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Engagement and Performance for Female and Male Students in an Online Course

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Abstract

This study compared female and male students' progress through an asynchronously delivered Web-based course. Content analysis techniques were used to describe student behavior in a graduate course delivered using WebCT. Students had 114 days to complete and submit all materials. No time constraints were placed on students as to when assignments should be submitted. Findings showed that female students engaged earlier, male students remained engaged longer, and female students completed the course sooner than male students. Male and female students' overall performance in the course as measured by accumulation of points on assignments was similar.

Introduction/Theoretical Framework

Distance education offers many benefits for students and faculty. One of the touted benefits for faculty is the opportunity to develop individualized instructional sequences for students based on students' unique competencies (Dooley & Lindner, 2002). Another benefit for students is a greater opportunity to draw upon a variety of academic fields and knowledge bases to achieve personal and professional goals (Lindner & Dooley, 2002). However, learning outcomes are not the same for all students engaged in distance education. Research attempting to find ways to maximize learning for all distance education students must begin by identifying the factors that affect performance.

One possible factor is the learner's personality. Human temperament theory has been recognized as a subject for study since the time of Plato (Stokes, 2001). Yet the literature has thus far failed to identify significant differences in the temperament or personality of distance learners and learners in a traditional setting. For example, in a comparison of Web-based and traditional classroom courses student temperament, or how students react to the use of a computer as a substitute for the classroom, was not shown to affect the outcome of learning or satisfaction with the course (Stokes, 2001).

Another possible factor affecting performance is a distance learner's gender. Gunn, McSparran, Macleod, and French (2003) concluded women will often outperform men despite observable differences in interaction style during computer supported learning. While in traditional classroom settings, Justice and Dornan (2001) found achievement to be the same for males and females, some literature indicates that distance education offers even more important opportunities for female students than male students. For example, May (1994) found that women viewed distance education as a means to remove impediments to their education. She also noted that access to education was more important for women than was the format

of the educational opportunities. Carr, Fullerton, Severino, and McHugh (1996), found that women who successfully completed distance education courses develop resilience in the face of adversity.

On the other hand, the literature is unclear about the role that gender may play in distance learners' performance. Spronk (1990) proposed that distance learning might be a gendered activity. Instead of concern with programs for learners, she suggested that we examine how programs address the different life experiences of men and women. She speculated that the technologies of instruction might not be equally accessible to both groups. She also asked whether men and women require different levels of support while undertaking distance education courses. Sullivan (2001) justified those concerns when he found significant differences between male and female students in the way they identified an online environment's strengths and weaknesses. He particularly noted the value of online learning for nontraditional students, especially female adult learners who had children and family responsibilities. Additional literature indicates that gender may also be a factor in these various expectations among distance learners. Burge and Lenksyj (1990) noted that women participating in distance learning experiences required content that validated the events and happenings of their lives infused into the instructional and learning process. They noted that women living in small towns and rural communities (where distance education opportunities may be particularly important) have diverse life experiences that should be taken into consideration in distance education. They suggested that women are best served when the educational approach is both woman- and learner-centered.

According to Kirkup and von Prummer (1990) men and women require different levels of interaction and support during distance education classes. Women need to interact more with the instructor and other students. The authors attributed this need to differences in intellectual development between women and men. They recommend that this difference between the genders be accounted for in distance education courses.

Distance learners struggle with a unique set of challenges that often lead to non-completion of courses. High attrition rates of students enrolled in distance education courses are a concern of distance educators (Wickersham & Dooley, 2001). The literature identifies steps that instructors can take to lower attrition in distance education courses. Instructors in Web-based courses should have a methodology to determine the level of involvement of students in the learning process (Pappas, Lederman, & Broadbent, 2001). The facilitator should look toward the initial engagement, continuous engagement, the completion of the course and the students' performance in the course as indicators of satisfaction with the method of instruction, whether the course is offered in a traditional classroom or Web-based setting. But in order to improve the completion rate, we must first understand the challenges that distance learners face and the coping behaviors that they adopt.

Online learning provides the responsible learner with both the tools and the environment for a quality learning experience (Weinstein, 2002). As researchers, we ascribe to the philosophy that self-direction and responsibility for learning are required attributes for graduate students in any course, regardless if it is taught online or in the traditional setting (Howland, & Moore, 2002). If students are not willing to make the commitment of managing their time and motivation, online learning will present them with additional problems to the ones they already have (Weinstein, 2002). Closer looks at student behaviors in distance education have shown, for instance, that distance students are less likely to constructively communicate with other students and teachers (Lindner & Murphy, 2001; Miller & Pilcher, 2000). Further, distance students have varying levels of motivation, different life experiences, and require different levels of direction from instructors (Merriam, 2001). O'Regan (2003) determined emotion to be central and essential to the teaching learning process.

Educators have tried a variety of strategies in an attempt to help distance learners overcome their unique challenges successfully. Indeed, Cookson (1989) asserted that it is the responsibility of all educational institutions to provide a range of tools and experiences in order to maximize the learning of diverse student populations. While the academic rigor of courses delivered at a distance must remain similar to those offered on campus, instructional direction requirements can and should range from continuous input from instructors to self-directed learning by the students.

Distance education students requiring help may receive it in a different format than students in classroom settings (Taplin, Yum, Jegede, Fan, & Chan, 2001). It is necessary for the instructor to maintain a sense of community regardless of where the learning takes place. While this is readily accomplished in a classroom setting, it requires a little more planning and effort for Web-based courses (Brown, 2001). Grow (1991) theorized that in asynchronously delivered courses, an instructor's traditional role of providing feedback is less important than the role of motivator, coach, or delegator, implying that the instructor must establish a learning climate. In short, effective learning seems to require student engagement (Kearsley & Shneiderman, 1999). Instructor behaviors alone cannot determine student success rate, however. Success is at least partially controlled by student behavior. Previous research has shown, for example, that length of engagement in an asynchronously delivered course was positively related to a student's perception of learning (Lindner, Hynes, Murphy, Dooley, & Buford, 2002).

Another important factor to study in distance education is course design. In particular, the unique challenges faced by distance learners may be exacerbated when the course is offered asynchronously. This method of instruction and education is the result of an attempt to provide flexibility for work time and place, usually involving the use of learning materials, participation in discussions, written assignments, and receiving grades over the Internet. For asynchronous courses, there may be definite start and completion dates or there may be a flexible beginning and end. While asynchronous courses may seem to conform to the principles of andragogy and thus have wide appeal for adult learners, the literature has not yet shown that distance learners are more successful in any particular format.

Purpose

The purpose of this study was to compare female and male students' progress through an asynchronously delivered Web-based course. Several key questions guided the analysis of each student's progress and performance in the course:

1. When will males and females begin and end engagement in the course?
2. How long will males and females remain engaged in the course?
3. How will the males and females perform in an entirely asynchronously delivered course?

Methods

For this descriptive and historical research, content analysis techniques were used by the researchers to analyze students' engagement and achievement in a graduate course delivered asynchronously to both female and male students. "Content analysis is a technique that enables researchers to study human behavior in an indirect way, through an analysis of their communications" (Fraenkel & Wallen, 1999, p. 405). The content analysis for this study consisted of both qualitative and descriptive techniques as described by Fraenkel and Wallen.

As with any study, it is important for the researcher to establish internal validity, external validity, reliability, and objectivity. However, in the qualitative paradigm these terms are referred to as credibility, transferability, dependability, and confirmability. Credibility and dependability were established using the technique of triangulation. "Perhaps the best way to elicit the various and divergent constructions of reality that exist within the context of a study is to collect information about different events and relationships from different points of view. Different questions, different sources, and different methods should be used to focus on equivalent sets of data" (Erlandson, Harris, Skipper, & Allen, 1993, p. 31). For this study, both content analysis and semi-structured interviews provided triangulation. Generalizability attempts to apply the findings of a study to other contexts. The naturalistic researcher "does not maintain that knowledge gained from one context will have no relevance for other contexts or for the same context in another time frame. 'Transferability' across contexts may occur because of shared characteristics" (Erlandson, et al., 1993, p. 32). In this study, the researchers collected engagement patterns and interview transcripts which provided sufficient detail to allow the reader to decide transferability. The fourth requirement, confirmability, was established by conducting an audit trail.

The naturalistic setting for this study was a graduate course entitled *Principles of Adult Education* during the Spring 2002 semester. This course was a departure from our usual design for graduate-level distance

education courses. Unlike our other distance-delivered graduate course offerings that have included and even emphasized the use of synchronous delivery strategies (face to face meetings, audio and videoconferencing), this course employed only the asynchronous technologies and delivery strategies available through WebCT™. WebCT™ is a commercial software set of Web course-development tools for creating instructional environments at a distance (WebCT™, 2001). No synchronous interaction was planned or conducted. The course had a variety of structured learning activities that were designed to enhance student/technology, student/student, student/content, and student/instructor interactions. Although there no synchronous interactions planned or conducted these interactions provided multiple opportunities for rich and continuous communications between and among students and the instructor. The structure of the course also allowed the instructor opportunities to modify instruction (individualizing instructional sequences) along the way, based on students' demonstrated competence and needs.

There were 24 students enrolled in the course (16 male students and 8 female students). Students had 114 days to complete and submit all materials. January 14, 2002, was the first day students could submit assignments and May 7, 2002, was the last day. No time constraints were placed on students as to when assignments should be submitted during this time frame. The instructor worked under the assumption that as graduate students they would take responsibility for their learning.

Students were provided the following written instructions:

Welcome to Agricultural Education 610 "Principles of Adult Education." This course is designed to be asynchronously delivered...meaning you can work on meeting the course objectives at any time or location. You can also work on most assignments out of sequence. For example, you may wish to work on Module 1 and 4 before working on Module 2 and 3.

There are 14 course modules that you will work through over the semester. You will complete 12 assignments along the way (ALL ASSIGNMENTS MUST BE SUBMITTED THROUGH WEBCT'S ASSIGNMENT FEATURE): Four reaction papers; four argument papers; twenty online discussion postings; one student lead instruction; one learning contract; and one application project.

ALL ASSIGNMENTS ARE DUE MAY 7, 2002.

The data collection instrument was based on the research questions. Four categories were used initially to classify the data: initial engagement, continuous engagement, completion of course, and performance in course. Initial engagement was defined operationally as the first day students submitted an assignment. Continuous engagement was defined operationally as the number of days between the submission of the first and last assignment, or the length of time from initial engagement to course completion. Completion of course was defined operationally as the last day students submitted an assignment. Any students who started early and finished late were still classified as continuous engagers. This was verified by our triangulation using follow-up interviews. We discovered that students were often thinking about the course even when otherwise occupied. Performance in the course was defined operationally as the percentage of points earned on each assignment and overall. Students also were grouped by one of three patterns of engagement: starts early and finishes early; starts early and finishes late; starts late and finishes late. A fourth possible pattern of engagement, starts late and finishes early, was not detected.

Additionally, nine students were interviewed by telephone or face-to-face to help the researchers gain a more thorough description of why the students engaged and performed as they did. Interviewees were selected to include at least one of each gender by level of engagement. Students were coded by gender (Male or Female), location (Distance or Campus), and a number based upon when they were interviewed (1 through 9) to ensure confidentiality.

The researchers recognize the design limitations of using intact classes. Caution is warranted against transferring these findings beyond this class. Additional research is needed to support and prove the transferability of findings and recommendations to other naturalistic settings. This study is a part of a larger study examining how students engage and perform in asynchronously delivered courses.

Findings

The findings of this study were reported in four areas: initial engagement, continuous engagement, completion of course, and performance in course.

Initial Engagement

Overall, students' initial engagement in the course varied widely (Min=4 days to engage; Max=113 days to engage). Students, on average, initially engaged in the course approximately 43 days (SD=39.5) after the beginning of the course. The first quartile of the students began submitting materials online within 8 days of the start of the course (see Figure 1.) The second quartile of students began submitting materials online between 12 and 21 days from the start of the course. The third quartile of students began submitting materials online between 25 and 83 days from the start of the course. The fourth quartile of students began submitting materials online between 83 and 113 days from the start of the course.

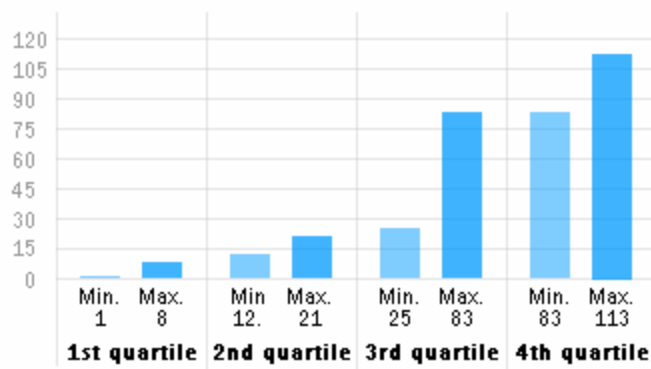


Figure 1. Initial engagement of students by quartile.

Continuous Engagement

Overall students' continuous engagement in the course varied widely (Min=1 day engaged; Max=110 days engaged). Students, on average, engaged in the course approximately 58 days (SD=32.2) after initial engagement. The first quartile of the students engaged in the course for 79 to 110 days (see Figure 2.) The second quartile of students engaged in the course for 69 and 77 days. The third quartile engaged in the course between 30 and 67 days. The fourth quartile engaged in the course between 1 and 27 days. On average, female students (Mean=55 days engaged) tended to engage in the asynchronously delivered course over 5 days less than male students (Mean=60 days engaged).

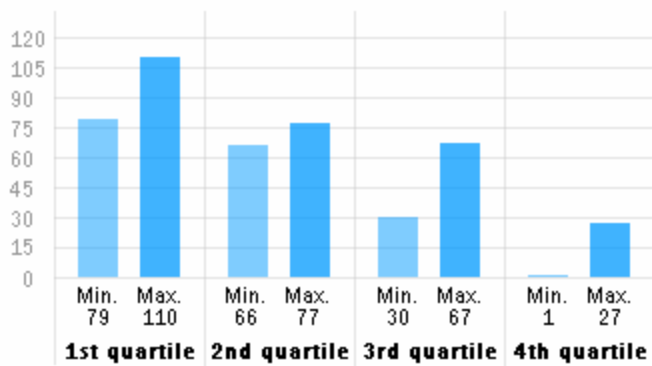


Figure 2. Continuous engagement of students by quartile.

Based upon the qualitative findings, three patterns emerged in terms of continuous engagement: (1) start early and finish early; (2) start early and finish late; and (3) start late and finish late. Starting early is defined as submitting the first assignment within the first month of the course. Starting late is defined as submitting the first assignment in April of the spring semester. Finishing early is defined as submitting the last assignment by the first week in April. Finishing late is defined as submitting the last assignment by the last class day, which was May 7, 2002.

The researchers were interested in looking at gender and location in terms of engagement in an asynchronous course. Of the total students enrolled in the course, there were 11 males at a distance, 5 males on campus, 6 females at a distance, and 2 females on campus. Percentages were calculated to provide a snapshot of the patterns of engagement. The percentages are based upon the number in each category divided by the total number of students who fit into that category. Although the number of respondents is small, in the qualitative paradigm the researchers seek a deeper understanding of phenomena in lieu of an attempt at generalization. These patterns of engagement pose interesting findings in need of further investigation.

More females started early and finished early (63% compared with 19%). All of the females on campus started early and finished early. In the category of starting early and finishing late, it is interesting that there were no females, although 44% of males fell into this category. In terms of percentages, there were more males on campus in this category (60%) than at a distance (36%). None of the on campus students (male or female) fell into the category of starting late and finishing late. The percentage of distance students falling into this category was essentially the same regardless of gender (54% male and 50% female).

After establishing these three categories of continuous engagement, students were chosen by purposive sampling and interviewed to help the researchers understand more thoroughly why these students engaged as they did. Based upon these student interviews, five themes emerged: content relevancy, interaction/feedback, initial engagement, continuous engagement, and course completion (see Table 1.)

Table 1: Audit Trail of Themes Engagement

	Start Early, Finish Early	Start Early, Finish Late	Start Late, Finish Late
Content Relevancy			
Usefulness & Applicability	FC5, FD6, MD8	MD1, MC2, MC3	FD4, FD7, MD9
Enhanced Self-Directedness	FC5, MD8	MD1, MC2, MC3	None
Peaked Interest in Subject	None	MC2, MC3	None
Interaction/Feedback			
Not Necessary	None	MD1	None
With Instructor	FC5, FD6, MD8	MC2, MC3	FD7
With Other Students	FC5, FD6, MD8	MC2, MC3	FD4, FD7
Initial Engagement			
Effect of Deadlines	None	MD1, MC2, MC3	FD4
Planning	FC5, FD6, MD8	MD1, MC2	FD7, MD9
Technology Challenges	FC5	MC3	None
Continuous Engagement			
Need to Finish/Goal-Oriented	MD8	MD1	MD9
Plan Time for Class	FD6, MD8	MD1	FD4
Catch Time for Class (Sporadic)	FC5	MC2, MC3	FD7
Course Completion			
Other Classes/Factors	FC5, MD8	MD1, MC2	FD4, FD7, MD9
Interaction With Other Students	FD6, MD8	MC2	None
Usefulness/Applicability	FC5	MC2	None
Deadlines	MD8	MC3	FD4, MD9

Note. F=female, M=male, C=campus, D=distance, 1 through 9=when the student was interviewed

Content Relevancy

According to Burge and Lenksyj (1990), women need course content to be relevant to events and happenings in their lives. Therefore, the first theme explored was content relevancy. Both males and females found the course content to be relevant. They specifically addressed its usefulness, applicability, enhancement of self-directedness, and ability to pique their interest in the subject matter.

Feedback/Interaction

None of the late starters mentioned an increase in their self-directedness. Perhaps their lack of self-directedness led to their procrastination in engaging in the course. Kirkup and von Prummer (1990) contend that women tend to need to interact more with the instructor and other students. All students in our sample, except one male (MD1), found interaction with other students and interaction with the instructor to be a critical component of course engagement. In particular, student responses noted that peer accountability helped them to complete assignments and to continue to engage in the course.

Initial and Continuous Engagement

Kearsley and Shneiderman (1999) indicate that effective learning requires student engagement, i.e. initial engagement, continuous engagement, and course completion. Our findings support this notion but provide interesting patterns based upon gender and location. Some mention of unfamiliarity with the technology features of this course surfaced, but this unfamiliarity did not seem to have an effect on the initial engagement of the student. A substantial finding within the theme of initial engagement is the student's

perception of deadlines. None of the students who started and finished early found the deadlines to have an impact on their initial engagement. An intrinsic self-motivation, rather than an imposed external deadline, compelled these students to engage early. When planning time for working on course assignments, competing courses with multiple deadlines tended to have precedence, thus affecting some student's initial and continuous engagement in the course. In terms of completing the course, respondents brought up several previously mentioned themes that had an impact on their completion of the final assignment: other classes competing for time, interaction with other students, and the usefulness and applicability of the material. Although the students who started and finished late pointed out that student interaction and course usefulness/applicability were important factors in their course satisfaction, they did not state this as a motivator for course completion.

Completion of Course

Overall, students' completion date in the course varied (Min= day 61; Max=day 114). Students, on average, completed the course on approximately the 101st day (SD=17.7) of the course. The first quartile of the students completed the course by the 80th day. The second quartile completed the course between the 85th and 105th day. The third quartile completed the course between the 111th and 112th day. The fourth quartile was completed on the last day (114th day). On average, female students (Mean=93 end date) tended to complete the asynchronously delivered course almost 12 days sooner than male students (Mean=105 end date).

Performance in Course

Overall student achievement for female and male students was similar. The average overall score for all students was 92.8%. Female students averaged 93.3% and male students averaged 92.6% overall in the course.

Discussion, Conclusions, and Implications

As methods of delivering courses using asynchronous delivery strategies are implemented and tested, the findings from this study may provide useful information to those teachers delivering such courses. The basic premise of self-direction allows students to engage and progress at their own chosen pace. Our study provides support for a self-paced assignment structure, at least for all asynchronously delivered courses. Further study of traditional, expository-based courses, is necessary to determine if self-paced assignments would be effective in other formats.

Furthermore, this study has implications for considering gender as a factor when establishing teaching techniques and structures. For example, we found several differences between how females and males engaged in the course. On average, females tended to engage sooner in the course than males. Females also tended to complete the course sooner than males. Procrastination, however, has yet to be clearly identified as a gender-specific personality tendency. Nevertheless, an implication exists that by not structuring early engagement activities for both females and males, differences between these groups will be magnified. It is recommended that early engagement activities for all students be established.

Students' continuous engagement in the course varied. Female students tended to engage in the course for fewer days than males. An implication exists that female students will "learn" less in an asynchronously delivered course than male students, that is, if we accurately measure learning. The qualitative research presented reveals that while the students engaged differently in terms of length of engagement, all of the students (both male and female) mentioned the usefulness and applicability of the concepts they learned in the course.

Male students were more likely than female students to wait until near the last day of the course to complete their engagement in the course. While all the students were able to complete the course on time, male students tended to "back-load" submission of assignments. This resulted in male students receiving less feedback than female students. As noted earlier, an implication exists that in asynchronously delivered courses, an instructor's traditional role of providing feedback is less important than other roles such as

motivator, coach, or delegator (Grow, 1991). The qualitative research presented here refutes Grow's idea (1991). The interviewed students noted the importance of the feedback not only from the instructor but also from their peers. It is recommended that methods for instructor feedback and student interaction be provided in an asynchronously delivered course.

Male and female students performed equally well on assignments. This finding is consistent with the literature on gender as a factor in learning in traditional settings.

The authors recognize the limitations of the study and advise caution in the application of these results. Our research did not examine the potential impact of such factors as academic load, involvement in non-academic activities, family responsibilities, and/or work obligations, any and all of which could affect our results. It is recommended that future research examine the factors affecting success in distance education. Our study found that male and female students approach and engage in distance education differently. Nevertheless, their performance does not appear to be affected by these differences in behavior. The reasons for gender's lack of impact on performance have not been determined. One may speculate, as did Carr, Fullerton, Severino, and McHugh (1996), that women who successfully completed distance education courses have developed resilience. On the other hand, women's strategies for learning in distance education courses may be more appropriate than men's, and thus, female students have an advantage over their male counterparts in such nontraditional environments. These are questions we will continue to explore and welcome those willing to work with us.

References

- Brown, R. E. (2001). The process of community building in distance learning classes. *Journal of Asynchronous Learning Environments*, 5(2). Retrieved August 09, 2002 from http://www.aln.org/alnweb/journal/Vol5_issue2/Brown/Brown.htm
- Burge, E., & Lenksyj, H. (1990). Women studying in distance education: Issues and principles. *Journal of Distance Education*. Retrieved September 12, 2002 from http://cade.icaap.org/vol5.1/9_burge_and_lenskyj.html
- Carr, K. C., Fullerton, J. T., Severino, R., & McHugh, M. K. (1996). Barriers to completion of a nurse-midwifery distance education program. *Journal of Distance Education*. Retrieved August 30, 2002 from <http://cade.icaap.org/vol11.1.carretal.html>
- Cookson, P. (1989). Research on learners and learning in distance education: A review. *The American Journal of Distance Education*, 3(2), 22-34.
- Dooley, K. E., & Lindner, J. R. (2002). Competencies for the distance education professional: A self-assessment to document professional growth. *Journal of Agricultural Education*, 43(1), 24-35.
- Erlandson, D. A., Harris, E. L., Skipper, B. L., & Allen, S. D. (1993). *Doing naturalistic inquiry*. Newbury Park, CA: Sage Publications.
- Fraenkel, J. R., & Wallen, N. E. (1999). *How to design and evaluate research in education*. New York: McGraw-Hill.
- Grow, G. O. (1991). Teaching learners to be self-directed. *Adult Education Quarterly*, 41(3), 125-149.
- Gunn, C., McSparran, M., Macleod, H., & French S. (2003). Dominant or different? Gender issues in computer supported learning. *Journal of Asynchronous Learning Networks*, 7(1), Retrieved November 16, 2003 from <http://www.sloan-c.org/publications/jaln/v7n1/index.asp>
- Howland, J.L., & Moore, J.L. (2002). Student perceptions as distance learners in internet-based courses. *Distance Education*, 23(2) Retrieved May 17, 2003 from www.ingentaselect.com/vl=1/cl=2/nw=1/rpsv/catchword/carfax/01587919/v23n2/m_cp1-

- Justice, E. M., & Dornan, T. M., (2001). Metacognitive differences between traditional-age and nontraditional-age college students. *Adult Education Quarterly*, 51, (3) 01. Retrieved September 11, 2002 from <http://www.ingenta.com/isis/browsing/AllIssues/ingenta?journal=pubinfobike://sage/j396&startyear=2000> &WebLogic
- Kearsley, G., & Shneiderman, B. (1999). Engagement theory: A framework for technology-based teaching and learning. Retrieved August 08, 2002 from <http://home.sprynet.com/~gkearsley/engage.htm>
- Kirkup, G., & von Prummer, C. (1990). The needs of women distance education students. *Journal of Distance Education*. Retrieved September 12, 2002 from http://cade.icaap.org/vol15.2/7_kirkup_and_von_lprummer.html
- Lindner, J.R., Hynes, J.W., Murphy, T.H., Dooley, K.E., & Buford, J.A., Jr. (In-press). A comparison of oncampus and distance students' progress through an asynchronously delivered web-based course. *Southern Journal of Agricultural Education*.
- Lindner, J.R., & Dooley, K.E. (2002). Agricultural education competencies and progress towards a doctoral degree. *Journal of Agricultural Education*, 43(1), 57-68.
- Lindner, J. R., & Murphy, T. H. (2001). Student perceptions of webct in a web supported instructional environment: Distance education technologies for the classroom. *Journal of Applied Communications*, 85(4), 36-47.
- May, S. (1994). Women's experiences as distance learners: Access and technology. *Journal of Distance Education*. Retrieved August 30, 2002 from <http://cade.icaap.org/vol9.1/may.html>
- Merriam, S. (2001). Andragogy and self-directed learning: Pillars of adult learning theory. In S. Merriam (Ed.), *New Directions for Adult and Continuing Education*, No. 89. San Francisco, CA: Jossey-Bass
- Miller, G., & Pilcher, C.L. (2000). Are off-campus courses as academically rigorous as on-campus courses? *Journal of Agricultural Education*, 41(2), 65-72.
- O'Regan, K., (2003). Emotion and e-learning. *Journal of Asynchronous Learning Networks*, 7(3), Retrieved November 16, 2003 from <http://www.sloan-c.org/publications/jaln/v7n1/index.asp>
- Pappas, G., Lederman, E., & Broadbent, B. (2001). Monitoring student performance in online courses: New game - new rules. *Journal of Distance Education*. Retrieved August 07, 2002 from <http://cade.icaap.org/voll6.2/pappasetal.html>
- Spronk, B. (1990). Gender in distance education. *Journal of Distance Education*. Retrieved August 30, 2002 from http://cade.athabascau.ca/vol15.2/5_editorial-english.html
- Stokes, S. P., (2001). Satisfaction of college students with the digital learning environment. Do learners' temperaments make a difference? *The Internet and Higher Education*, 4(1), 31-44.
- Sullivan, P., (2001). Gender differences and the online classroom: Male and female college students evaluate their experiences. *Community College Journal of Research and Practice*, 25(10), 805-818 Retrieved May 13, 2003 from www.gseis.ucla.edu/ERIC/abstracts/JC509790.htm
- Taplin, M., Yum, J., C. K., Jegede, O., Rocky, Y.K. Fan, & May S.C. (2001). Help-seeking strategies used by high achieving and low-achieving distance education students. *Journal of Distance Education*. Retrieved August 07, 2002 from <http://cade.athabascau.ca/vol16.1/taplin.html>
- WebCT. (2001). Retrieved November 7, 2001, from <http://www.webct.com/>

Wickersham, L. E, & Dooley, K.E. (2001). Attrition rate in a swine continuing education course delivered asynchronously. Proceedings of the 28th Annual National Agricultural Education Research Conference, 48. Retrieved August 8, 2002 from <http://aaaeonline.ifas.ufl.edu/NAERC/2001/Papers/wickersh.pdf>

Weinstein, C. E. (2002). Learner control: The upside and the downside of online learning. NISOD Innovation Abstracts, XXIV(25).