KEY FACTORS FOR DETERMINING STUDENT SATISFACTION IN DISTANCE LEARNING COURSES: A STUDY OF ALLAMA IQBAL OPEN UNIVERSITY (AIOU) ISLAMABAD, PAKISTAN

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ABSTRACT

In this paper, the primary objective of the research team was to find out the relationship between student satisfaction and the following variables of the distance learning environment: instructors' performance, course evaluation and student-instructor interaction. The sample consisted of 245 students of Allama Iqbal Open University of Pakistan. The purpose of this study was to address the most recent problem of AIOU students relevant to their distance learning. The problem was that most of the people in Pakistan perceived distance learning as poorer quality. Therefore, the researchers conducted this study to find out whether it's only people perception or there is any thing in reality about the poorer outcome of the distance learning students as compare to traditional students. By using correlation, regression and descriptive analysis, it was found that just like the traditional education, in distance learning education at AIOU, enough interaction take place between students and their instructors, courses are up to date and well designed, instructors are devoted, motivated and equipped with the required skill and knowledge. Moreover, the faculty at AIOU is delivering distance learning courses that meet the students' needs in regard to students-instructor interaction, instructor performance and course evaluation.

Keywords: Distance learning, Course evaluation, Instructor performance, AIOU, Islamabad.

INTRODUCTION

The World Wide Web (WWW) has become a valuable educational means and offer new educational experience for students which were not earlier possible. In recent years the growth of online educational programs has been fueled by the advancement of the internet and modern information technology that changed the face of education (Sher, 2008). Due to advancement of the latest technology, online education has emerged as an alternative or at least a considerable supplement to traditional mode of teaching and learning (Waits & Lewis, 2004). Especially, in higher education online education is increasingly becoming common and emerging as an opportunity for delivering entire education online (Johnson, 2004). In academia through online classes, universities now have the ability to provide distance learning opportunities for students--- Full-time or part-time, traditional or non-traditional and international, who perhaps have had limited access to advanced educational opportunities (Bartley et al., 2004).

The rising demand and growing consumer experience with flexible education programs to support career development and life long learning increase people expectations for quality instructions, effective educational outcomes, and finally satisfaction for learning (Debourgh, 1999).

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Allen et al. (2002) and Wang (2003) argued that in any educational institution, satisfaction of a student can be determine from his level of pleasure as well as the effectiveness of the education that student experience. Since, students with higher levels of satisfaction towards various aspects of e-learning courses are also reported considerably higher levels of learning, than students with low level of satisfaction (Fredericksen, 2000). In this regard, management specifically instructors of e-learning courses can increase their students' satisfaction by considering the primary factors of student satisfaction (Ho et al., 2002).

No doubt, modern information technology tools and methods create many opportunities of communication and cooperation for students and instructors, separated with each other due to time and space (Belanger & Jordan, 2000). However, besides perception of the technological innovation, quality and timely interaction between student and teacher, interaction among students, , flexibility of online courses, technical support availability, and consistent course design across courses are also important to assure the development of distance learning education (Swan et al., 2000; Lao & Gonzales, 2005: Young & Norgard, 2006). Conrad (2006) argued that distance learning occurs when students and instructor do not meet personally in the same physical space. Similarly Roffe (2002) described that distance learning refers to the way people communicate and learn by electronic means. He further added that in the information society distance learning has come forward as a main resource of competitive advantage.

The term distance learning also used interchangeably with terms e-learning, online learning, online collaborative learning, virtual learning, web based learning and technology-mediated learning. In the past, few relevant studies have been conducted on the use of distance learning environment in Pakistan. Though, current research paper deals with several factors as influencing students' satisfaction with distance learning in Pakistan. In this perspective, the primary objective of this research paper was to find out the relationship between student satisfaction and the following variables of the distance learning environment: instructors' performance, course evaluation and student-instructor interaction.

This study was carried out by keeping in view the increasing demand of distance education not only in Pakistan but all over the world. Right now there is only one degree awarding universities in Pakistan which is providing distance education i.e. Allama Iqbal Open University (AIOU). In this paper we focused on AIOU. The Allama Iqbal Open University was established in May, 1974 at Islamabad, Pakistan and was the first Open University in Asia, and the biggest university in the country with course enrolment of 1,806,214 by the year 2004-2005. The AIOU established over 1400 study centers, 9 regional campuses, 23 regional centers, 90 part-time regional coordinating offices throughout Pakistan. Basically, AIOU is a distance education institution that offers education of multi disciplinary from basic to doctoral level programs. In AIOU more than 70 percent students are employed and the rural-urban distribution of the students are 58% and 42% respectively. Moreover, female enrolments are more than 50 percent. Internet, audio and video lectures, along with correspondence of the instructors are used as a medium of instruction as well as a source of information. In addition, these lectures are broadcasts on television and radio, and also CDs of these lectures are available for the students.

BACKGROUND OF THE PROBLEM

Actually this study was carried out to address the most recent problem of AIOU students, relevant to their distance learning. The fact is that most of the people in Pakistan perceived distance learning as poorer quality.

Entrepreneurs, private employers and many corporate companies' executives have the same mentioned perception. Moreover, they are not ready to accept this argument that distance learning students do just or even better than face to face classroom students. Instead of the fact that AIOU degree is accepted and recognized by the government, getting jobs, particularly good jobs are very difficult for these students. Therefore, the researchers conducted this study to find out whether it's only people perception or there is any thing in reality about the poorer outcome of the distance learning students as compare to traditional students. That's why we asked different questions to AIOU students about their satisfaction regarding instructor performance, student-instructor interaction and course evaluation.

LITERATURE REVIEW

Student Satisfaction

The dynamic expansion of online teaching and learning has been boosted significantly by the rapid development of the internet and various web resources, having a tremendous impact on the quality of teaching and learning (Kramer, 2000). Zaidel (2007) added that due to use of information technology for education purpose, innovative and advance ways of communication came in to being, which change the preference of students from traditional learning to distance learning. Further more, the availability of distance education, the course offerings, and the increasing number of students enrolled, all speak to the importance of this method of instruction (Zapalska & Brozik, 2006). Brownson and Harriman, (2000) argued that students in distance learning do just or even better than face to face classroom students. Besides, Johnson et al. (2000) made a comparative research study and did not found any significant difference in the effectiveness of online learning versus face to face course learning for students

Furthermore, distance education provides independent, student center and tutor facilitated engagement that facilitate interactions with instructors and students which may not always be possible within the traditional classroom setting (Michailidou & Economides, 2003). Astin, (1993) defined student satisfaction in term of student's perception towards his/ her college/ university experience, and perceived significance of the education that (s)he received from an institution. Levy (2003) argued in his research study, conducted more than 200 students attending distance learning courses to find out the relationship of students satisfaction with distance learning effectiveness. He found that student's satisfaction with distance learning courses is a key aspect to measure the effectiveness of distance learning.

Instructor Performance and Student Satisfaction

In online learning environment, instructor again requiring new set of skills and expertise for success since just like the students, latest technologies brings as much change to instructors (Jones, 2003). Now, the roles of the instructors change from being the main resource of students' knowledge to being the organizer of the knowledge resources for students (Romiszowski, 2004). Moreover, in an effective online learning environment instructor plays a vital role, and it is not because of technology but its practical accomplishment that determines the effects on learning (Collis, 1995).

An instructor has a definite role to make online environment successful. For this purpose, instructors must ensure required level of interactions and discussions with their students (Hong et al., 2003). However, interaction is different in this environment (Walker & Hackman, 1991) with more emphasis on the teacher's role as a mediator between the student and materials (Beaudoin, 1990) or between the student and the technology (Hillman et al., 1994). Therefore, teachers must understand the increased diversity of learners, and then accordingly determine test

formats, assessment practices, and assessment strategies (Banerjee & Brinckerhoff, 2002), which might persuade and motivate students to accept e-learning environment (Selim, 2005).

In e-learning, there are some certain factors and conditions which are important for the professional development of the instructors, and to enhance the teaching quality of instructors, it is necessary for the instructors to consider these factors (Louden, 2000). Jensen (1993) conducted a research in which he collected data together from students and instructors, and concluded that instructions in distance learning entail a different set of skills, and involve different responsibilities.

Student-Instructor Interaction and Student Satisfaction
In distance education, interaction appears frequently as a defining characteristic of quality learning experiences. Also in the education literature, researchers' belief in the importance of students' interactions with their instructors is so widespread that it is considered to be an indispensable thing for learning to occur (Anderson & Garrison, 1995; Picciano, 2002). In addition, it is recognized as a driving force for persuading student's motivation and the achievement of learning outcomes (Du, Havard, & Li, 2005; Sargeant, Curran, Allen, Jarvis-Selinger, & Ho, 2006; Tu, 2005). Moore (1989) reported three types of interactions: student-instructor; student-content; and student – student. Young and Norgard (2006) also confirmed the importance of these three types of interactions for student satisfaction with distance education; timely and quality interaction among students and between student and their instructor, and finally between students and their course content

According to many researchers, the overall effectiveness and success of online education depend upon the interaction which is an essential element to student learning (Fresen, 2007; Moore, 1993; Northrup, 2001). Therefore, Volery et al. (2000) suggested that in order to boost student's interactions, instructor may give a participation mark. Furthermore, instructors should be able to understand the diverse nature of the student; involved them in online discussions and encouraged student to student interactions (Durling, Cross, & Johnson, 1996).

In an online course, the immediate accessibility of the information, assistance, and feedback by the instructor determined the students' satisfaction. Whenever, due to technical problems this accessibility is interrupted or denied, students get frustrated (Wilson & Whitelock, 1998). In fact, success in online learning environment depends on the level of interaction between students and instructors that is required to stimulate good results (Kershaw, 1996). Due to online learning environment the instructor gets more time to directly interact and spend on each individual student. As, mostly students follow a pre-defined and pre-developed e-learning course (Morgan, 2000). Therefore, instructors should remain in contact with students through email and online forum discussions (Poon et al., 2004)

Course Evaluation and Student Satisfaction
The development of an online environment allows students to participate in the educational process and by playing and exploring with the course material (Michailidou & Economides, 2003). Particularly those subjects are best suited to the online format that involves discussion, brainstorming, and reflection (Wells, 1992).

As students interactions through course discussions appear to be one of the most important features of distance courses (Swan, Shea, Fredericksen, Pickett, Pelz. & Maher, 2000). Along this, course design must have rich communication potential, as the level of communication heavily impact upon students' learning, satisfaction, and retention in online courses (Irani, 1998). Northrup (2002) defined interaction as interaction with course content, discussion and group effort, interpersonal skills, and need for support. Furthermore, Northrup added that students demonstrated a

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preference for innovative course delivery such as collaboration through ongoing interaction with peers and instructors, case studies, readings followed by discussions.

According to Inman et al. (1999), students expect three things from an instructor in the distance learning environment, which are helpful materials for interacting with the distance learning medium, some on-campus session and finally his availability at the time when they needed.

Besides, Swan (2001) also reported three factors i.e. interaction with instructors and active discussion among course participants and clarity of course design which significantly influenced students' satisfaction and perceived learning. Similarly, Shea, Pickett, and Pelz (2003) argued that following issues are highly correlated with students satisfaction level in e-learning courses; instructional design and organization of the e-learning courses, instructors direct interaction with students and instructors discourse facilitation. According to Levin et al. (1990), students perceive that discussions in distance learning are more equitable and democratic than face-to-face classroom discussions. While Swan et al. (2000) argued that students preferred consistent course structure so that navigation does not change from one course to another. Yang and Cornelius (2004) found that students became frustrated when their courses were poorly designed, and when instructors did not participate in discussions or responded to questions within a very limited time (Zeng & Perris, 2004). There may be a possibility that this frustration may translate into a poor learning outcome for students.

Therefore, in online learning environment, getting student feedback about their needs and preferences is crucial for the successful design and implementation of this environment (Sahin, 2007).

THEORETICAL FRAME WORK
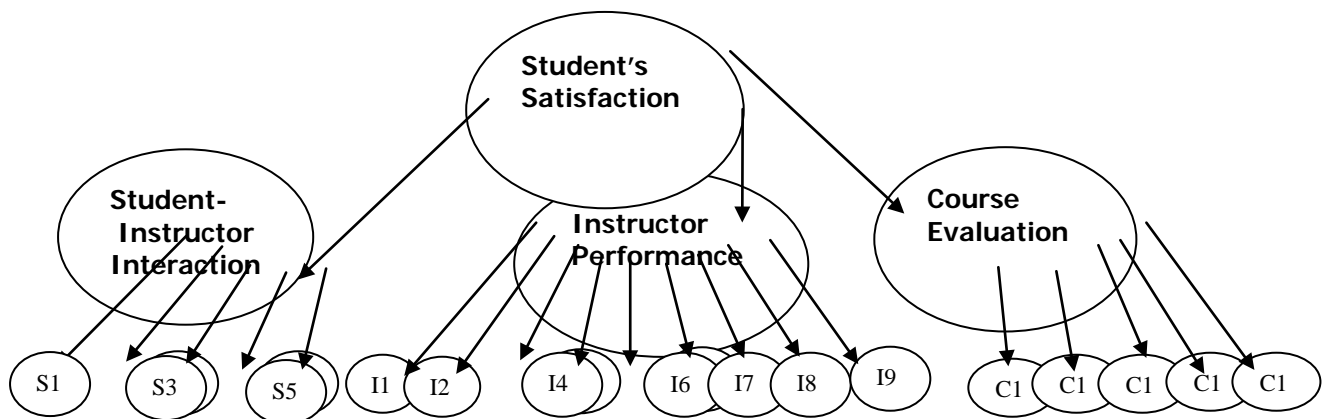
Research Hypothesis
The following hypotheses have been developed from the literature review:

H1:   Instructor performance will be positively related to the student's satisfaction.

H2:   Student-instructor interaction will be positively related to the student's satisfaction.

H3:   Course evaluation will be positively related to the student's satisfaction.

METHODOLOGY

Subject
In order to investigate the relationship between key factors for determining student satisfaction in distance learning courses, a structured questionnaire was circulated

among students of AIOU in Pakistan, using convenience sampling method. As AIOU was the only university which are providing distance learning education in Pakistan, that's why researcher chose it. The sample size comprised of two hundred and forty five students of AIOU

Procedure

Research team made a visit of AIOU main campus in Islamabad and collected data from the students. For this purpose, firstly researchers briefed them about the purpose of this study and the variables along with their item, which were in the questionnaires.

Measure/Instrument

To measure the student satisfaction, six items were adapted from the study of Arbaugh (2000). These items focus on students' satisfaction, their perceptions of its quality and their intention of taking future courses via distance learning. To measure the student-instructor interaction, five items were adopted from the study of Johnson, Aragon, Shaik, and Palma-Rivas (2000). Likewise, a College of Education, Texas Tech University teaching evaluation scale items of fall 2001 were used to measure instructor performance and course evaluation (Tallent-Runnels at al., 2005). The questionnaire has two parts and comprised of 26 items. . First section included demographic information and the next section contained the variables items. The demographic profile included four items:

> ➢ Gender,
> ➢ age,
> ➢ student type and
> ➢ educational level.

Each of the items was measured using five-point Likert-type scales, ranging from 1 as strongly disagree to 5 as strongly agree. Table: 1 reveals the demographic profile of the respondents.

Table: 1
Respondents' Demographic Profile

	Frequency	%
Gender		
Male	131	46.5
Female	114	53.5
Age		
Between 20 to 25	77	68.6
Above 25	168	31.4
Student's type		
Part time	156	63.7
Full time	89	36.3
Academic program Intermediate		
Intermediate	18	7.3
Bachelors	48	19.6
Master	167	68.2
Others	12	4.9

ANALYSIS AND RESULTS

Reliability Analysis

Prior to further data collection, in the pilot study, research team used reliability coefficient Cronbach's alpha in order to measure the reliability of the constructs. The sample for the pilot study comprised of twenty three respondents. Table: 2 show the items and Cronbach's alpha of each variable respectively, which are acceptable for research.

Table: 2 Reliability Analysis

	No. of	Cronbach Alpha
Students satisfaction	6	0.680
Student-instructor	5	0.737
Instructor performance	9	0.882
Course evaluation	6	0.680

Test of Hypothesis

Table: 3 Student Satisfaction

Student-instructor interaction	Pearson	0.413**
	Sig. (2-tailed)	.000
	N	245
Instructor performance	Pearson	0.616**
	Sig. (2-tailed)	.000
	N	245
Course evaluation	Pearson	0.637**
	Sig. (2-tailed)	.000
	N	245

Note: **. Correlation is significant at the 0.01 level (2-tailed).

To investigate the relationship between the dependent variable, student satisfaction, and the following three predictor variables were tested: student-instructor interaction, instructor performance and course evaluation. Correlation and regression analysis was used. Table: 3 explain the results which clearly show the significant positive relationship between the dependents and the independent variables.

Table: 4 Regression Analysis

	Beta	t-value	Sig.
Constant		11.774	.000
Student-instructor interaction	-.583	-6.590	.000
Instructor performance	.721	7.660	.000
Course evaluation	.510	7.068	.000

n=245 ; R Square=.528;   Adjusted R Square=0.522;
F=89.897; Significance F=0.00;
Dependent variable=Student satisfaction

Table: 5
Key Factors for Determining Student Satisfaction

Student-Instructor Interaction:	SD%	D%	N%	A%	SA%
The instructors encouraged me to become actively involved in the courses discussions	17.6	11.4	2.4	37.6	31.0
The instructors provided me feedback on my work through comments	7.3	12.7	7.8	20.8	51.4
I was able to interact with the instructors during the courses discussions	5.3	9.8	9.8	33.5	41.6
The instructors treated me individually	5.3	18.4	6.1	23.3	26.9
The instructors informed me about my progress periodically	14.7	13.5	9.2	35.1	17.6
Instructor Performance:	SD%	D%	N%	A%	SA%
Overall this instructors were effective	2.4	12.7	2.7	33.5	38.8
The instructors were available for consultation during office hours or by appointment.	4.9	18.8	5.5	29.4	31.4
The instructors stimulated students learning.	0	12.2	0.2	21.6	55.9
The instructors treated all students fairly	9.0	15.1	1.6	22.4	31.8
The instructor treated all students with respect	4.9	6.5	9.8	43.7	35.1
The instructor welcomed and encouraged questions and comments.	4.9	14.3	2.9	34.7	43.3
The instructor presented the information clearly.	2.4	23.7	7.8	39.2	26.9
The instructor emphasized the major points and concepts.	11.8	7.3	9.8	29.4	41.6
The instructor demonstrated knowledge of the subject.	2.4	23.7	7.8	39.2	26.9
Course Evaluation:	SD%	D%	N%	A%	SA%
Overall, I have valuable learning experiences from my courses.	4.9	2.4	4.5	33.9	54.3
The assignments were relevant and useful.	9.0	2.4	7.3	53.5	27.8
Courses materials were relevant and useful	2.4	9.8	4.9	38.4	44.5
Expectations were clearly stated either verbally or in the syllabus.	12.7	7.3	4.5	47.8	27.8
The testing and evaluation procedures were fair.	16.7	9.8	4.9	51.0	17.6
The workload was appropriate for the hours of credit.	7.8	14.7	8.4	44.5	14.7

Where SD means strongly disagree, D means disagree, N means neutral, A means agree and SA means strongly agree

The correlation matrix (Table: 5) indicates that student-instructor interaction is positively and significantly correlated with students satisfaction (0.413(**), p<0.05, H1 supported). The results reveal that instructor performance positively and significantly influence the students' satisfaction (0.616(**), p<0.05, H2 supported). Likewise, there is also a significant and positive relationship between the course evaluation and students satisfaction (0.637(**), p<0.05, H3 supported).

Student-Instructor Interaction

Student-Instructor Interaction is the first strongest variable in predicting students' satisfaction. Students were asked about their courses discussions, feedback and interactions with instructors, instructor ability to treat them individually and lastly informing about their progress periodically.

Approximately 68% of the students queried agreed that instructors encouraged them to become actively involved in the courses discussions. The following student comments support the need for instructor's encouragement to actively involved students in the courses discussions. These were substantiated by the findings of Durling et al. (1996). Furthermore, the majority of the students, 71% and 75% reported they liked discussion and feedback from their instructors. Although almost 51% of the respondents agreed that instructors treated them individually and also informed about my progress periodically, on average 26% disagreed with these statements.

As, distance education is a learner-centered instruction, this finding confirms that instructor support, such as useful feedback, easy communication and timely help is still an important factor for student satisfaction in distance learning. According to Young and Norgard (2006), timely interaction with students regarding their performance enhances their productivity in distance learning courses.

Furthermore, in terms of achieving overall student's satisfaction, distance learning instructors should be able to understand the diversity of the students and treat each student accordingly (Banerjee & Brinckerhoff, 2002).

Instructor Performance

The second significant predictor of student satisfaction is instructor performance. In this section students were asked, "Overall these instructors were effective". Approximately 72% of the students queried agreed that during their degree program, overall the instructor were effective. The following student comments support the need for experienced professional instructors for the student's satisfaction (Hong et al., 2003). Moreover, students were asked about teachers availability during office hours, their motivation to learn, giving them respect, encouraging question and comments, presenting the information clearly, highlighting the major points and concepts, and demonstration of knowledge.

On average about 68% of the respondents were agreed about all these points and considered these things important in order to enhance their satisfaction level with distance learning courses. Therefore, instructors of distance education should be available, provide prompt responses, and encourage their students through online learning activities. These findings also suggest that interaction with the instructor in distance learning environment affects student success and learning (Areti, 2006; Chen & Guo, 2005).

Course Evaluation

Students were queried about their feelings regarding learning experiences, assignments, and courses materials, achievement of courses targets, workload, and evaluation criteria in their distance courses.

According to table V, majority of the students agreed that they learned a lot from their courses, assignments and courses materials were relevant and useful, courses targets was achieved during the semester, and that evaluation criteria and workloads were satisfactory. This finding indicates that students are expected to be more satisfied in distance learning environments if the course materials are relevant and useful, and involves real life examples, facts, and cases (Northrup, 2002).

CONCLUDING REMARKS

The results of this study indicated that majority of the students at this campus showed high level of satisfaction regarding students-instructor interaction, instructor performance and course evaluation. This reveals that just like the traditional education, in distance learning education at AIOU, enough interaction take place between students and their instructors, courses are up to date and well designed, instructors are devoted, motivated and equipped with the required skill and knowledge. Further more, the availability of distance education in pakistan, increasing number of degree program offered and the increasing number of students enrolled, all speak to the students satisfaction and the effectiveness of the distance learning education. This implies that faculty at AIOU is delivering distance learning courses that meet the students' needs in regard to students-instructor interaction, instructor performance and course evaluation. After the findings of this research study, it will not be logical to presume that distance learning students do not perform well as compare to traditional students. Moreover, the research team hopes that these findings may change the pessimistic perceptions of those people in Pakistan who perceived distance learning as poorer quality.

Besides, the research team suggests that AIOU increase the number of its sub-campuses to the distant districts of the country where literacy rate is still low. Because people belongs to these remote areas also have the desire to get education but due to financial, geographic and cultural reasons they cannot get it. Consequently, AIOU may contribute its vital role to improve literacy rate in Pakistan.

LIMITATIONS AND FUTURE RESEARCH DIRECTION

This research study has few limitations. The selected sample size may not be completely representative of the majority of students of distance learning at AIOU. Additionally, the main campus of AIOU i.e. Islamabad was selected. Thus, there may be a possibility that these results may not reflect the whole AIOU campuses. For future point of view one can consider the students of other campuses and sub campuses of AIOU, especially those established in small and undeveloped cities in order to find out their satisfaction level towards distance learning. Secondly, to explore the reasons why students select distance learning for higher education in Pakistan is also an important point for future research viewpoint.

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REFERENCES

Allen, M., Bourhis, J., Burrell, N., & Mabry, E. (2002). Comparing student satisfaction with distance education to traditional classrooms in higher education: a meta-analysis. *American Journal of Distance Education,* 16(2), 83-97

Anderson, T. D., & Garrison, D. R. (1995). Transactional issues in distance education: The impact of design in audio teleconferencing. *The American Journal of Distance Education*, 9, 27–45.

Andria Y., & Chari N. (2006). "Assessing the quality of online courses from the students' perspective". *Internet and Higher Education*, 9, 107–115

Arbaugh, J. B. (2000a). Virtual classroom characteristics and student satisfaction with internet-based MBA courses. *Journal of Management Education,* 24, 32-54

Astin, A. W. (1993). What matters in college? Four critical years revisited. *San Francisco*, CA: Jossey-Bass.

Banerjee, M., & Brinckerhoff, L. C. (2002). Assessing Student Performance in Distance Education Courses: Implications for Testing Accommodations for Students with Learning Disabilities. *Assessment for Effective Intervention*, 27(3), 25-35

Bartley, S. J., & Golek, J. H. (2004). Evaluating the Cost Effectiveness of Online and Face-to-Face Instruction. *Educational Technology & Society*, 7 (4), 167-175.

Beaudoin, M. (1990). The instructor's changing role in distance education. *The American Journal of Distance Education*, 4(2), 26–34.

Belanger, F., & Jordan, D. H. (2000). *Evaluation and implementation of distance learning: Technologies, tools and techniques. Hershey, PA: Idea Publishing Group*.

Collis, B. (1995), Anticipating the impact of multimedia in education: lessons from the literature, *Computers in Adult Education and Training*, 2(2), 136-49.

Conrad, D. (2006). E-Learning and Social Change: An Apparent Contradiction. InM. Beaudoin (Ed.), Perspectives on higher education in the digital age, *New York: Nova Science Publishers.* 21-33

DeBourgh, G. A. (1999). Technology is the tool, teaching is the task: Student satisfaction in distance learning. *Proceedings of Society for Information Technology and Teacher Education International Conference*, 131-137

Du, J., Havard, B., & Li, H. (2005). Dynamic online discussion: Task-oriented interaction for deep learning. *Educational Media International*, 42(3), 207-218.

Durling, D., Cross, N., & Johnson, J. (1996). CAI with style. *Paper presented at the 18th Annual Design Conference-Computer-aided Design Education* (University of Bristol, England, June 26-27, 1997).

Fredericksen, E., Pickett, A., Shea, P., Pelz, W., & Swan, K. (2000). Student satisfaction and perceived learning with on-line courses: principles and examples from the SUNY learning network. *Journal of Asynchronous Learning Networks*, 4(2), 7–41.

Fresen, J. (2007). A Taxonomy of factors to promote quality web-supported learning. *International Journal on E-Learning*, 6(3), 351-362.

Ho, C., Leong, P., & Saromines-Ganne, B. (2002). An empirical investigation of student satisfaction with Web-based courses. In M. Driscoll & T. Reeves (Eds.), Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education, 1792-1795

Hong, K.S., Lai, K.W., & Holton, D. (2003). Students' satisfaction and perceived learning with a Web based course. *Journal of Educational Technology & Society* 6(1).

Inman, E., Kerwin, M., & Mayes, L. (1999). Instructor and student attitudes toward distance learning. *Community College Journal of Research and Practice*, 23(6), 581-591

Irani, T. (1998). Communication potential, information richness and attitude: A study of computer mediated communication in the ALN classroom. *ALN Magazine*, 2(1)

Jensen, R. E. (1993). The technology of the future is already here. *Academe*, 79, 8–13.

Johnson, S. D., Aragon, S. R., Shaik, N., & Palma-Rivas, N. (2000). Comparative analysis of learner satisfaction and learning outcomes in online and face-to-face learning environments. *Journal of Interactive Learning Research*, 11(1), 29-49.

Jones, A.J. (2003). ICT and Future Teachers: Are we preparing for e-Learning? Paper presented at the IFIP Working Groups 3.1 and 3.3 Conference: ICT and the Teacher of the Future, January 27-31, 2003, Melbourne, Australia. *Journal of Distance Education*, 4, 21–29.

Kershaw, A. (1996). People, planning, and process: The acceptance of technological innovation in post-secondary organizations. *Educational Technology*, 44-48.

King, K. P. (2002). Educational technology professional development as transformative learning opportunities. *Computers & Education*, (39), 283-297.

Lao, T., & Gonzales, C. (2005). Understanding online learning through a qualitative description of professors and students' experiences. *Journal of Technology and Teacher Education,* 133, 459–474.

Levin, J. A., Kim, H., & Riel, M. M. (1990). Analyzing instructional interactions on electronic message networks', in On-line Education: Perspectives on a New Environment, ed. L. *Harasim, Praeger, New York*, 16-38.

Levy, Y. (2003). A study of learners perceived value and satisfaction for implied effectiveness of online learning systems. *Dissertation Abstracts International*, 65(03), 1014A.

Louden, W. (2000). Standards for standards: the development of Australian professional standards for teaching. *Australian Journal of Education*, 44(2), 118-34

Michailidou, A., & Economides, A. (2003). Elearn: Towards a collaborative educational virtual environment. *Journal of Information Technology Education*, 2, 131-152.

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

Moore, M. G. (1993). Three types of interaction. In K. Harry, M. Hohn, & D. Keegan (Ed.), *Distance education: New perspectives*, 12-24). London: Routledge.

Morgan Brian, (2000). Is distance learning worth it? Helping to determine the cost of online courses.

Northrup, P. (2001). A framework for designing interactivity into Web-based Instruction. *Educational Technology*, 41(2), 31-39.

Northrup, P. T. (2002). Online learners' preferences for interaction. *Quarterly Review of Distance Education*, 32, 219–226.

Picciano, A. G. (2002). Beyond student perceptions: Issues of interaction, presence, and performance in an online course. *Journal of Asynchronous Learning Networks,* 6 (1), 21-40

Poon, W. C., Low, L. T., & Yong, G. F. (2004). A study of Web-based learning (WBL) environment in Malaysia. *The International Journal of Educational Management,* 18(6), 374-385

Roffe, I. (2002). E-learning: engagement, enhancement and execution. *Quality Assurance in Education,* 10(1), 40-50

Romiszowski, A. (2004). How's the E-learning Baby? Factors Leading to Success or Failure of an Educational Technology Innovation. *Educational Technology*, 44 (1), 5–27.

Sahin, I. (2007). Predicting student satisfaction in distance education and learning environments. *Turkish Online Journal of Distance Education*, 8(2), 1302–6488

Sargeant, J., Curran, V., Allen, M., Jarvis-Selinger, S., & Ho, K. (2006). Facilitating interpersonal interaction and learning online: Linking theory and practice. *The Journal of Continuing Education in the Health Professions,* 26, 128-136.

Selim, H. M. (2005). Critical success factors for e-learning acceptance: Confirmatory factor models. Computers and Education. Retrieved February 9, 2007, from http://mail. phy.bg.ac.yu/~marijam/milos/science7.pdf

Shea, P. J., Pickett, A. M., & Pelz, W. E. (2003). A follow-up investigation of teaching presence in the SUNY learning network. *Journal of Asynchronous Learning Networks*, 7(2), 61–80.

Swan, K. (2001). Virtual interaction: Design factors affecting student satisfaction and perceived learning in asynchronous online courses. *Distance Education*, 22 (2), 306-316

Swan, K., Shea, P., Fredericksen, E., Pickett, A., Pelz,W., & Maher, G. (2000). Building knowledge building communities: Consistency, contact and communication in the virtual classroom. *Journal of Educational Computing Research*, 234, 359–383.

Tallent-RunnelsT, M. K., Lan, W. Y., Fryer, W., Thomas, J. A., Cooper, T. S. & Wang, K., (2005). The relationship between problems with technology and graduate students' evaluations of online teaching. *Internet and Higher Education*, 8, 167–174

Volery, T., & Lord, D. (2000). Critical success factors in online education. *The International Journal of Educational Management*, 14(5), 216-223

Vonderwell, S. (2003). An examination of asynchronous communication experiences and perspectives of students in an online course: A case study. *The Internet and Higher Education*, 6, 77–90.

Waits, T., & Lewis, L. (2004). Distance education at degree granting postsecondary institutions: 200-2001. http://nces.ed.gov/programs/quarterly/vol_5/5_3/4_4.asp Retrieved November 19, 2010

Walker, K. B., & Hackman, M. Z. (1991). Information transfer and nonverbal immediacy as primary predictors of learning and satisfaction in the televised course. *ERIC Document Reproduction Service, ED* 344 266.

Wang, Y. S. (2003). Assessment of learner satisfaction with asynchronous electronic learning systems. *Information and Management*, 41(1), 75-86.

Wilson, T., & Whitelock, D. (1998). Monitoring the on-line behavior of distance learning students. *Journal of Computer Assisted Learning*, 14, 91–99.

Yang, Y., & Cornelius, L. F. (2004). Students' perceptions towards the quality of online education: A qualitative approach. *Association for Educational Communications and Technology*, 27, 861–877.

Zeng, W. Y., & Perris, K. (2004). Researching the efficacy of online learning: A collaborative effort amongst scholars in Asian open universities. *Open Learning,* 193, 247–264.