation standards. AACSB International's mission is to "advance quality management education

worldwide through accreditation and thought leadership" (AACSB International, *n.d.*). A review of this organization's Eligibility Procedure and Standards for Business Accreditation (2003) yielded several important insights that must guide the actions of a college of business. Principally, AACSB's preamble states, "As part of each institution's effort to prepare its students for future careers, it should provide a total educational experience that emphasizes conceptual reasoning, problem-solving, and preparation for lifelong learning" (2003, p. 2). Sample guidance derived from these procedures and standards follows:

- An institution that uses a variety of educational delivery systems (including electronic) must demonstrate comparable quality of its educational programs.

- The business school's faculty in aggregate, administrators, and individual faculty share responsibility to ensure adequate student-faculty contact across the learning experiences; continuously improve instructional programs, innovate instructional processes, evaluate instructional effectiveness, and set high expectations for academic achievement (Standard #12).

- Participants and their interactions are at the center of much of what defines quality for higher education in business. The participant standards address quality in the educational process regardless of pedagogy or communication technologies utilized. This process includes maintaining staff for ongoing quality improvement of student support activities, such as academic assistance, academic advising, and career advising (Standard #8).

- Passive learning should not be the sole, or primary, model for collegiate business education. Faculty members' presentations or lectures, absent of additional interaction, are simply a form of information delivery, not higher education. Programs that are mostly or entirely conducted by distance learning will raise questions about opportunities for students to have appropriate interaction with faculty and other students; the school will have the burden of demonstrating that it provides significant learning interaction opportunities. A learning community is established when constituent groups have opportunities to learn from each other, in an environment that supports free expression and continuous learning.

- Faculty members should develop techniques and styles that engage students and make students responsible for learning goals. Faculty should adopt active learning methodologies and should challenge students by using such pedagogical approaches as problem-based learning, projects, simulations, etc.

- The description of educational attainment (credit hours) may need to be revised for distance learning to be more heavily dependent on demonstration of learning outcomes.

To assist institutions further, AACSB International published "Quality Issues in Distance Learning" (1999). These guidelines were intended not as a "how to" manual, but rather to provide insight on key issues salient to delivery of quality distance learning. Foremost is demonstration of how distance learning contributes to the mission, goals, and objectives of the business school, and how the school's distance learning approach differs from offerings of other providers. AACSB offers a set of seventeen recommendations that help to ensure quality. These include benchmarking against existing distance learning programs, creating and maintaining the necessary faculty resources for the distance learning program, supplementing content specialists

with curriculum design experts to create appropriate learning experiences, and directing sufficient resources to assessment issues.

The accrediting bodies urge institutions to seriously consider how to offer online courses in an environment that is at least as good as the face-to-face model. Therefore, it is obligatory that course developers first consult the relevant research to identify prescriptions for practice.
Empirical Research

The predominant efforts of researchers in online education have focused on comparing online education to that of the traditional, face-to-face method. This is understandable given the concern about online education as a viable alternative to the traditional classroom. Many studies compare the cognitive learning outcomes of courses taught in both media using statistical tests of final grades, grades on papers, student evaluations, GPAs, test scores, etc. A review of Russell's (2005) "nosignificantdifference" website illustrates this point well; he lists hundreds of studies that applied this standard approach. For example, Dellana, Collins, and West (2000) concluded that online and face-to-face education are equally effective because final scores in their undergraduate management science course were not significantly different. On the other hand, Brown and Liedholm (2002) found that traditional microeconomics students performed better on exams than their online counterparts. Seemingly, one could find sufficient warrant to justify or not justify online education from these kinds of studies. However, although certainly helpful in establishing the medium, there are really only limited insights (in regard to best practice) that can be gained from such efforts, and no one can definitively conclude whether online education is equivalent to or better than the traditional classroom from a learning outcomes perspective. Additionally, striving to make online education as good as face-to-face learning may result in overlooking its distinct potential (Twigg, 2000; McDonald, 2002).

More recent efforts have sought to extend the research base beyond no significant difference (Swan, 2003; Grandzol, Eckerson, and Grandzol, 2004). Studies in this area include gender and age dimensions (Huang, 2002; Colorito, 2001; Nilan, 2000; McGrath, Middleton, and Crissman, 2002), interactivity (Schutte, 1998), and student retention (Vignare, 2003; Stallings, 2002; Hiltz, Coppola, Rotter, Toroff, and Benbunan-Fich, 2000). Swan (2003) reported that online courses may be more supportive of divergent thinking, complex understanding, and reflection because they allow students to explore multiple perspectives in a less intimidating environment. These kinds of studies form a useful knowledge base for institutions as they consider implementing online education.

Perhaps the most useful and powerful studies, though, are the ones dedicated to empirically validating best practices. Many of these studies use education and psychology theories to determine how students best learn in online environments. They can provide clear guidance for structuring and developing more effective online courses.

Recent efforts by some researchers have investigated the emergent field of the psychology of online education (Yan, 2004). These researchers study the science-based psychological factors and processes that may contribute to optimal learning. Researchers in this field assert that traditional learning practices may not be suitable for the online environment because of vast differences in the way knowledge is presented, stored, and delivered (Yan, 2004).

Prominent work in this area by Mayer tested what combinations of multimedia resulted in the greatest transfer of learning (Mayer, 2001; Mayer and Moreno, 1998). For example, Mayer found students learned better when animation was supported by narration, rather than by text. He attributed this to the split-attention effect, which occurs when a cognitive resource becomes

overloaded. When a student is viewing animation and text together, they are using only their visual working memory, and therefore struggle to "split" their attention. In contrast, when a student hears narration with the animation, they are using both their visual and auditory working memories. These findings are consistent with dual coding theory (DCT), which suggests that visual illustrations help increase comprehension and retention by activating mental images in students (Clark and Paivio, 1991). This work has utility for online course design, especially when PowerPoint slides constitute a portion of the course.

Rungtusanatham and colleagues (2004) developed a typology of Web-based business education and raised several design issues. The authors' purpose was to "help institutions effectively match intended educational goals to the appropriate type of online distance education to pursue" (p. 103). Design issues included whether faculty-driven or design team-driven course developments were more effective. Additionally, they identified three issues that affect the design, delivery, and maintenance of online education. These included content-related (i.e., knowledge depth), delivery-related (i.e., level of student-faculty interactions), and learning-related (i.e., pace of student learning). From these issues, the authors developed their typology for which type of online education best fulfills intended education goals.

Table 1. Types of Online Distance Education

Differentiating Factors	Overview Model	Overview Model with Feedback	Technical-Skills Model	Managerial Learning Model
Content-Related Issues Knowledge Depth	Introductory	Introductory	Skills Competency	Skills Competency & Managerial Decision Making
Content Development Approach	Faculty or Design-Team Driven	Faculty or Design-Team Driven	Design-Team Driven	Design-Team Driven
Content Change Flexibility	Low	Low	Low, but more so than previous two models	High
Delivery Related Issues Interactions Level	None to Limited	Limited	Limited	High
Interactions Flexibility	Low	Low	Low	High
Learning-Related Issues Double-Loop Learning Opportunity	Minimal	Minimal	Average	Maximal
Learning Pace Control	Student or Faculty	Student or Faculty	Student or Faculty	Primarily Faculty

Table 1 provides guidance on best practices in course development. For example, in a typical MBA program, there may be few introductory and rudimentary courses. Instead, most of the courses focus on either skills competency (financial management, etc.) or managerial decision making. For example, the 2003 AACSB International accreditation standards denote that master's level courses should develop such abilities as applying knowledge in new and unfamiliar circumstances. These higher order abilities cannot be accomplished in an introductory course. Therefore, courses developed at the master's level should be design-team driven, not individual faculty-driven, should allow for easy content change, promote high levels of interaction, and the learning pace should be primarily set by the professor. It is essential that these issues are considered when designing courses. Simply posting lecture notes is not sufficient, according to best practice, for teaching more complex, managerial related issues. Live chats, limited class size, and asynchronous discussion boards must be utilized to facilitate the appropriate learning goal.

Essential to the online education experience is what various researchers have termed "community of learners," "knowledge-building communities," "virtual learning communities," or "communities of inquiry." This concept urges course design such that students can contribute to the evolving knowledge base of the group, while developing underlying social networks within their course (Scardamalia and Bereiter, 1996; Lave and Wenger, 1990). Communities of learners are consistent with the assertions of Alexander Astin (1993), a renowned higher education researcher, who found that the quality and quantity of interactions with peers and faculty in both academic and social activities were the most important factors fostering student engagement, a powerful predictor of student success. Therefore, it is essential that online courses are intentionally developed to allow student-to-student interaction and student-to-faculty interaction on both the academic and social levels.

Garrison (2003) identified three structural elements of a community of inquiry. First is cognitive presence, which occurs when critical reflection and discourse are encouraged. To accomplish this, courses must allow for reflective inquiry and self-directed learning. The second element is social presence, which arises when students feel a personal and emotional connection to the subject matter, their professor, and their peers. Finally, teaching presence occurs when the professor creates and ensures the continued functioning of the community of inquiry. Professors accomplish this by designing courses effectively, facilitating discourse, and directing instruction (Shea, Fredericksen, Pickett, and Pelz, 2003). Garrison (2003) asserted that an appropriate balance and integration of the three elements led to effective learning. Therefore, professors must consult best practices that will enable these communities to emerge.

There are several useful summaries of online education best practice. Swan (2003) synthesized several other researchers' work on principles of good habits in undergraduate and online education to arrive at a set of organizing principles for online developers and instructors (Janicki and Liegle, 2001; Chickering and Gamson, 1987).

They include:

- Clear goals and expectations for learners

- Multiple representations of course content

- Frequent opportunities for active learning

- Frequent and constructive feedback

- Flexibility and choice in satisfying course objectives

- Instructor guidance and support

Similarly, Keeton, Sheckley, and Krejci-Griggs (2002) reviewed 20 years of research on educational instruction to develop eight principles of instruction, each with specific strategies that have the largest effects in explaining learning gains. Of import for this topic, these authors are now researching the extent to which faculty use these practices in online environments to aid teaching improvement. Interestingly, results from Phase I of their ongoing study indicate that "the most highly endorsed principles are ones that focused on the processes of learning rather than the assessment of their outcomes" (Keeton, 2004, p. 94). Recognizing the increasing emphasis on assessment, this is clearly an area ripe for improvement.

Anderson, Rourke, Garrison, and Archer (2001) suggested that increased use of teaching presence may lead to more efficacious text-based learning. Teaching presence is "the design, facilitation, and direction of cognitive and social processes for the realization of personally meaningful and educationally worthwhile learning outcomes" (p. 5). Anderson et al., asserted that analyzing the teaching presence components of: 1) instructional design and organization; 2) facilitate discourse; and 3) direct instruction may be helpful in diagnosing teaching difficulties, thereby increasing the quality of faculty messages, and reducing the quantity of online discussion postings. To accomplish this, the authors devised codes that indicate presence of the three components in conference transcripts. For example, identifying areas of agreement and disagreement, seeking consensus, reinforcing student contributions, setting the climate for learning, drawing in participants, and assessing the efficacy of the process are evidence of facilitating discourse. Faculty seeking to improve their teaching presence should consider engaging in these kinds of activities.

The process of developing online courses requires faculty to do more than just try to duplicate the classroom online. Faculty must transform instruction, requiring fundamental rethinking of how to achieve learning objectives given the opportunities and limitations of the online environment (Shea, Pelz, Fredericksen, and Pickett, 2002). Table 2 illustrates a list of best practices developed from various learning theories and research studies. As Hiltz, Zhang, and Turoff asserted, the evidence is overwhelming that online education tends to be as effective, or more effective than traditional delivery. The focus, then, must be on learning which pedagogical techniques work best in the online environment. Each best practice provides positive ways to design and implement online courses to maximize student learning while fostering a community of learners.

Table 2. Online Education Best Practices

	Description of Desired Practice	Author(s)
Course Design & Delivery		
1.	A consistent structure is vital for online success. • This allows students to learn new material without learning a new structure each course.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000); Shea, Fredericksen, Pickett, & Pelz (2003)
	The greater the consistency among course modules, the more satisfaction students had with the course, the more they thought they learned,	Shea, Fredericksen, Pickett, Pelz, & Swan (2001)

	and the more interaction they thought they had with their instructor. Creating consistency is unlikely if faculty are working in isolation, without commonly shared standards. Therefore, standards and best practices should be institutionalized.	Hartman, Dziuban, & Moskal (2000)
2.	Courses should be complete on the day class starts. • While this may inhibit spontaneity, it reinforces consistency and allows faculty to concentrate on teaching and participating fully.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000)
3.	The online environment fosters a teaching style that is learner-centered, instead of teaching-centered. Therefore, redirect time from covering content to facilitating student learning (mentor or coach).	Geith (2003)
4.	Include navigational documents and instructions that specifically tell students where to go and what to do next.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000)
5.	Match course time commitments to evaluation. For example, if 60% of the course is spent on discussion, why should discussion only count for 25% of the grade? The greater the percentage of the course grade based on discussion, the more satisfied students were, the more they thought they learned from the course, and the more interaction they had with their instructor and peers. The greater the percentage of the course grade based on cooperative or group work, the less students thought they learned from the course.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000) Shea, Fredericksen, Pickett, Pelz, & Swan (2001)
6.	Instructors should add something new every 2-3 days to keep the class moving.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000)
7.	Keep the course clean of accidental postings and empty documents.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000)
8.	Use a non-graded icebreaker the first day to foster community and help the students practice chatting.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000)
9.	Limit the number of hypertext links per page.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000)
10.	Automate testing and feedback when possible.	Swan (2003)
11.	Online courses that encouraged and rewarded collaboration, but did not require discussion from all students were the most successful.	Holland (2000)
12.	Utilize self-assessments.	Holland (2000)
13.	Give prompt and constructive feedback.	Shea, Fredericksen, Pickett, Pelz, & Swan (2001)

	Because students expect immediate feedback in the online environment, it is essential to establish guidelines on expected turnaround time for answering e-mails, etc. This may help avert unrealistic student expectations regarding response times.	Perreault, Waldman, & Alexander (2002)
14.	Ways to hold a meaningful chat: • Resist the temptation to respond to every student's response • Assign individual students the task of summarizing the discussion • Employ student-led discussion where students devise critical thinking questions • Ask specific students to clarify a point • Ask follow-up questions	Shea, Fredericksen, Picket, & Pelz (2003)
15.	Use tracking mechanisms to reward reading as well as responding to messages.	Swan (2003)
16.	Encourage divergent thinking skills by using open-ended questions, and modeling encouragement for diverse points of view. Encourage convergent thinking by using activities such as written assignments, one-on-one tutorials, small group collaboration, and self-testing.	Swan (2003)
17.	Develop grading rubrics for participation.	Swan (2003)
18.	Faculty should seek to establish "swift trust" during the first week by establishing a lively and responsive environment.	Hiltz, Arbaugh, Benbunan-Fich, & Shea (2004) Coppola, Hitlz, & Rotter (2002)
19.	Present explanations of animations (such as PowerPoint slides) in spoken form instead of text form. Simultaneously present narration and animation. Narrate in a conversational tone. Allow the learner to have control over the pace of the presentation.	Mayer (2001); Mayer & Moreno (1998); Swan (2004)
Student Services		
20.	Include an orientation to the class, including welcome, contact information, evaluation procedures, etc. The more students can get to know each other and the professor at this point, the greater likelihood that active learning will take place.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000) Benke, Bishop, Thompson, Scarafiotti, & Schweber (2004)
21.	Include a student services area that provides administrative reference materials (policies & procedures), degree program reference materials, a student lounge (forum for ad hoc discussions –	Hislop (2000)

	both academic and social). Have faculty participate in these ad hoc discussions, too.	Alexander (2005)
	Student service center should be comprehensive. Provide a single point of contact for all issues. Have one point of contact for every 200-250 students.	McGrath, Middleton, & Crissman (2002)
	Student support is an essential component of online education. Many institutions neglect student support in deference to developing courses and opening them for enrollment. Have a student services section on the WebSite that links to various support resources available at the institution.	
22.	Make human tutors available.	Swan (2003)
Administration		
23.	Establish quality control guidelines that address issues of consistency.	Swan (2003)
24.	Faculty should participate in relevant training before developing online courses.	Donnelli & Klein (2005)
25.	Faculty should consult selected "best-courses" that serve as a model for development.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000)
26.	Utilize an outside or peer reviewer.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000); Thompson (2003)
27.	Faculty should design online courses more as communication and collaboration environments than as repositories for content.	Dziuban, Hartman, Moskal, Sorg, & Truman (2004)
28.	Build in variety: some students did better with PowerPoint slides while others preferred text outlines.

Consider using a cyclic design, whereby each lesson has elements of interest to all learning styles (i.e. text readings, case studies, journals, research projects) | Holland (2000)

Danchak (2004) |
29.	Be careful using too much multimedia, especially video, because of transfer issues.	Holland (2000)
30.	The maximum number of students faculty believed they could effectively teach online is 25.	Hartman & Truman-Davis (2001)
31.	There are several different ways to organize online courses. Several researchers promote the modular system of curricular design because it builds on concepts of social learning, mental processing, and systems thinking.	Wentling & Park (2001); Fredericksen, Pickett, Pelz, Swan, & Shea (2000)
32.	Utilize "web vets" in trainings.	Hartman, Dziuban, & Moskal (2000)
33.	Faculty saw a 25% time savings in the online environment compared to the traditional environment. However, this excludes the time for course development, which was substantially more in the online environment.

To save time and utilize technology's power, one | Waddoups, Hatch, & Butterworth (2003)

Bishop (2003) |

	can reduce instructor grading time by placing previously hand-graded activities online, reducing the amount of time spent on lecture, and increasing the percentage of time spent on interaction.	

Conclusions

As evidenced from this review of relevant literature, colleges of business should seek to institutionalize online program and course standards. This will provide the consistency among individual courses that contributes to overall program quality and leads to intended program outcomes. While individual faculty creativity and unique style should not be suppressed, failing to learn from others' experiences and the results of legitimate research inhibits program quality. Course designs should be based on what learning researchers are establishing as most effective. Focusing too intently on creating courses without the end users' learning in mind will most certainly result in less than the desired educational product.

Future research endeavors will likely continue along a path of study similar to that identified in this review. One opportunity that warrants additional investigation is to find if discipline-specific differences in optimal learning strategies and course designs exist. Collaboration among business educators and learning psychologists could produce strategies tailored to the needs of business students. Researchers may also study which design features and strategies contribute the most to such outcomes as student satisfaction, student interaction, faculty satisfaction, and academic achievement. For example, analyzing online course design in the context of dual coding theory may add substantial insight. DCT has been utilized in a variety of educational settings to study the effects of concreteness, imagery, and associative organization on comprehension, retrieval, student achievement, and ratings of teacher and course effectiveness (e.g. Clark and Paivio, 1991; Paivio, Khan, and Begg, 2000; Paivio, 1971; Paivio, Walsh, and Bons, 1994). It, therefore, may provide a theoretical base to pursue further study in this area. Other research endeavors range from individualized course content and assessment to student learning style. These approaches should enable even more targeted solutions. The study of online education has so far been primarily based on the activities and strategies found in the traditional classroom, just in a remote setting. Researchers might investigate alternative methods that more effectively deliver course content by utilizing online learning platforms' unique capabilities. Finally, the authors suggest that convergence of research efforts will further the literature. Researchers should extend their research from simply studying their own unique courses to including various content and design experts that can study the efficacy of entire programs.

This review identified insights from the burgeoning body of research in online education. Certainly, not all research results were included and many more insightful findings will be forthcoming. However, this review identifies and recommends notable findings and will prove valuable for administrators and faculty interested in pursuing online business education. Considering the inevitable growth of online education, the constant need of business employees to "re-tool" in the knowledge society, and the necessity of business programs to offer quality educational experiences, this is a critical and worthwhile endeavor.

References

AACSB International. (*n.d.*). *AACSB website.* Retrieved May 5, 2006 from:
      http://www.aacsb.edu/

AACSB International. (2003). *Eligibility procedures and standards for business accreditation.*
      Retrieved October 2, 2004 from: http://www.aacsb.edu/accreditation/standards.asp

AACSB International. (1999). *Quality issues in distance learning.* St. Louis, MO.

Alexander, M. (2005). Road Map for Success: Developing and implementing an onlineoperations
      plan. Paper presented at the *Annual Conference of the Center for Internet Technology* in
      May 2005 at Denver, CO.

Anderson, T., Rourke, L., Garrison, D. R., and Archer, W. (2001). Assessing teaching presence in
      a computer conferencing context. *Journal of Asynchronous Learning Networks 5*(2), 1 –
      17. Retrieved January 15, 2004 from:
http://www.sloan-c.org/publications/jaln/v5n2/pdf/v5n2_anderson.pdf

Arnone, M. (2002). Historically black colleges grapple with online education. *The Chronicle of
      Higher Education 48*(30) A27 – A28. ERIC Document No. EJ645463.

Astin, A. W. (1993). *What Matter in College: Four critical years revisited.* New York:
      Macmillan.

Benke, M., Bishop, T., Thompson, M., Scarafiotti, C., and Schweber, C. (2004). Promoting
      student support and satisfaction in online learning. In J. Bourne and J. C. Moore (Eds.)
      Elements of Quality Online Education: Into the mainstream. (p. 13-27). Needham, MA.:
      Sloan-C.

Benton, T. H. (2005). Let the experiment begin. *Chronicle of Higher Education 51*(43). C1 – C4.

Bishop, T. (2003). Linking Cost Effectiveness with Institutional Goals: Best practices in online
      education. In J. Bourne and J. C. Moore (Eds.) *Elements of Quality Online Education:
      Practice and direction.* (p. 75-86). Needham, MA.: Sloan-C.

Brown, B. W. and Liedholm, C.E. (2002). Can web courses replace the classroom in principles of
      microeconomics? *The American Economics Review 92*(2), 444 – 448.

Bruno, J. (1997). Online classes bring universities to living room. *Los Angeles Business Journal
      19*(13).

Carnevale, D. (2005). Employers still prefer traditional degrees over online learning, study finds.
      The Chronicle of Higher Education 52(5), A43.

Carnevale, D. (2001). Report to congress says financial aid rules are hurting distance education.
      The Chronicle of Higher Education 47(19), A34.

Chickering, A. W., and Gamson, Z. (1987). *Seven principles for good practice in undergraduate
      education.* Racine, WI.: The Johnson Foundation.

Chisholm, I., and Carey, J. (2002). Information Technology Skills for a Pluralistic Society: is the playing field level? *Journal of Research on Technology in Education 35*(1), 58 – 79.

Clark, J. M., and Paivio, A. (1991). Dual coding theory and education. *Educational Psychology Review 3*(3), 149 – 210.

Colorito, R. (2001). Learning online. *Indiana Alumni Magazine 64*(1).

Coppola, N. W., Hiltz, S. R., and Rotter, N. (2002). Becoming a Virtual Professor: Pedagogical roles and asynchronous learning networks. *Journal of Management Information Systems 18*(4), 169 – 190.

Dellana, S., Collins, W., and West, D. (2000). Online education in a management science course – effectiveness and performance factors. *Journal of Education for Business 76*(1), 43 – 47. ERIC Document No. EJ617475.

Durden, W. (2001, October). Liberal arts for all, not just the rich. *The Chronicle of Higher Education 48*, B20.

Fredericksen, E., Pickett, A., Pelz, W., Swan, K., and Shea, P. (2000). Student satisfaction and perceived learning with online courses: Principles and examples from the SUNY learning network. In J. Bourne (Ed.) *Online Education: Learning effectiveness and faculty satisfaction: Volume 1.* (p. 7-36). Needham, MA.: Sloan-C.

Gagne, M., and Shepherd, M. (2001). Distance learning in accounting. *T.H.E. Journal 28*(9), 58 – 65.

Garrison, D. R. (2003). Cognitive Presence for Effective Asynchronous Online Learning: The role of reflective inquiry, self-direction, and metacognition. In J. Bourne and J. C. Moore (Eds.) *Elements of Quality Online Education: Practice and direction.* (p. 47-58). Needham, MA.: Sloan-C.

Grandzol, J. R., Eckerson, C. A, and Grandzol, C. J. (2004). Beyond No Significant Difference: Differentiating learning outcomes using multidimensional content analysis. *DEOSNEWS 13*(8). Retrieved January 15, 2004 from: http://www.ed.psu.edu/acsde/deos/deosnews/deosnews13_8.pdf

Green, R., and Gentemann, K. (2001). Technology in the Curriculum: An assessment of the impact of online courses. *George Mason University website.* Retrieved January 13, 2005 from: http://assessment.gmu.edu/reports

Hereford, L. (2000). Virtually no consistency in online college courses. *Community College Week 12*(15), 8 – 9.

Higgins, C. (1999). Going the Distance. *Business NH Magazine 16*(29).

Hiltz, S. R., Arbaugh, J. B., Benbunan-Fich, R., and Shea, P. (2004). ALN Research: What we know and what we need to know about contextual influences. In J. Bourne and J. C. Moore (Eds.) *Elements of Quality Online Education: Into the Mainstream.* (p. 109-124). Needham, MA.: Sloan-C.

Hiltz, S. R., Coppola, N., Rotter, N., Toroff, M., and Benbunan-Fich, R. (2000). Measuring the Importance of Collaborative Learning for the Effectiveness of ALN: A multi-measure, multi-method approach. In J. Bourne (Ed.) *Online Education: Learning effectiveness and faculty satisfaction: Volume 1.* (p. 101-119). Needham, MA.: Sloan-C.

Hiltz, S. R., Zhang, Y., and Turoff, M. (2002). Studies of effectiveness of learning networks. In J. Bourne and J. C. Moore (Eds.) *Elements of Quality Online Education.* (p. 15-41). Needham, MA.: Sloan-C.

Hislop, G. (2000). Working professionals as part-time online learners. In J. Bourne (Ed.) *Online Education: Learning effectiveness and faculty satisfaction: Volume 1.* (p. 7-36). Needham, MA.: Sloan-C.

Huang, H. (2002). Toward constructivism for adult learners in online learning environments. *British Journal of Educational Technology 33*(1), 27 – 37.

Jana, R. (1999). Getting the most out of online learning. *InfoWorld 21*(37), 119.

Janicki, T., and Liegle, J. O. (2001). Development and Evaluation of a Framework for Creating Web-based Learning Modules: A pedagogical and systems approach. *Journal of Asynchronous Learning Networks 5*(1), 58 – 84. Retrieved January 15, 2004 from: http://www.sloan-c.org/publications/jaln/v5n1/v5n1_janicki.asp

Keeton, M. T. (2004). Best Online Instructional Practices: Report of phase 1 of an ongoing study. *Journal of Asynchronous Learning Networks 8*(2), 75 – 100.

Keeton, M. T., Scheckley, B. G., and Krecji-Griggs, J. (2002). *Effectiveness and Efficiency in Higher Education for Adults.* Chicago: Kendall-Hunt.

Lave, J., and Wenger, E. (1990). *Situated Learning: Legitimate peripheral participation.* Cambridge, UK.: Cambridge University Press.

Mangan, K. (2001). Expectations evaporate for online MBA programs. *The Chronicle of Higher Education 48*(6), A31 – A32.

Manzo, K. (2000). Avoiding e-Class Suites: Balancing the rights of faculty and colleges. *Community College Week 12*(7).

Mayer, R. E. (2001). *Multimedia Learning.* New York: Cambridge University Press.

Mayer, R., and Moreno, R. (1998). A Split Attention Effect in Multimedia Learning: Evidence for dual processing systems in working memory. *Journal of Education Psychology 90*(2), 312 – 320.

McDonald, J. (2002). Is "as good as face-to-face" as good as it gets? *Journal of Asynchronous Learning Networks 6*(2), 10 – 23. Retrieved January 25, 2005 from: http://www.sloan-c.org/publications/jaln/v6n2/v6n2_macdonald.asp

McGrath, J., Middleton, H. K., and Crissman, T. (2002). World Campus: Setting standards in student services. In J. Bourne and J. C. Moore (Eds.) *Elements of Quality Online Education.* (p. 83-100). Needham, MA.: Sloan-C.

National Center for Educational Statistics (2005). *Projections of education statistics to 2014.* Retrieved April 14, 2006 from: http://nces.ed.gov/pubs2005/2005074.pdf

Nilan, P. (2000). You're hopeless I swear to God: Shifting masculinities in classroom talk. *Gender and Education 12*(1), 141 – 151.

Paivio, A. (1971). *Imagery and verbal processes.* New York: Holt, Rinehart and Winston.

Paivio, A., Khan, M., and Begg, I. (2000). Concreteness and relational effects on recall of adjective-noun pairs. *Canadian Journal of Experimental Psychology 54*(3), 149 – 159.

Paivio, A., Walsh, M., and Bons, T. (1994). Concreteness effects on memory: When and why? Journal of Experimental Psychology: *Learning, Memory, and Cognition 20*(5), 1196 – 1204.

Popovich, C. J. and Neel, R. E. (2005). Characteristics of distance education programs at accredited business schools. *The American Journal of Distance Education 19*(4), 229 – 240.

Regional Accrediting Commissions (2001). *Best practices for electronically offered degree and certificate programs.* Retrieved January 13, 2005 from: http://www.wcet.info/Article1.htm

Roach, R. (2002). Staying connected. *Black Issues in Higher Education 19*(18), 22 – 25.

Rungtusanatham, M., Ellram, L. M., Siferd, S. P., and Salik, S. (2004). Toward a typology of business education in the Internet Age. *Decision Sciences Journal of Innovative Education 2*(2), 101 – 120.

Russell, T. L. (2005). *No significant difference phenomenon.* Retrieved January 12, 2006 from: http://www.nosignificantdifference.org/

Scardamalia, M., and Bereiter, C. (1996). Computer support for knowledge-building communities. In T. Koschmann (Ed.) *CSCL: Theory and Practice of an Emerging Paradigm.* Mahwah, NJ.: Lawrence Erlbaum Associates.

Schutte, J. (1998). Virtual teaching in higher education. *California State University, Northridge website.* Retrieved January 13, 2005 from: http://www.csun.edu/sociology/virexp.htm

Shea, P. J., Fredericksen, E. E., Pickett, A. M., and Pelz, W. (2003). A preliminary investigation of teaching presence in the SUNY learning network. In J. Bourne and J. C. Moore (Eds.) *Elements of Quality Online Education: Practice and direction.* (p. 279-312). Needham, MA.: Sloan-C.

Shea, P. J., Fredericksen, E. E., Pickett, A. M., Pelz, W., and Swan, K. (2001). Measures of learning effectiveness in the SUNY learning network. In J. Bourne and J. C. Moore

(Eds.) *Online Education: Learning effectiveness, faculty satisfaction, and cost effectiveness.* (p. 31-54). Needham, MA: Sloan-C.

Shea, P. J., Pelz, W., Fredericksen, E. E., and Pickett, A. M. (2002). Online teaching as a catalyst for classroom-based instructional transformation. In J. Bourne and J. C. Moore (Eds.) *Elements of Quality Online Education.* (p. 103-123). Needham, MA.: Sloan-C.

Sloan Consortium (2005). *Growing by Degrees: Online education in the United States.* Retrieved January 10, 2006 from: http://www.sloan-c.org/resources/growing_by_degrees.pdf

Stallings, D. (2002). Measuring success in the virtual university. *Journal of Academic Librarianship 28*(1), 47 – 53.

Strugatch, W. (1999). Square-headed professors. *LI Business News 46*(18), 1B2.

Sullivan, P. (2001). Gender differences and the online classroom. *Journal of Research and Practice 25*(10), 805 – 818.

Swan, K. (2004). Learning Online: A review of current research on issues of interface, teaching presence and learner characteristics. In J. Bourne and J. C. Moore (Eds.) *Elements of Quality Online Education: Into the Mainstream.* (p. 63-79). Needham, MA.: Sloan-C.

Swan, K. (2003). Learning effectiveness: What the research tells us. In J. Bourne and J. C. Moore (Eds.) *Elements of Quality Online Education: Practice and direction.* (p. 13-45). Needham, MA.: Sloan-C.

Symonds, W. (2001). Giving it the old online try. *Business Week 37*(60), 76 – 79.

Thompson, M. M. (2001). Faculty satisfaction in Penn State's World Campus. In J. Bourne and J. C. Moore (Eds.) *Online Education: Learning effectiveness, faculty satisfaction, and cost effectiveness.* (p. 129-144). Needham, MA.: Sloan-C.

Thompson, M. M. (2003). Faculty satisfaction in the online teaching-learning environment. In J. Bourne and J. C. Moore (Eds.) *Elements of Quality Online Education: Practice and direction.* (p. 189-212). Needham, MA.: Sloan-C.

Thornton, C. (1999). Back to school, web style. *PC World 17*(7), 39 – 40.

Twigg, C. (2000). *Innovations in Online Learning: Moving beyond no significant difference.* The National Center for Academic Transformation. Retrieved January 25, 2005 from: http://www.center.rpi.edu

Vignare, K. (2003). Longitudinal success measures for online learning students at the Rochester Institute of Technology. In J. Bourne and J. C. Moore (Eds.) *Elements of Quality Online Education: Practice and direction.* (p. 261-278). Needham, MA.: Sloan-C.

Yan, Z. (2004). The psychology of e-learning: Why, what, and how? In J. Bourne and J. C. Moore (Eds.) *Elements of Quality Online Education: Into the mainstream.* (p. 81-91). Needham, MA.: Sloan-C.

About the Authors

Christian J. Grandzol
Bloomsburg University of Pennsylvania
400 East Second Street
Bloomsburg PA 17815

John. R. Grandzol PhD
Bloomsburg University of Pennsylvania
400 East Second Street
Bloomsburg PA 17815

Two Book Reviews –

Managing E-Learning Strategies – Design, Delivery, Implementation and Evaluation

The E-Learning Quick Checklist

Reviewed by: Stephen Murgatroyd, Chief Executive, Innovation Expedition and Visiting Professor, University of Middlesex, UK.

Despite its title, this substantial book has nothing to do with strategy. It is rather an attempt to outline best practices for the design, development and delivery of e-learning courses, programs and activities. The term "strategy" does not appear in the index, is not a subject for a chapter and is not at all a focus for this book.

The book is designed for individuals pursuing formal studies in distance education and e-learning as well as those who are challenged with the task of developing e-learning courses or programs. It contains practical and useful advice, check-lists and a summary of suggested management issues for each section. For those new to the world of e-learning, the book will be very valuable.

The book looks at e-learning from eight perspectives – institutional, management, technological, pedagogical, ethical, interface design, resource support and evaluation and uses a definition of e-learning which is learner centred. Despite the claim, the book is missing a real focus on the design and development of authentic tasks from which significant self-directed learning can be derived for learners at any age. That is, the notion of knowledge is problematic. For a book proclaiming learner centeredness, it is still focused strongly on the instructor and institutional requirements for learning.

Each of the eight topics is looked at in a chapter. Each chapter has several short, trite and pedantic sections which hint at a topic and offer some slight insights, sometimes based on research. These sections are often too short to be useful, or raise issues which are not then fully explored or resolved. The chapter ends with substantial checklists – the heart of the book. The checklists often provide more insights than the longer sections of the chapter.

There are other issues with the book. The book cries out for case studies – there aren't any substantial studies, though very short references are made to examples and there are a couple of vignettes. The book cries out for examples of obvious mistakes that have been made by those of us who have designed programs, courses and activities, and there are many – there aren't any. The book cries out for references to the extensive and valuable evaluative work of WCET on student services using the web – such references are absent, even though there is a short section on student services. While there are references to research studies, many of them are from the US – which is generally in a "catch up" mode in this field rather than leading. For readers based outside of the US, some of the references cited will be problematic, since they assume a US audience – the material on copyright, for example. But generally, there are some resources here which are helpful.

The E-Learning Quick Checklist is an accompanying volume containing all of the checklists from the main text. At slightly less than half the price of the main text, it is a valuable resource to have on the desk as the design work for a new program or course begins or as a workshop on e-learning takes place. In many ways, the checklists is a better summary of the main ideas from this author and represents better value for money.

June - 2006

Book Review – Web-based Distance Education for Adults

Authors: Barbara A. DuCharme-Hansen and Pamela A. Dupin-Bryant (2004). *Web-based Distance Education for Adults. 145 pages.* Softcover. Malabar, FL.: Krieger Publishing Company. ISBN: 157 5242 214.

Reviewed by: Shanta Rohse, Centre of Distance Education, Athabasca University – Canada's Open University

It is not surprising that books that advise educators about effective ways to use technologies to support and enhance learning or to meet business objectives continue to be in demand (Diana Laurillard's Rethinking University Teaching, 2001; Gilly Salmon's E-Moderating, 2004; and Marc Rosenberg's E-Learning, 2001 are some prominent examples in my collection). In the cacophony of promises that technology will improve the quality of teaching and learning, vendors who continually reposition themselves in a shifting marketplace, and students who are often more proficient in the new technologies than we, we yearn to harmonize our aspirations and our observed outcomes for Web-based education.

Barbara DuCharme-Hansen and Pamela Dupin-Bryant's contribution to this genre recognizes adult learning principles and learner-centredness as paramount to effective Web-based education. They promise a pragmatic resource for all practitioners tasked with teaching adult learners, whether in higher education, government agencies or private industry. Part of the Professional Practice in Adult Education and Lifelong Learning series edited by Sharan Merriam and Ronald Cervero, this book brings the authors' welcome experience in adult education and promises to help us broaden our teaching approach to create a more successful and satisfying experience for instructors and learners alike. It is an ambitious undertaking with a promising approach, although the scant 145 pages offers little room to fully develop their proposal and some examples are irredeemably superficial (e.g., that Maria has forgotten to survey her students on page 107 does not really help our cause to evaluate Web-based courses).

The foundation of their approach is the Distance Education Plan (DEP), a systematic structure for introducing strategies, methods and activities before, after and especially during a Web-based distance education experience. Each chapter in the book is devoted to a different component of the plan, and includes a sample DEP for a communications course. The structure of the book (and DEPs) is as follows:

1. Phase I, Before the experience:
Assessing and matching student needs (chapter 2)

2. Phase II, During the experience:
Providing guidance (chapter 3);
Building community (chapter 4);
Facilitating communication (chapter 5); and
Humanizing the experience (chapter 6)

3. Phase III, After the experience:
Evaluating and implementing change (chapter 7)

Distance Education Plans address what the authors see as a serious void in Web-based education: instructors have yet to place adult learners at the heart of the process. The plans offer a means for instructors to focus on adult learning activities such as self-direction, experiential learning, and collaborative learning as essential features of distance learning. The authors argue that technologies have caused educators to question the effectiveness of traditional pedagogical approaches to teaching; DEPs are a call for a renewed commitment to adult learning principles. They downplay the role of technology itself, the "canvas" against which the learner operates. The authors make no mention of learning management systems, for example, even though they have been a dominant feature of the North American and European educational landscape in recent years. Further, DEPs are designed to work with any instructional objectives that are part of an existing curriculum or lesson plan. In fact, the authors, making fine use of a classroom metaphor, advise us to view a DEP as a "transparency that overlays a well-structured curriculum plan" (p. 8) and "become[s] part of the total teaching package" (p. 9).

The value of DEPs and their learner-centredness is apparent in the authors' interpretations of progressive and humanistic educational theories for the Web-based environment. No where is this more evident than in Phase II, where they introduce strategies to humanize the learning experience. Here DuCharme-Hansen and Dupin-Bryant stress that such experiences are primarily about people and relationships, and call on instructors to overcome the mechanistic nature of the technology that mediates these experiences. They turn to the literature of immediacy behaviours as a means to build intimacy and rapport through humour, self-disclosure and feedback. They note that cultivating closeness reduces the perceived psychological distance among learners and instructors. Interaction among learners, content, instructors and computers and its pedagogical value at a distance is foundational research in the distance education literature. I found it most valuable that the authors chose to look beyond components interacting with one another to explore their interpersonal qualities and how they contribute to the social dynamics of the Web-based learning experience.

Interaction and immediacy behaviours are a good example of how adult education and Web-based distance education are mutually beneficial, despite the fact that their genesis was the product of different eras. The authors conclude that such a merger "supports adult learning in a Web-based environment as a life-centred activity, which promotes lifelong learning, encourages self-direction, and meets the needs of adult learners" (p. 6). But I was disappointed that DEPs do not make this merger more explicit. For example, their strong investment in the social dynamics of the learning experience, a perspective consistent with the social constructivist view of learning, is one that fully supports life-centred activities. Yet, DEPs do not offer strategies for a community that has become more complex than merely a collection of learners and an instructor. As learners become actively involved in the learning process, and take control of their own knowledge in new ways, what role does the instructor play at this stage? What are the lifelong learning strategies that enable learners to be the architects of their own learning in their real world? How do we remove obstacles in content and structure for such learning to occur? The DEP strategies for

community building – ice breakers, webpage design and interface, and a code of conduct – are appropriate for the initial stages, but seem inadequate in the face of such eventual complexity. We are left with the sense that, in following the DEP's systematic roadmap, the path falls short of its ultimate destination.

In summary, this book recognizes that Web-based education is still in its infancy and that most of us are novices who find ourselves in this uncharted, dynamic territory with little or no guidance. We appreciate the reassurances inherent in a well-written proposal that downplays technology and depends on an existing curriculum in order to focus on the learner. Those of us who suspect that there is something inherently conservative in using technology around existing practices may wish to keep looking for other guides that also recognize the salience of lifelong learning and its requirements for learners, of which there will surely be more.

Athabasca University

June - 2006

Book Review – Development and Management of Virtual Schools: Issues and trends

Editor: Catherine Cavanaugh (2004). *Development and Management of Virtual Schools: Issues and Trends.* 274 pages. Softcover. Hersey, PA.: Idea Group. ISBN: 15 9140 2174.

Review by: Michael K. Barbour, University of Georgia at Athens

Within Canada, the virtual school movement is growing. Contact North, the virtual school serving Northern Ontario, reported 11,222 registrations in their 548 courses for the year 2000-01 (Betty, Hebert, and Sefton, 2002). In British Columbia, a partnership of eighteen school districts offered a pilot electronic distance education program for 2,200 students in 2001-02, while the Vancouver School Board (that province's largest school board) was in the process of setting up its own virtual school (Kuehn, 2002). Over the past four years, the Centre for Distance Learning and Innovation in Newfoundland and Labrador has increased its offerings from 200 student enrolments from 76 different schools in ten courses in 2001-02 to 1,500 student enrolments from 95 different schools in thirty-five courses in 2004-05 (Government of Newfoundland, 2004). From 1995 to 1999, there were "23 online programs [that] have begun operating in the province [of Alberta]" (Muirhead, 1999). "Alberta leads the [virtual schooling] pack with about 4,500 full-time and 2,500 part-time K-12 students in online schooling – over 20 schools offer online courses" (O'Haire, Froese-Germain and Lane- De Baie, 2003, p. 6). However, there has yet to be a book published that has really addressed the virtual school movement across Canada. Cavanaugh's *Development and Management of Virtual Schools: Issues and Trends* is the first step in addressing that deficiency.

While not exclusively about virtual schooling in Canada, Cavanaugh's book provides a truly international perspective on this new and growing sector of K-12 education. This begins with the opening chapter by Glenn Russell, which provides both a background and context to the rise of virtual schools in North America from an Australian perspective. Russell starts with a discussion of historical efforts in distance education and how virtual schooling is the next step in that progression due to globalization and advances in technology. He then enters into a brief discussion about the philosophy behind virtual schooling and how its practice may be supported by various theories of communication. Russell concludes the chapter with a thorough discussion of some of the problems facing virtual schools and the potential solutions to those problems.

The first instance of a Canadian perspective is provided by Margaret Haughey and William Muirhead. Their chapter provides a consideration of the development of virtual schools in Canada, with a specific focus upon the province of Alberta. Unique in its origins, Alberta is the only province where the push for the virtual school movement came from those involved in homeschooling. The authors briefly describe the history of K-12 distance education in Canada and the virtual school movement in other provinces, before focusing upon the history of and

administrative issues associated with virtual schools in Alberta. Unlike many of the other chapters, Haughey and Muirhead pose many unanswered questions about the future of virtual schools to consider, presumably in an attempt to provoke reflection in the reader.

Another example of a Canadian perspective is provided by Ken Stevens in his chapter about the use of school district digital intranets to create open school models in Atlantic Canada and New Zealand. He describes how the creation of a virtual learning environment for the delivery of Advanced Placement courses connected rural schools "academically and administratively integrating with one another for at least part of a school day." Stevens considers how this open school model provides challenges to the traditional school organization in three areas, the administrative issues in connecting these schools, the ability to integrate students into both physical and virtual classes, and the differences in pedagogy for both teaching and learning in these virtual environments.

A truly international scope is achieved, not only through these Australian, Canadian, and New Zealand perspectives, but also through an additional Australian perspective, a variety of American perspectives, and even a chapter focusing upon a virtual school initiative in Singapore. For the practitioner, this book provides a good American and non-American consideration of the history of – and some of the major issues facing – virtual schooling. For the researcher, the various chapter authors provide considerable background on what has happened in the field and pose many questions that remain unanswered, many of which will require scholarly inquiry to address. This book is highly recommended as a starting point for any individual interested in virtual schooling.

References

Betty, D., Hebert, W.S. and Sefton, D. (2002). Employing open and distance education learning to meet regional social needs: The northern Ontario experience. Paper presented at the annual conference of the *Canadian Association of Distance Education* in May 2005 at Calgary, Canada. Retrieved on December 9, 2004 from: http://www.cnorth.on.ca/cnorth/CADE/CADE_May_2002.htm

Government of Newfoundland. (2004). *CDLI's reputation continues to grow.* St. John's, NL: Queen's Printing for Newfoundland and Labrador. Retrieved on December 9, 2004 from: http://www.gov.nl.ca/releases/2004/edu/0909n04.htm

Kuehn, L. (2002). *BCTF Research Report: Developments with distributed learning.* Vancouver B.C.: British Columbia Teachers' Federation. Retrieved on December 9, 2004 from: http://www.bctf.ca/researchreports/2002ei03/report.html

Muirhead, B. (1999). The benefits of an online education consortium for Alberta. *International Electronic Journal for Leadership in Learning 3*(4). Retrieved on December 9, 2004 from: http://www.ucalgary.ca/~iejll/volume3/muirhea.html

O'Haire, N., Froese-Germain, B., and Lane-De Baie, S. (2003). *Virtual Education: Real educators.* Ottawa, ON.: Canadian Teachers' Federation.

Book Review – *Three Dimensions of Learning: Contemporary learning theory in the tension field between the cognitive, the emotional and the social*

Author: Knud Illeris (2003). *Three Dimensions of Learning: Contemporary learning theory in the tension field between the cognitive, the emotional and the social.* 272 pages. Paperback. Malabar, Florida: Krieger. ISBN: 87 7867 1213

Review by: Krista Poscente, University of Calgary, Canada.

Three Dimensions of Learning: Contemporary learning theory in the tension field between the cognitive, the emotional and the social by Knud Illeris intends to "present a generally accessible, coherent understanding of human learning...and attempts to cover the whole subject area in accordance with current knowledge in this field" (p. 21). With this ambitious intention, Illeris provides a comprehensive review of learning theory. Initially, Illeris examines each dimension of cognitive, emotional and social learning separately. Later, Illeris integrates the separate dimensions to explain the complex learning process as one whole.

Illeris intended this book to be a textbook covering the entire breadth of current learning theories. As such, the intended audience would primarily be academics concerned with education and learning. To shape Illeris' theory of learning, he briefly summarizes viewpoints from many different scholars and theorists. Such brevity requires a certain amount of familiarity with learning theories and theorists. The *Three Dimensions of Learning* is not light reading material, but it is well worth the required concentration.

The structure of the book and the development of Illeris' understanding of the learning process are clearly laid out in the first chapter. Every chapter ends with an excellent summary of the key points. These summaries simplify the complexity of the ideas Illeris illustrates in each chapter.

Chapter One begins with Illeris' definition of learning. Illeris defines three different processes of learning: cognitive process, emotional process, and social process. These processes can be studied independently, but they occur simultaneously. Illeris clearly states that learning is a holistic human process, yet he neglects to recognize other possible dimensions of learning such as physical or spiritual.

The next two chapters cover the cognitive learning process or "how we learn something" (p. 63). Illeris begins with Piaget and thus rejects the behaviourist paradigm. Kolb's model of experiential learning is an important component to Illeris' definition of learning. There are two German words for the English word experience: Erlebnis (life experience) and Erfahrung (effected consciousness). The cognitive dimension of learning refers to Erfahrung, an event of understanding. Included in the cognitive domain are reflection, meta-learning and Mezirow's

transformative learning. Elements of the cognitive process refer to an internal psychological process.

Chapters Four, Five and Six are about the emotional aspects of learning. Illeris uses the term emotional to describe psychodynamic or affective aspects of learning. The theories of Freud, Furth and Holzkamp-OsterKamp describe the motivational aspects of learning. Personality development and reflexivity are included in the emotional component of learning. With only motivation, personality and reflexivity, Illeris' emotional dimension is unnecessarily narrow. This dimension could be broadened with the inclusion of other emotions, such as Nel Nodding's 'happiness.' Chapter Six provides an excellent overview of mislearning, when the intended learning does not occur. This chapter deals with resistance, defence and consciousness.

Chapter Seven delves into the social components of learning of interaction, social learning and socialisation. Interestingly, Illeris builds the social constructivist perspective through the scholars from the Frankfurt School and Hanover School. Where cognitive and emotional learning is rooted in the individual's biological-genetic constitution, social learning is rooted in the historic-societal constitution. Vygotsky is prominent in Illeris' historic cultural discussion.

The remaining chapters of the book were the most interesting as Illeris integrated the three dimensions into one whole. He returns to experiential learning by adding Erlebnis. Illeris starts to situate the individual into the world and into education with the philosophical perspective of Dewey. From Dewey he describes and summarizes the Danish concept of experience and pedagogy.

In chapter Nine, Illeris relates the stages of learning relate to life stages integrating biological and psychological phases. Illeris discusses four different life stages: childhood, youth, adulthood, and mature adulthood. For the most part, I concurred with Illeris' learning stages. However, I questioned Illeris' delineation of old age. Illeris claims that mature adulthood could occur between the ages of 45-65. Women enter old age at menopause (p. 222), the earlier end of the age spectrum. This reserves the latter end of the spectrum for men and implies that women enter old age earlier. My unbiased observations reveal that mid-life women age much slower than their male contemporaries.

The next two chapters are about space and identity. Chapter Ten discusses the influence of spaces on learning results. The chapter describes space through communities of practice, informal learning, institutional learning and organizational learning. Chapter Eleven discusses identity and learning motivation through the four different life stages.

Chapter Twelve was my favourite chapter where Illeris summarizes all of the developed learning theory. Illeris offers the following comprehensive definition of the learning process:

" . . . I see it (the process of learning) as an entity which unites a cognitive, an emotional and a social dimension into one whole. It combines a direct or mediated interaction between the individual and its material and social environment with an internal psychological process of acquisition. Thus, learning always includes both an individual and a social element, the latter always reflecting current societal conditions, so that the learning result has the character of an individual phenomenon which is always socially and societally marked." (p. 227)

Illeris provides triangular illustrations placing the theorists on a continuum among the learning dimensions. Each dimension forms one point of the triangle. The first illustration represents

institutional learning and developmental psychology. Piaget is placed at the cognition vertex and Freud is placed on the emotion vertex. Kolb, Dewey, Mezirow, Bateson and others fall in between. The next triangular illustration represents activity theoretical contributions, with Bandura and Vygotsky at the cognition vertex and Bruner on the society vertex. The third triangular illustration represents societal and socially oriented positions. Marx represents the society vertex. A final triangular illustration combines all the diagrams and theorists on into one. A star in the middle represents Wenger's communities of practice. This final illustration called "positions in the learning theoretical tension field" (p. 237) provides a clear concise categorization of the aforementioned theorists' dimensional inclination.

I appreciated Illeris' acknowledgement of the dominant male theoretical presence of his illustration and book. He partially explains this difference as a historic consequence of predominance of male researchers. However, he describes a gender dichotomy in the research field. "Female learning researchers tend to relate more directly to personal development, emotional conditions and learning practice, whereas more abstract and structural approaches, such as those primarily dealt with in this book, seem to be a predominantly male interest" (p. 237). Again, I am unconvinced of Illeris' gender differentiation. Were (are) not some males, like Dewey, concerned with practice in education?

In summary, The Three Dimensions of Learning is a well-written book that would be useful for any academic interested in learning theory. I appreciated finding an abridged summary of numerous diverse learning theories. Illeris' summaries of the similarities and differences between many learning theorists were insightful. As a graduate student struggling to compartmentalize the seemingly infinite theoretical learning perspectives, I will keep Illeris' illustration of the "positions in the learning theoretical tension field" close by. Illeris achieved his goal to provide a comprehensive and coherent understanding of learning theory.

Athabasca University

Technical Evaluation Report

54. Best practices in synchronous conferencing moderation

Lynn Anderson, **Barb Fyvie**, **Brenda Koritko**
Kathy McCarthy, **Sonia Murillo Paz**
Mary Rizzuto, **Remi Tremblay**, and **Urel Sawyers**
Centre for Distance Education
Athabasca University – Canada's Open University

Abstract

Practical guidelines are offered for the use of synchronous online conferencing software by session administrators and moderators. The configuration of the software prior to conferencing sessions is discussed, and the planning and implementation of useful collaborative activities such as "synchronised browsing." The combination of these practices into useful "patterns" for specific online conferencing purposes is discussed.

A) Creating the conference session

Elluminate Live is a relatively sophisticated example of online conferencing software, involving a correspondingly complex conference creation procedure (see reports 14 and 19). It is therefore a useful platform for the discussion of these procedures. The product allows conference administrators to create two types of sessions: a) meetings in a one-time or permanently open online "room"; and b) recurrent sessions running over a long duration. This section of the report focuses on the procedure for setting up a single meeting in an educational setting. It is assumed that the moderator is the instructor or a subject expert, and that the users are students and guests. Recommendations will be provided on how to lay the ground work for a successful meeting that not only facilitates learning but also fosters a community of learners.

The *Elluminate* Session Management utility (SAS) provides administrators with the tools necessary to schedule a meeting and to define the settings for the session. Beyond the necessary settings such as date and time of the meeting, many other options are available. These include, but are not limited to:

- Name of the moderator

- Number of minutes prior to the conference start time during which users may join the room

- Option to record the session

- Option to allow users further, automatic privileges (e.g., voice and text chat).

The administrator also has the option of granting special privileges to a moderator, including:

- Ability to supervise the room

- Control over the beginning and end of the session recording.

During the meeting, the moderator may grant these same moderator privileges to others in turn. In order to encourage the development of an efficient online community of learners, several recommendations may be made as to the setting of the above options.

- A basic good practice for meeting set-up is to plan the moderator features and timing of the session thoughtfully in advance.

- To allow the participants time to congregate and chat, the conference area should be opened to users at least one-half hour prior to the meeting. The moderator should be present at this time to deal with questions about the software and the topic to be discussed. This lead-time also allows users to become more familiar and comfortable with the moderator.

- The option to record the session should be left to the moderator. He or she can best determine the need for this. If students know in advance that a session will be recorded, they may be less diligent about attending and contributing to it; it should be noted that privacy regulations or expectations may require that participants be informed of this intention before the session begins.

- *Elluminate Live* privileges should always be granted to users, in order to prevent the participants from being little more than a passive audience. There should be opportunity for chat and collaboration between users. When this privilege is removed, they may be able merely to text-chat with the moderator for the purpose of asking questions.

- The moderator should not necessarily be granted the option to "supervise" the room. When the "supervise" setting is chosen, the moderator sees all text chatting, including private messages. By assuming this level of control, the moderator denies the students the opportunity to make personal comments. The moderator's personal teaching style may approve or disapprove of this facility, although any constraint of the freedom to communicate privately during sessions may impede the creation of an efficient community of learners. Worse still, it may allow for invasion of a privacy that the students believe they rightfully possess. Whether the option is selected or not, it is important that students be told at the outset of the meeting whether their private messages will be visible to the moderator.

B) Synchronised Web-browsing

3

Anderson, Fyvie, Koritko, McCarthy, Paz, Rizzuto, Tremblay, Sawyers,
Technical Evaluation Report 54: Best practices in conferencing moderation

Also known as Web-touring and co-browsing, synchronised browsing is a feature of various conferencing products, including *Elluminate* and *iVocalize*. This option allows moderators to provide a browser-based guided tour using selected URLs (Web addresses) and embedded links to relevant Internet resources. The ability for all participants simultaneously to navigate the Web under moderator control is a powerful device in Web presentations, providing a useful forum for participant interaction. This section of the report offers guidelines for synchronised browsing using *iVocalize*, including the advance organisation of sessions, and in-session pacing methods facilitating meaningful discussions in the creation of a community of learners.

The organisation of an effective Web-tour begins during the planning of an event in *iVocalize*'s "Room Control Panel," where moderator and participant features are selected. By selecting "Allow Web Browsing by Non-moderators," for example, the administrator allows independent browsing by participants. If this feature is disabled during the session, participants will see the Web content without the URL, and clicking on embedded links will have no effect. The moderator can relinquish control over synchronised surfing when participants are exchanging webpages, and can regain it by entering the preferred URL and pressing "Send Current Web Page" on the Moderator menu.

A variety of techniques can be used to organise the URLs that will be presented in a session. They can be listed in a text document for users to copy and paste during the presentation, and/ or they can be organised in advance on the moderator's browser, for accessing during a session using *iVocalize*'s "Favorites" menu. Moderators can also pre-load multiple webpages, and can use the "Back" and "Forward" arrows beside the address bar during the session. Moderators should advise participants of their actions during synchronised browsing, to minimise confusion and to facilitate efficient discussion.

It is important to identify all moderators in advance, as they cannot be assigned during the session. However, the moderator can receive URLs "on-the-fly" when non-moderators have Web-touring capabilities. Participants have the option of right-clicking on user names, including the moderator's, and then selecting "Send Page To Selected User." On receiving a URL, the moderator can send this resource to the group by selecting "Send Current Web Page" on the Moderator menu. In addition, it is important to note that if more than one moderator is assigned to a session, only one can enable "Synchronized Browsing" on the Moderator menu, in order to exchange Web resources. The first moderator must disable it from the Moderator menu before another moderator can begin synchronised browsing activities.

The moderator should plan to attend the session early, and should confirm that all participants are in the session within a reasonable period before beginning synchronised browsing. Participants may be advised to communicate technical issues to a designated assistant using the private text-chat box, and to use the "Show URLs in Text Chat" feature provided on the "File" menu. This feature ensures that when switching to a new URL or selecting a hyperlink, the specific address will automatically appear in the text-chat box. In addition, if new participants arrive after the session has started the moderator must synchronise them with the rest of the group by pressing "Send Current Web Page" from the Moderator menu.

C) Developing conferencing "patterns"

4

Anderson, Fyvie, Koritko, McCarthy, Paz, Rizzuto, Tremblay, Sawyers,
Technical Evaluation Report 54: Best practices in conferencing moderation

Guidelines such as those proposed above may be amalgamated into "patterns" for particular online teaching and learning purposes. Alexander (A Pattern Language, Oxford University Press, 1977) conceived of using patterns in architecture. He stated that "Each pattern describes a problem, which occurs over and over again in our environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice." Organisations such as e-Len in Europe are beginning to establish "pattern repositories," to advance the sharing of best practices among networked learning practitioners.

This final section of the report proposes a pattern to support moderators in planning effective and inclusive synchronous learning experiences in a networked-learning environment. It builds upon previous observations in this series (report #26), about "the moderator's roles regarding participant access and motivation, online socialisation, information exchange and knowledge construction" in synchronous conferencing. The following pattern focuses on the planning of these activities, and relates to existing patterns formulated by e-Len (Forming Groups for Collaborative Learning, and Making Online Learners Trust Each Other). The pattern applies to the organisation of online seminars/ conferences, collaborative workshops, and team meetings for the purpose of online collaborative work

Pattern Name: Planning Online Synchronous Activities

Background: The moderating of online synchronous learning activities as part of an effective and inclusive learning environment is dependent upon prior planning and preparation. The degree to which the activity is structured, and the support structures put in place, are vital in promoting participation from all participants.

Context: You are a facilitator/ moderator of a one-hour synchronous class using software with VoIP, collaborative tools, and presentation capabilities. The session is focused on providing students in a graduate education program with formal guidance on "How to work in virtual teams," and to give the learners an opportunity to begin a group project.

Problem: How do you plan for an effective and inclusive synchronous learning experience in an online conferencing environment?

Analysis of Problem:

- The online conferencing tool may be new to you and the participants

- The learning environment provides multiple tools for communication and presentation, such as text-chat, VoIP audio, synchronous presentation, shared whiteboard, and co-browsing

- There is a short time-frame in which to cover the required material and to solicit active participation from the entire class

- Technical problems may arise during the session, further reducing the time available.

Solution (Planning): Plan ahead with the problem analysis issues in mind. For example,

- Provide technical requirements and a site on which to test the technology in advance; also, self-paced tutorials for participants to review prior to the session

- Conduct your own practice session in order to gain confidence with the tools and to test the presentation materials

- Provide the class with an agenda and goals for the session beforehand

Activity Structure: Structure the session to include equal and inclusive participation. For example,

- Provide protocols for the session and guidelines for participation

- In order to encourage social interaction, encourage participation by starting and ending the session with a discussion question that each participant can answer

- To support knowledge gain, incorporate planned questions that are open-ended and thought-provoking, and which allow participants to draw upon their personal experience

- Develop learning strategies that optimise the use of the conferencing software's features, in order to provide the richest learning experience possible.

Support Structure: Provide support during and after the session by:

- Arranging for additional technical support using one of the participants or an outside support person who is familiar with the conferencing tool, to handle any technical difficulties during the session so that the facilitator is not interrupted

- Providing a means of following up on activities after the session, to gain feedback and to resolve any outstanding issues (conference board, participants' email, etc.)

- Model a positive, supportive, and respectful tone in facilitating the session via constructive and encouraging comments.

Conclusions

Elluminate offers extensive meeting set-up features, providing both moderators and users with effective options for interaction and learning. The basic configuration is simple and intuitive, with good automated features. The software offers additional controls for users looking for efficient customisation of sessions. In addition, the synchronised Web-browsing features of products such as *iVocalize* provide moderators and participants with the benefits of sharing browser experiences and relevant Web resources. Practical guidelines for efficient conference planning and moderation may be usefully combined into effective prescriptive "patterns," for use in specific educational situations.

The next report in the series describes best practices and collaborative software in online teaching.

> **N.B.** Owing to the speed with which Web addresses become outdated, online references are not cited in this report. They are available, together with updates to the current report, at the Athabasca University software evaluation site: http://cde.athabascau.ca/softeval/. Italicized product names in this report can be assumed to be registered industrial or trademarks.

> *Patrick J. Fahy, Interim Series Editor* (Jon Baggaley is on sabbatical).

Technical Evaluation Report

55. *Best Practices" and Collaborative Software In Online Teaching*

Remi Tremblay
Masters of Distance Education Program
Athabasca University – Canada's Open University

Introduction

In recent years, many distance educators and institutions have successfully adopted asynchronous text-based environments as the backbone of their online classrooms. Group email, electronic references, and course websites, coupled with online discussions, typically constitute the model of online course delivery. Although the structure and pacing of these asynchronous text-based environments provide both students and instructors with increased flexibility and convenience, the synchronicity – and sometimes the freshness of the interaction – of the traditional face-to-face classroom were often sacrificed.

The field seems to be aware of this loss. According to Gartner Research, the virtual classroom collaboration software market grew by 19.7 percent in 2003, to reach more than US $507 million in new license sales worldwide, the third consecutive year of growth (Clark, 2005). Despite their costs and technical complexities, the popularity of these virtual classroom collaboration software packages suggest that they are seen by instructors as offering an important aid to interaction in some distance learning environments.

Some established virtual classroom products (Elluminate, Centra, WebEX) are priced outside the reach of many educational institutions, but low-cost alternatives are beginning to come to market that offer much of the same functionality and capabilities (see Reports #52 and Report #53). These software products change – and challenge – the asynchronous model of delivery. They focus group energy, they permit real-time interaction (which can help develop group cohesion, especially for those less familiar with media-based learning) and, most importantly, they provide a familiar instructional environment that mimic many positive features found in the traditional classroom environment (i.e., synchronicity, verbal rather than text-based interaction, instructor presence, whiteboard presentation facilities, hand-raising for turn-taking, public and private messaging capabilities).

For instructors, the virtual classroom also replicates familiar elements of the face-to-face teaching environment. For instance, virtual classrooms offer instructors the opportunity to address the class as a group, respond quickly to questions, provide feedback to students in groups or individually,

to 'call on' participants (verbally or in private text messages), query and poll, doodle illustrations and post references for all to see, and to communicate individually or with the group in print (text). While arriving at a conclusion through discussion via asynchronous discussion can take hours of typing and weeks before conclusion, in some synchronous voice-based classes this process takes a fraction of the time and is more rewarding (Walther, 1996).

Developing skills for another new environment

Although the virtual classroom provides new and easy opportunities for instructors to incorporate synchronous activities as part of their course delivery strategy, little definitive research is available on best uses of these tools, and the role of the instructor in modeling appropriate uses for the students to imitate. New online instructors seeking guidance about what constitutes best practice in the online teaching world may recognize that virtual classrooms in some ways resemble traditional classrooms, but many instructors in these environments lack training or experience to guide their practice (Salmon, 2001). What training there is often concentrates on the use of the technology rather than on the role of the online teacher. Additionally, Longobardi (2003) points out that the quality of delivery with live e-learning is perhaps even more important than in instructor-led classroom training. He suggests that even exceptional instructors and subject-matter experts comfortable with teaching in face-to-face classrooms will not necessarily be star performers in a virtual classroom.

This is not a new problem – new technologies have always stressed existing paradigms. While researchers have long investigated and developed best practices for classroom-based instruction, much less is known about how best to deliver instruction via the Internet (Kozma, 1999 as cited in Brantley and Zulli, 2004). As Swan (2003) observes:"We know online learning is effective. What we need to know is what makes it good, and how can we make it better?" (p. 8). Although these virtual classroom environments represent new challenges for instructors and instructional designers alike, models for effective instruction in this environment have not yet been widely developed. According to Hoffman (2005), "Since live online learning is relatively new, training professionals have been creating programs without the benefit of successful models, without best practices, and without full knowledge of how to use the technology to its best advantage. Best practices are developing but haven't been widely shared. So a promising tool has gone misused and underused despite its bright prospects." (p. 7).

What do we already know?

All is not doom and gloom. Some progress has been made to capture and share these best practices through the development of patterns to support online course delivery (see # Report 54). Organizations such as Europe's e-Len are beginning to establish pattern repositories to advance the sharing of best practices among networked-learning practitioners, which is a useful starting point for new users.

Traditional models should also be useful. As outlined above, teaching in a virtual classroom can be quite different from the traditional classroom; however, instructor delivery of the educational material remains critical in both (White, 2004). Models such as Chickering and Gamson's (1991) seven principles for good teaching practice (see Table 1) provide an excellent starting point for teachers considering how they can effectively structure virtual sessions with new synchronous tools, while incorporating lessons learned from over 50 years of educational research in the face-to-face environment. Moreover, these principles have been already effectively adapted to outline

delivery with asynchronous instruction tools (for an example with WebCT see http://www.webct.com/service/viewcontentframe?contentID=2627458&p ageName=WebCT3_tools.html).

Table 1. Seven Principles of Good Practice in Undergraduate Education
(Chickering & Gamson, 1991)

1. Encourage contact between students and faculty
2. Develop reciprocity and cooperation among students, rather than competition
3. Encourage active learning
4. Give prompt feedback
5. Emphasize time on task
6. Communicate high expectations
7. Respect diverse talents and ways of learning

Incorporating proven principles into the structure and design of a synchronous lesson will help guide instructors new to mediated learning, although the same age-old questions that have always plagued the classroom – technically enhanced or otherwise – will continue to persist (Worley, 2000). In preparing to exploit the benefits of the virtual classroom, instructors need to consider the strategies that they will employ to deliver a successful session and how students may demonstrate understanding and mastery of the behaviors and strategies they model. Instructor modeling is a powerful form of learning, and as Turoff (1999) contends, the learning methodologies used by educators are as important as the technologies. Developing and adopting new methodologies to leverage the strengths and minimize the weaknesses of the virtual classroom based on previous research, provides a useful starting point.

According to a recent report published by Keegan and colleagues (2005), educators planning to use virtual classrooms can make them more interactive and more imitative of the positive potentials for interaction in face-to-face learning settings. This can be accomplished by exploiting elements of the technology such as breakout rooms, video, text chat, application sharing, and no-cost student-initiated small-group sessions outside of class time. For this to be successful, however, instructors must embrace some guidelines based on pedagogical principles:

- There has to be a focus on interactivity; otherwise communication may be merely one-way

- Preparation should be made in consultation with students; they should know what they can expect, technically and interpersonally, and what is expected of them in relation to interactivity

- There are requirements for academic preparation for both the teacher and the students

- Continuous improvements in the interactivity of sessions have to be made to sustain group motivation

- All parties must make skillful use of technology

- Technical functionality must meet expectations (there are technical support implications to this expectation)

Feedback in the Virtual Classroom: Focus of interactivity

Incorporating the above pedagogical principles will help instructors structure their sessions so that they are both pedagogically and technically sound. True comfort with the online teaching role, however, requires the additional adjustment to the lack of the students' physical presence. Although the virtual classroom may mimic many aspects of the face-to-face environment, it is an inescapable fact that instructors cannot see the students' non-verbal cues.

Many virtual classroom tools attempt to compensate for the lack of direct feedback by giving students various means for providing feedback to the instructor and other learners, such as emoticons, pacing indicators, and text-chat messaging. Although using these feedback tools effectively requires adjustments. Some students may not be familiar with these feedback tools, or their use may be different from what is conventional in less structured environments. Protocols must be developed and published to ensure students know how and when to use the feedback tools available. Roles will also change. For students, the ability to send feedback provides some control, but requires understanding of what constitutes appropriate uses of these capabilities. For instructors, use and monitoring of feedback tools, such as hand-raising and polling capabilities as well as other forms of feedback, must be developed because unskillful or unpredictable uses could stifle interaction. Practitioners' adoption issues are made more complex by the present lack of research on the impacts and best uses of these capabilities.

Conclusion

At the start of the e-learning boom, many observers predicted that online distance education would make classroom learning obsolete. The face-to-face classroom, however, continues to survive. Moreover, elements of this model of instruction will potentially thrive again in the online environment, particularly as the effectiveness and convenience of the virtual classroom gains further popularity, and online users develop more precise adaptations of the classroom's components and capabilities. Online tools used to assist instructors in creating a comfortable and effective virtual classroom continue to evolve, and as they do evolve the need for additional research increases – research that is ideally based on what is already known and that is aimed toward further identification of best (or simply good) practices.

The next paper in this series examines video-conferencing with audio software.

References

Chickering, A. W., and Gamson, Z. F. (1991). Applying the Seven Principles for Good Practice in Undergraduate Education. *New Directions for Teaching and Learning 47*. San Francisco: Jossey-Bass.

Clark, R. C. (2005). *Harnessing the Virtual Classroom. Training + Development.* Retrieved November 18, 2005 from: http://www.elluminate.com/press/Harnessing_the_Virtual_Classroom.pdf

Hoffman, J. (2005). *How to Design for the Live Online Classroom: Creating great interactive and collaborative training using Web conferencing.* Retrieved November 22, 2005 from: http://www.brandon-hall.com/publications/lol/lol.shtml

Keegan, D., Schwenke, E., Fritsch, H., Kenny, G., Kismihók, G., Bíró, M., Gábor, A., Ó'Suilleabháin, G., and Nix, J. (2005). *Virtual Classrooms in Educational Provision: Synchronous elearning systems for European institutions.* Hagen: FernUniversitaet (ZIFF). Retrieved November 20, 2005 from: http://www.fernuni-hagen.de/ZIFF/synchronous.pdf

Kozma, (1999). Discussant for current applications of instructional theory and design in technology. In W. Veal, J. Brantley, and R. Zulli. (2004). Developing an Online Geology Course for Preservice and Inservice Teachers: Enhancements for online learning. *Contemporary Issues in Technology and Teacher Education 3*(4). Retrieved November 19, 2005 from: http://www.citejournal.org/vol3/iss4/science/article1.cfm

Longobardi, G. (2003). Live learning on the Web. *CLO Magazine.* Retrieved November 19, 2005 from: http://www.clomedia.com/content/templates/clo_issue_toc.asp?articleid=115&zoneid=99

Salmon, G. (2001). Masters or Slaves to the Technology? The Role of the E-moderator in E-learning. *ELearn Magazine*. Retrieved November 19, 2005 from: http://www.elearnmag.org/subpage.cfm?section=tutorials&article=1-1

Swan, K. (2003). Learning Effectiveness: What the research tells us. In J. Bourne and Janet J. C. Moore (Eds.) *Elements of Quality Online Education: Practice and direction, Vol. 4.* Online Education (p. 1-13). Needham, MA.: The Sloan Consortium.

Turoff, M. (1999). Education, Commerce, and Communications: The Era of Competition. *WebNet Journal: Internet Technologies, Applications & Issues 1*(1), 22 – 31.

Walther, J. B. (1996). Computer-Mediated Communication: Impersonal, interpersonal and hyper-personal interaction. *Communication Research 20*(1), 3 – 43.

White, G. (2004). E-learning: Australia's achievements in education and training. Paper presented to the CeBIT eGovernment Forum, Sydney Exhibition Centre on 4 – 6 May at Darling Harbour, Australia.

Worley, R. B. (2000). The medium is not the message. *Business Communication Quarterly 63*(3), 93 – 101.

N.B. Owing to the speed with which Web addresses become outdated, online references are not cited in this report. They are available, together with updates to the current report, at the Athabasca University software evaluation site: http://cde.athabascau.ca/softeval/. Italicized product names in this report can be assumed to be registered industrial or trademarks.

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Technical Evaluation Report

56. Video-Conferencing with Audio Software

Jon Baggaley
Athabasca University – Canada's Open University

Jim Klaas
Learnerscom.net

Abstract

An online conference is illustrated using the format of a TV talk show. The conference combined live audio discussion with visual images spontaneously selected by the moderator in the manner of a TV control-room director. A combination of inexpensive online collaborative tools was used for the event, based on the browser-based audio-conferencing software, *iVocalize*. The exercise illustrates how an impression of a fully featured online video-conference can be created without the need for complex video-conferencing software and high bandwidth.

Introduction

Since this series of software evaluation reports began in 2003, it has repeatedly stressed that the more expensive audio-conferencing software does not necessarily satisfy the accessibility requirements of all distance education (DE) students. Originally designed for corporate training situations, for example, such software works well on high-speed local access networks and domestic broadband connections, though not on slow dial-up connections of the type still used by many DE students. Such software packages also combine numerous features (polling, file and application sharing, etc.), which the designers continually insert in order to compete with rival products. DE students and teachers do not typically use the full array of features, however; and this series of evaluation reports has indicated that DE graduate students prefer those tools that have the essential features only, a simple navigation scheme, and a fast 'learning curve'. In many cases, DE students' favourite tools are the freeware (e.g. MSN and Yahoo Messenger), which they use in their daily non-educational lives, and which also fulfil their DE needs quite adequately.

Also within the period of these evaluation studies, competition between commercial software vendors has rapidly led to the convergence of different software applications (e.g. audio and video conferencing, and shared browsing) within individual products. A common combination of features in online DE is an audio-conferencing tool with a text conference or chat box, and a

whiteboard on which participants can share, for instance, PowerPoint presentations. Live video-conferencing using webcams is useful in specific subject areas that require visual 'show and tell', though may require relatively expensive broadband connections to which all students do not have access. Some participants exercise their right not to be seen in online video-conferences anyway.

An ideal combination of online conferencing tools, therefore, appears to be one which requires minimal connectivity and contains essential features only. The repertoire of necessary features may constantly change, however, as students and teachers develop new needs. As a result, DE institutions commonly purchase expensive software packages offering combined features, regardless of the complexities of their usage. Alternatively, institutions can meet the changing needs of the online classroom by assisting teachers to 'mix and match' independent software tools. If these are easy to install, and the combination of applications is well designed, this approach has the advantage of avoiding the navigation and configuration challenges commonly found with the larger, more fully featured software packages.

The audio-conferencing software

The current study used a combination of independent software applications, allowing a teacher and his students to guide each other aurally through a series of presentations, while also providing a compelling video-conference experience without the need for webcams and high bandwidth. The inexpensive *iVocalize* audio-conferencing software was used, found popular in other studies in this series (see the previous Report # 53). A distinct advantage of this product is that it does not require the downloading and installation of a stand-alone software product, but merely a simple plug-in for the Internet Explorer browser. To go to an *iVocalize* audio-conference 'room', the user simply points the browser to a given URL address, and can leave the audio room window open while turning to other work, just as any other browser window. After the first time of use, the browser connects to the room immediately, without a further plug-in download.

Before an *iVocalize* session, a practice question helps the users to become comfortable with providing input. The moderator may draw attention to the text box by requesting specific responses to be entered in it. (Everyone seems to enjoy discussing the weather and to have observations about it!) Participants can adjust the size of the *iVocalize* browser window to their taste; and new users, or visitors to the class, need an explanation of how to use the private messaging (PM) and other text methods. Once the class has begun, the moderator may ask an assistant to monitor and restrict non-thematic text entries. The *iVocalize* software can block text and audio input, and can remove and ban a user from the room.

Combined use of text/ audio-conferencing and browser 'push'

The real-time text chat box in the *iVocalize* audio-conference display is a valuable feature serving both the moderator and the participants. The moderator can use it as a tool to help participants set up their audio 'voice,' giving them instructions on how to activate and adjust the audio, and troubleshooting if their set-up is not working properly. This can be done in public, or by PM without interrupting the general 'small talk' that helps participants to build camaraderie before the session begins. The moderator can also use PM to coach the participants as the session unfolds – e.g., cueing the next presentation, or discretely suggesting a wrap-up without interrupting aurally. This *iVocalize* feature gives a smooth flow to the class, and is an efficient substitute for the verbal cues required in face-to-face communication. In conditions where the

quality of audio transmission is not the same for all participants, the moderator or assistant can clarify or summarize aural points using the text chat tool.

Also using the text chat, participants can spontaneously recommend and share URLs during the session. Numerical references, bibliographic links, and general Web addresses can be communicated precisely through the text box. Clicking on a URL link allows participants to display the website in question in *iVocalize*'s 'whiteboard' display. A disadvantage of a high number of text entries is that they can scroll off the screen before being dealt with. To avoid this, the moderator may choose to 'push' Web displays to the group via *iVocalize*'s co-browsing/ Web-tour feature.

This 'push' feature is perhaps the most far-reaching of *iVocalize*'s browser-based tools. It allows the moderator to control the participants' displays, and to share this control with others. There is no limit to the variety of displays that a teacher can present in this manner, as long as they are available on the Web. Teachers can create Web presentations by placing illustrative materials on a Web server in advance, in the same way as a *PowerPoint* presentation can be published for online presentation. The teacher can line up these presentations for an *iVocalize* session in advance, by bookmarking their addresses in the browser.

All of these features are merged via *iVocalize*'s recording feature for later access. Between sessions, participants can remain in contact with one another via an asynchronous text-conference. Since the *iVocalize* audio room is browser-based, any Web-based text-conference software can be used for this purpose, attached to a permanent *iVocalize* room by the administrator, for group members to find whenever they go there.

Using audio software to push video displays

In the current study, *iVocalize*'s browser push feature was used to provide an online group with an experience corresponding to a video-conference without the use of video-conferencing software. A situation similar to that of a TV control room was created, in which the teacher acted as the director of a live broadcast, selecting separate camera shots as the presentation unfolded. The similarity between a well-planned Web-based presentation and a live TV show was touched on indirectly in the previous section of this report, in the observation that a moderator can cue the next participant via *iVocalize*'s PM feature, or can suggest a wrap-up without making an aural interruption. In these activities, the moderator is functioning in exactly the same way as a TV director in the control room, or as a floor manager on the TV studio floor. The study took this analogy to the next level, by creating a repertoire of online displays in advance of the session, each containing links to other displays for the teacher to select from one stage of the conference to the next.

The main *iVocalize d*isplay simulated the TV control room's video display console, providing a set of link buttons for the selection of different images, a transmission monitor showing the image(s) currently selected, and various sound-effect buttons (Figure 1). The occasion for the presentation was an 'end-of-2005' online class party for Athabasca University's MDDE662 online software evaluation course. Eight participants took part, and as each entered the audio discussion, the moderator activated his or her image in *iVocalize*'s main display window, by clicking on its link button. This caused the selected image to be 'pushed' instantly to all of the participants (see Figure 2). Each participant had provided the moderator with a personal image in

advance of the session, and one of them had exercised the right to be depicted via a cartoon image instead of an actual photo. Participants with webcams were given the option of injecting personal still-shot images into the presentation. They were provided in advance with the address of the Web server hosting the event, and used 'webcam' file transfer software to update their personal image to the event's server at fixed intervals. The *WheresJames* webcam publishing freeware was recommended to them for this purpose, in view of its ability to create special-effect backgrounds using chromakey. Several of the participants took advantage of this feature during the presentation.

Figure 1. Images and special effect options are presented in a TV control room-type display.

Figure 2. The selected image is pushed to participants on a 'transmission monitor'

The result was a creative presentation imitating the format of a one-hour TV talk-show, with a sequence of special events and guests. The eight participants shared in the pre-planning for the

production, preparing opening/ closing music and credits, and sound effects (applause, laughter, etc.). The moderator inserted these into the presentation at appropriate moments by activating webpages to which the audio effects were linked. When acting as an interviewer, he handed over the control function to an 'assistant director'. Although none of the visuals were live or animated, a compelling impression was given of a live video discussion, combining spontaneous audio with instantaneous accompanying visuals.

Conclusion

From an educational point of view, this exercise gave DE graduate students an opportunity to explore new ways of combining inexpensive online software for educational purposes. The experiment illustrated that, with a little ingenuity, an unique live online event can be created from a combination of inexpensive and even free collaborative software. Combining low-priced audio-conferencing software with a selection of browser-based visuals, and graphics-to-server file transfer techniques, a live conferencing format was created, using image selection and production techniques similar to those of the TV studio. No expensive online conferencing software was required, and many of the current conferencing packages would not have been capable of creating the desired impression anyway. Simple Web programming skills were required in the prior preparation for the event, together with an awareness of independent software applications that could be combined to produce the necessary functionality and effect. The most important single ingredient in the combination was the inexpensive audio-conferencing application, *iVocalize*, whose browser-based and 'push' features can generate a spontaneous combination of audio and video images, giving the illusion that the audio-conferencing software is in fact a full-blown video-conferencing package. As the interactive capabilities of the Web become more fully harnessed in distance education, such techniques may become a common means of providing every teacher and student with their own TV studio!

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Athabasca University