EXPERIENCES WITH ONLINE DISCUSSION FORUMS IN DEVELOPING COUNTRIES:

Comparison of "DAE 642 Adult Education and Development" and "BIS 204 Data Organization Methods" at the University of Botswana.

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ABSTRACT

This paper determines variables that influence the students' utilization and perception of online discussions in developing countries. It applies criteria found in developed countries to developing countries to define whether these criteria fit or need adoption to be useful for implementation. This paper is based on a comparison of two courses offered at the University of Botswana. Quantitative and qualitative methods of data analysis were used to establish the influence of variables identified through literature review.

Through the analysis the following variables were found to influence the students' use and perception in a positive way: A high level of student maturity and a high female students' population; Discussions are an integral part of the course; They are being assessed but are also used out of personal interest and educational development; Sufficient access to ICTs and enough support is provided; A safe environment is achieved. In comparison to developed countries developing countries need to focus on providing access to technologies and imparting ICT skills.

Keywords: online discussion forums, blended learning

INTRODUCTION

Blended learning is learning that combines face-to-face and online approaches. Essential parts of a blended learning environment are online communication tools. Online discussion forums (also called online discussions) are asynchronous online communication tools. Online discussion, whether it is used for online learning or as a part of a blended learning experience, is an essential environment to encourage students to actively participate in communication (Im and Lee, 2003).

This paper will identify variables that influence students' use and perception of online discussions in developing countries. Several studies have been conducted in developed countries but few studies can be found in developing countries. Therefore this study applies variables found in developed to developing countries to define whether these criteria fit or need adaption to be useful for implementation.

The following research questions were formulated to guide this study:

1. Which variables have been found in previous studies to influence the utilization and perception of online discussions forums?

2. Are there any differences in the influencing variables in developed and developing countries?

Two blended learning courses are analysed that were conducted at the University of Botswana in the Semester Two of the Academic Year 2003/2004.

LITERATURE REVIEW

Although eLearning is a relatively new teaching and learning concept in the academic environment, extensive research can be found on various aspects of eLearning, including the use of online discussion forums. This literature review presents the major variables identified in the research that influence the perception and the use of online discussion forums focusing on studies carried out in academic environments and preferably using blended learning approaches.

Target group

Most research on target groups is done according to gender. Opinions differ as to whether gender-based communication patterns are being transferred from face-to-face discussions to online environments or not. Most studies show a strong dominance of males in method of argument and number and length of messages posted (Herring, 2000). Some studies show that the anonymity and the social distance the Internet offers seem to allow female participants to be more active (Im and Lee, 2003) and therefore show either no difference in number of postings or readings according to gender (Masters and Oberprieler, 2003) or even a higher activity of female students in online discussions (Im and Lee, 2003).

Target groups must also be analysed in terms of maturity, independence and motivation towards more flexible types of learning, like online discussion (Oblinger, 2003, Im and Lee, 2003, Warren and Rada, 1998). In developed countries there is a remarkable change in the student population, that benefits from these forms of learning. In a study carried out in the USA an increase in the number of part-time students, of women or of students older than age twenty-five was found. Technology is assumed to be a natural part of a student's environment (Oblinger, 2003).

Integration of online discussions in course structure

One of the key success factors for building effective online learning communities of the Australian Flexible Learning Framework (n.d.) is carefully establishing and planning online activities, including online discussions. This includes the definition of goals and objectives, an analysis of the target group, especially concerning computer and information literacy skill to define the amount of support needed, the definition of roles and expectations for participants, the provision of support and the establishment of a plan to deal with technical issues. Edelstein and Edwards (2002) list similar considerations, including how much time students need to effectively participate, how critical the discussion is to the achievement of the learning objective(s) or how to establish guidelines for the level/quality of participation that is expected from the student(s).

Assessment

Closely related to the integration of online discussion in the course structure is the way online discussions are integrated into course assessment. This is particularly true for blended learning environments, where learners do not rely solely on online communication methods to interact with their lecturers or colleagues. Literature refers to assessment being one cause of increased postings (e.g. Warren and Rada, 1998, Edelstein and Edwards, 2002).
Yet Oliver (2003) reports that students play the "game of assessment", making postings that earned marks but rarely contributed otherwise. Oliver suggests that carefully designed questions, providing guidelines for learners, or rewording questions might be much more effective than assessment.

Access to technology and computer skills

An aspect that is less discussed in developed countries literature is the ease of access to technology and the ease in dealing with ICTs. Yet it is a crucial aspect of using online discussion forums, especially in developing countries, where resources might be scarce and computer literacy not as advanced as in developed countries. For example in South Africa, Masters and Oberprieler (2003) define in their study on the use of asynchronous

discussion forum at the University of Cape Town the lack of IT skills as one of the barriers to equitable online participation.

Support

Analysing studies conducted to assess criteria that influence online discussion forums, one of the most important criteria found is the presence and quality of feedback.

Rossman (1999) conducted a document analysis of courses that used asynchronous learner discussion forums at Capella University in the USA. Results showed that participants' requirements included primarily feedback, either from a tutor or from colleagues.

Oliver (2003) reports that after conducting a study at the California College of Podiatric Medicine on the success of asynchronous learning environments used to enhance faculty-student collaboration, the major factors for stimulating student participation were tutor enthusiasm and expertise.

Safe environment

Social interaction is crucial to the success of online discussions. To provide this a facilitator needs to build a safe environment for his/her participants.

Oren, Mioduser and Nachmias (2002) present the following results of five studies carried out at Tel-Aviv University's School of Education that explored social climate issues in synchronous and asynchronous online academic courses: contrary to the wide-spread assumption, that an online environment is a "cold medium", lacking the warmth of social face-to-face interaction, where intonation, gestures and body language exist, in all online discussion groups a social activity layer gradually developed, fulfilling an important role by supporting the learning group's work. In order to achieve the degree of intimacy required for significant exchanges within online interactions, they recommend to limit the number of participants to 20.

EDUCATIONAL CONTEXT OF THIS STUDY

eLearning at the University of Botswana (UB)

Since 2001 UB has embarked on an eLearning initiative. eLearning is defined as the appropriate blend of ICTs to enhance student-centred, collaborative and lifelong learning, therefore combining face-to-face and web-based approaches in teaching and learning. To host eLearning activities the University has licensed the eLearning platform WebCT. Classes can be scheduled in departmental computer labs and the eLearning SMART classroom. Furthermore students have independent access to computers outside class in the Library or some open access computer labs, e.g. the graduate lab.

Description of Courses DAE642 and BIS204

"DAE642 Adult Education and Development" was a course in the Master of Adult Education Program offered by the Department of Adult Education at UB.

The teaching and learning methods in DAE 642 included lectures, group and individual activities, online research and intensive reading. Classes took form of interactive seminars, involving discussions of topics in the whole class as well as in small groups and in online discussion forums. DAE 642 students were linked to students at the University of Georgia, USA, who were enrolled in the course "EADU8030 International Adult Education". The international discussions took place using the UB eLearning platform WebCT. While the participants of DAE642 met once a week for three hours, the EADU8030 students were participating in a distance education course.

"BIS 204 Data Organisation Methods" was an undergraduate course offered at UB under the Faculty of Business in the Department of Accounting and Finance. It introduced students to the concept of data structuring using Java programming language in a business environment. The course was technical and practical rather than theoretical. It was offered in a blended way, combining face-to-face classes with online discussion forums. The teaching and learning methods included lectures, group exercises in the SMART classroom and face-to-face group discussions combined with online discussions on WebCT. Communication was done mainly by face-to-face consultation and e-mail.

RESEARCH METHODS

The following describes the research methods used, including the sample and methods for data collection and data analysis.

Sample

These two courses have been selected because of differences in student population and maturity level, amount of support, integration of online discussion in course structure, ease in access and familiarity with technology. Furthermore these two courses were one among the first courses at UB to use online discussion forums extensively in the course delivery. The research sample was composed of 57 students, nine students from DAE642 and 48 from BIS204.

Data collection

Qualitative and quantitative data were gathered throughout Semester Two of the Academic Year 2003/2004 over the period of four months.

Data were collected in the following ways:

- Usage of the online discussions was tracked by the "WebCT student tracking tool", offering insight into level of activity of a student, e.g. total discussion messages read and posted.
- An anonymous online questionnaire was completed by students at the end of the course offering insight in student's perceptions on various aspects of the online course, in particular on the perception of the online discussions.
- Discussion postings and e-mails sent to lecturers were collected through WebCT.
- Since sample size in the DAE642 group (n=9) is too small to perform meaningful statistical analyses a focus group discussion was conducted with the students to provide detailed insight on the students' perception of the online discussions.

Data analysis and limitations

Data were analysed using the statistical packages MS Excel and SPSS. Eight students from DAE642 (89%) and 23 students from BIS204 (48%) completed the online questionnaire. 100% of students of DAE642 participated in the focus group discussion. Student usage tracking was performed for the whole sample (n=57). In total 190 discussion messages and e-mails were analysed. Where data collection methods allowed the courses were analysed according to the different variables individually, based on frequencies. Then the findings were compared between the courses. For some variables the courses could only be analysed as a whole and again compared between the courses.

The researchers' main limitation was the small sample of students and limited student's participation in completing the anonymous online questionnaires on WebCT. It was also found difficult to define the influence of single variables on the courses, since the students' use and perception result from the total of the variables that make up a course.

FINDINGS

In this section the courses are analysed to determine how the variables found in the literature review influenced students' perception and usage of online discussions. The following eight variables were found: target group (maturity level and gender), integration of online discussions in course structure, assessment, support, access to technology, level of computer skills and a safe environment.

Variable 1: Maturity Level

The majority of DAE642 students (89 %) has gained substantial working experience, are older than 30 and can be defined as mature, adult learners. Two students of DAE642 are full-time while the rest are part-time master students.

Of the 48 undergraduate BIS 204 students 47 were full-time students. Three were returning adults who have been working in industry before, the rest (94 %) were aged in between 18 and 23 and can be defined as immature learners.

Students' perception

The data collection methods used only allowed an analysis of the two courses as a whole. The positive response of DAE642 students was overwhelming high: 100% of the students liked the online discussions and 100% found them useful. The response of BIS204 students is slightly less positive: 82% liked the online discussions, 91% found them useful.

Students' usage

The following table compares the usage of discussion forums of DAE642 and BIS204:

Usage	**DAE642**	**BIS204**
Messages written (including BIS204 e-mails sent to lecturer instead of being posted into forums)	88	102 (34 postings + 68 e-mails)
Messages read	1185	2679
Messages written per student	10	2
Messages read per student	132	56

Figure 1: Usage of discussion forums for DAE642 and BIS204

Both courses used the discussions forums over a period of 11 weeks. The analysis shows that DAE642 students were more active writing and reading messages than BIS204 students.

Variable 2: Gender

DAE642 female students accounted for 67 %, BIS204 female students for 63 % of the whole students' population.

Students' perception

Since 100 % of the student population of DAE642 liked the online discussions and found them useful no significant difference can be found according to gender in DAE642.

In BIS204 100 % of the students who did not find the online discussions useful and 67 % of the students who did not like the online discussions were female students.

Students' usage

No significant difference was found in the postings read and written according to gender. Female students were slightly more active than their male counterparts.

DAE642	Total number	%	Postings written	%	Postings read	%
Women	6	67 %	79	71 %	860	76 %
Men	3	33 %	33	29 %	277	24 %
Total	9	100 %	112	100 %	1137	100 %

BIS204	Total number	%	Postings written	%	Postings read	%
Women	30	63 %	73	72 %	1819	68 %
Men	18	37 %	29	28 %	860	32 %
Total	48	100 %	102	100 %	2679	100 %

Figure 2: Usage of discussion forums according to gender for DAE642 and BIS204

Variable 3: Integration of online discussion forums in course structure and Variable 4: Assessment

The DAE642 course outline states, "among the expected learning outcomes of the course are improved lifelong learning skills. These include accessing and using information, using online resources, doing academic writing, working in groups, participating in discussions, and making presentations" (Youngman, 2003). This is reflected in the assessment strategy, that allocates 10% of the total course marks to lifelong learning skills, including participating in discussions (defined as "frequency and quality of contribution to the Web CT Discussion Forum").

Two discussion forums were set up, a general one for introductory remarks and any other topics students wanted to discuss, and one for a specific discussion of globalisation. Later on a third forum was added, after experience showed that the group got too big to discuss efficiently (n=26). The group was split in three, each subgroup consisting of DAE642 and EADU8030 students, and assigned one task. The task consisted on discussing on a specific topic and then summarising the postings of each subgroup.

The BIS204 course outline only mentioned a general use of WebCT without specifying the online discussion activities. The BIS204 online discussions were divided into three forums:

1. Individual task forum: in this forum one question every two weeks was posted (n=6) to be completed outside class on an individual basis. Students were supposed to post their results back into the forum, to share findings with their colleagues.
2. Group discussions: two group tasks were posted into this forum. These tasks were supposed to be done in groups of five students using access to ICTs in the SMART classroom and ran over a period of five weeks. The task was composed of research on the World Wide Web. Results were supposed to be posted back into the forum.
3. Student questions: this forum was used for general questions and comments.

Both individual and group tasks were incorporated into the assessment scheme and amounted in total to 5 % of the final grade. The continuous assessment results reflect that out of the 48 students, 38 students (79%) completed one or more of the tasks posted in the forums. Completion rate was not high, 25 % of the entire class got 0-1.9 %, while only 15 % got the total of 5 % allotted to the online forum participation grade (see fig. 3 Student performance on discussion forums).

% allotted for completion of online discussion tasks	Students in total	%
0 – 1.9 %	12	25 %
2 – 2.9 %	16	33 %
3 – 3.9 %	7	15 %
4 – 4.9 %	6	13 %
5 %	7	15 %
Total	48	100 %

Figure 3: Student performance on discussion forums

Students' perception

The data collection methods used only allowed an analysis of the two courses as a whole. The positive response of DAE642 students was overwhelming high: 100% of the students liked the online discussions and found them useful. The response of BIS204 students is slightly less positive: 82% liked the online discussions, 91% found them useful.

Students' usage

Analysing the different forums, the amount of postings written of DAE642 and BIS204 students were as followed:

DAE642 forums	Postings in total	Postings (%)
General forum	30	34 %
Globalisation forum	30	34 %
Task forum	28	32 %
Total	88	100%

Figure 4: Usage of different forums in DAE642

Messages were distributed equally over the forums. A detailed content analysis of all messages posted revealed that "off topic" messages account for 30% of the total amount of messages in all three forums.

BIS204 forums	Messages posted in forums	%	Messages sent by e-mail	%	Total	%
Individual tasks	10	30 %	39	57 %	49	48 %
Group tasks	13	38 %	29	43 %	42	41 %
General questions	11	32 %	-		11	11 %
Total	34	100 %	68	100 %	102	100 %

Figure 5: Usage of different forums in BIS204

The analysis of usage of the forums and e-mails sent in BIS204 showed that most of the messages posted or sent were part of the individual tasks (48 %). The majority of the messages posted in the forums were part of the group tasks. General questions accounted to 32 % of all postings in the forums. A detailed analysis of the postings' content showed that the majority of the postings were submissions of assignments.

Variable 5: Level of computer skills

Computer skills of students of DAE642 were varied. They ranged from non-existent to excellent. Yet the majority had low computer skills.

BIS204 students are Business Information Systems students from Faculty of Business (63 %) and Library Information Systems students from Faculty of Humanities (37 %). They are supposed to be enrolled in computer-orientated programmes and therefore are expected to possess adequate computer skills.

Students' perception

In the online questionnaire DAE642 and BIS204 students rated their perception of the online discussions according to their computer skills (after the course) as following:

Level of computer skills DAE642:	**%**	**liked online discussions**	**found online discussions useful**
Fair computer skills	50 %	100 %	100 %
Good computer skills	25 %	100 %	100 %
Excellent computer skills	25 %	100 %	100 %
Total	100%		

Level of computer skills BIS204:	**%**	**liked online discussions**	**found online discussions useful**
Fair computer skills	22 %	80 %	100 %
Good computer skills	65 %	86 %	87 %
Excellent computer skills	13 %	67 %	100 %
Total	100%		

Figure 6: Usage of discussion forums according to level of computer skills for DAE642 and BIS204

Since 100 % of the student population of DAE642 liked the online discussions and found them useful no significant difference can be shown according to computer skills. Students of BIS204 with excellent computer skills liked the online discussions least, followed by students with only fair computer skills. Both found them useful though.

Students' usage

Due to the methods of data collection, no analysis could be done of usage according to level of computer skills within the individual courses. Courses were compared as a whole (see fig. 1).

Variable 6: Access to ICTs

Booking the eLearning SMART classroom once a week provided access to the necessary ICTs for both courses. Outside class students of DAE642 could use the graduate computer lab and, if available, ICTs on their workplace. BIS204 students had to rely on access to limited computers in the library and the business computer lab, which is used by the whole Faculty of Business.

Students' perception

In the online questionnaire DAE642 and BIS204 students rated their perception of the online discussions according to their ease in accessing ICTs as following:

DAE642: Access proved to be…	**%**	**Out of those … % liked online discussions**	**Out of those … % found online discussions useful**
very difficult			
difficult			
average	62.5 %	100 %	100 %
easy	37.5 %	100 %	100 %
Total	100%		

BIS204: Access proved to be…	%	Out of those … % liked online discussions	Out of those … % found online discussions useful
very difficult	9 %	100 %	50 %
difficult	26 %	50 %	100 %
average	56 %	92 %	92 %
easy	9 %	100 %	100 %
Total	100%		

Figure 7: Perception of discussion forums according to access to ICTs for DAE642 and BIS204

Since 100 % of the student population of DAE642 liked the online discussions and found them useful no significant difference according to ease of access can be shown. 50 % of the BIS204 students who found access difficult did not like the online discussions, but found them useful, while 100 % of those who had easy access also liked the online discussions and found them useful. In the open question about "what students did not like about the online course" 12 out of 19 comments (63 %) of BIS204 pointed to either network problems or limited access to computers, while DAE642 students seem not to have any problems with access and only 33 % of the comments pointed to problems with the network.

Students' usage

Due to the methods of data collection, no analyses could be done of usage according to access to ICTs within the individual courses. Courses were compared as a whole (see fig. 1).

Variable 7: Presence and quality of support

Since the level of computer skills was low for DAE642 students, extensive support was offered. Support consisted of an orientation class on the use of WebCT, continuous support through members of the Educational Technology Unit during classes, support through the lecturer and peer-to-peer support between students.

Both lecturers of DAE642 and EADU8030 moderated the discussion forums. The intensity of moderation was rather low and consisted mainly of keeping participants on track of the tasks or giving cues to keep the discussion going. The intensity of moderation varied in the three forums. The major part of the moderators' messages was posted in the task forum, where students had to actually produce results.

In BIS204 the majority of feedback by the tutor was given to clarify individual tasks.

DAE642	Lecturer DAE642	Lecturer EADU8030	Total	%
Main Forum	2	3	5	20 %
Globalisation Forum	5	2	7	28 %
Task Forum	10	3	13	52 %
	17	8	25	100 %
Amount of feedback per student			3	

BIS204	Amount of Feedback	%
Individual Tasks	18	70
Group Tasks	4	15
Student Questions	4	15
Total	26	100
Amount of feedback per student	1	

Figure 8: Amount of tutoring according to forums in DAE642 and BIS204

Students' perception
In the online questionnaire students gave the following feedback on availability and usefulness of the online tutoring:

DAE642: Were tutors…	**..available?**	**…useful?**
yes	75 %	75 %
no	25 %	
not available		25 %
Total	100 %	100 %

BIS204: Were tutors…	**..available?**	**…useful?**
yes	27 %	39 %
no	73 %	9 %
not available		52 %
Total	100 %	100 %

Figure 9: Students' perception of usefulness and availability of tutoring in DAE642 and BIS204

Since 100 % of the student population of DAE642 liked the online discussions and found them useful no significant difference can be shown according to the support given. Analysing BIS204 students it shows that 100 % of those who didn't like the online discussion forums also said that tutoring was not available.

Students' usage
Due to the methods of data collection, no analysis could be done of usage according to support given within the individual courses. Courses were compared as a whole (see fig. 1).

Variable 8: Safe environment

DAE642 consisted of nine students who meet regularly and know each other very well. The atmosphere in class was relaxed and intimate. For most of the DAE642 students - contrary to the EADU8030 students - this was the first experience with online discussions.

Students' perception
Analysing the focus group discussion of DAE642 the following statements prevail:

- "the EADU8030 students commented on our points but did not bring new items of their own",
- "our level of understanding differed",
- "they would comment on our positions, but wouldn't describe their situation",
- "maybe we concentrated too much on the African experience and we should have stimulated more discussion on US perspectives and these issues in the US context by asking them for examples from their side"
- "it is not that we have a better understanding generally than the EADU8030 students, but that on these particular issues, such as globalisation, we are more directly affected and therefore have direct experience which they lack".

This suggests that students didn't feel they belong to one group but to two different groups, the "African group" and the "American group" and that students were not distinguished as individuals but seen as a whole group.

BIS204 students are not composed of a homogeneous group, but belong to two different Faculties and tend to sit in two groups – Business vs. Humanities. The atmosphere was relaxed, yet students seemed to prefer sending solutions of individual and group tasks privately to the lecturer via e-mail instead of posting them openly to the forums as required (67 % of all postings were sent by e-mail). See figure 5 on usage of discussion forums and e-mail messages. This suggests that no safe environment was developed and the fear of colleagues copying from each other impeded the development of an atmosphere of trust and information sharing.

Students' usage
Due to the methods of data collection, no analysis could be done of usage according to the presence of a safe environment within the individual courses. Courses were compared as a whole (see fig. 1).

DISCUSSION

Overall DAE642 students' perception and usage was particularly high. BIS204 students' perception was slightly lower and usage significantly lower than in DAE642. The study conducted explains these results as follows:

DAE642 had a high level of student maturity and a high female students' population. Online discussions were carefully planned and integrated within the course structure and assessment strategy. Discussions were mainly used out of students' personal interest. Students showed a low level of computer skills, but the tutor and other staff of UB provided enough support. Sufficient access to ICTs was provided during class as well as outside class. Finally, a safe environment was achieved amongst DAE642 students but not amongst them and their American colleagues as a single group.

BIS204 had a lower level of student maturity, consisting of a high female students' population. Discussions were part of continuous assessment and accounted for a comparably low percentage of the overall grade. Furthermore the discussions were merely used for completing and submitting assignments. Sufficient access to ICTs was provided during class but proved to be insufficient outside class. The tutor gave not enough support and no safe environment was achieved.

The first research question "Which variables have been found in previous studies that influence the utilization and perception of online discussions forums?" has been responded to through the literature review, namely target group (gender and maturity level), integration of online discussions in course structure, assessment, support, access to technology, level of computer skills and a safe environment.

The second research question "Are there any differences in the influencing variables in developed and developing countries?" allows the following conclusions: for most variables no difference can be found in the influence of use and perception of online discussions in developed and developing countries. Priorities seem to be different between developed and developing environment, e.g. the provision of access to ICTs seem to have a more important role in developing countries than in developed countries. Furthermore technologies are not yet part of the natural environment of students and therefore computer and information skills cannot be assumed. Also, females tend to participate more in developing countries than developed countries. Therefore, researchers recommend that a lack of ICT skills can be balanced by increased support through the lecturer, while lack of ICT access requires involvement of more stakeholders, like the IT Department or UB Management.

CONCLUSION

This study tried to identify variables that influence the perception and the use of online discussions in developing countries comparing two blended learning courses at the University of Botswana. The following variables were found to influence the students' use and perception in a positive way: A high level of student maturity and a high female students' population; Discussions are an integral part of the course; They are being assessed but are also used out of personal interest and educational development; Sufficient access to ICTs and enough support is provided; A safe environment is achieved.

In comparison to developed countries developing countries need to focus on providing access to technologies and imparting ICT skills. In comparison to developed countries developing countries have to concentrate on providing access to technologies and imparting ICT skills.

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REFERENCES

Australian Flexible Learning Framework (n.d.). What are the conditions for and characteristics of effective online learning communities? Retrieved online June 2 2004: http://www.flexiblelearning.net.au/guides/community.pdf

Educational Technology Unit (n.d.): Definition of eLearning. Retrieved online June 6 2004: http://www.ub.bw/departments/centres/educite/content_main/activities_content/elearning.htm

Edelstein S., Edwards, J. (2002). If You Build It, They Will come: Building Learning Communities Through Threaded Discussions. *Online Journal for Distance Learning Administration,* Volume V, Number I. Retrieved online June 2 2004: http://www.westga.edu/~distance/ojdla/spring51/edelstein51.html

Herring, S. (2000): Gender Differences in CMC: Findings and Implications. *Computer Professionsal for Social Responsibiltiy Newsletter*, 18(1). Retrieved online June 7 2004: http://www.cpsr.org/publications/newsletters/issues/2000/Winter2000/herring.html

Im, Y. and Lee, O. (2003): Pedagogical Implications of Online Discussion for Preservice Teacher Training. *Journal on Technology in Education*, Winter 2003-2004: Volume 36 Number 2. Retrieved online June 6 2003 from Academic Search Premier on EBSCOhost.

Masters, K., Oberprieler, G. (2003). Encouraging equitable online participation through curriculum articulation. *Computers and Education* 42 (2004). Retrieved online June 4 2004 from Academic Source Premier on EBSCOhost.

Oblinger, D. (2003): Understanding new students. *Educause Review.* July/August, 337-47. Retrieved online June 6 2004 from http://www.e-learningcentre.co.uk/eclipse/ Resources/rethinking.htm

Oliver, M. (2003). Asynchronous Discussion in Support of Medical Education. *JALN* Volume 7, Issue 1. Retrieved online June 2 2004 from http://www.aln.org/publications/jaln/v7n1/v7n1_oliver.asp

Oren, A., Mioduser, D., Nachmias, R. (2002). The Development of Social Climate in Virtual Learning Discussion Groups. *International Review of Research in Open and Distance Learning*. Retrieved online May 10 2004 from http://www.irrodl.org/content/v3.1/mioduser.html

Rossman, M.H. (1999). Successful Online Teaching using an Asynchronous Learner Discussion Forum. *JALN* Volume 3, Issue 2 – November 1999.

Warren, K. and Rada, R. (1998): Sustaining computer-mediated communication in university courses. Journal of Computer Assisted Learning. Vol. 14, pp 71-80, 1998.

Youngman, F. (2003): DAE642 Adult Education and Development 2003-4 (Course Outline).