Student Perceptions of Quality E-Learning: An Analytical Case Study of a Two-Year Public Community College in Virginia, United Sates of America

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ABSTRACT

This study applied the principles of quality e-learning- specifically relating to the nature and extent of institutional support, the teaching/learning environment, course structure, student support and evaluation and assessment- to evaluate the e-learning environment, based on e-learners' perspectives, at the second largest community college in the United States of America, namely Northern Virginia Community College (NVCC).

The study participants' perceptions indicated that the quality of e-learning at the NVCC could be improved. Recommendations for enhancing e-learning focus on issues such as upgrading from Blackboard Academic Suite 5 to 6, diversifying the Web-based e-learning delivery system, providing training for students, improving course structure, providing students with effective support systems, and using course evaluation data to periodically assess these courses' quality. Responding to these recommendations positively, comprehensively and in a timely manner would increase the quality of e-learning courses at the NVCC and other institutions of higher education. would increase

Keywords: Quality e-Learning, Institutional Support, Teaching/Learning.

1. INTRODUCTION

Community college learners with busy work schedules, females or males staying home due to family responsibilities, disabled citizens, and other individuals who live in remote areas are a few examples of the type of learners who may be interested in and benefit from e-learning opportunities. Kim-Rupnow et al. (2001) reported that "76% of Americans with disabilities are online and . . . more than 40% of the student population at the post-secondary level are returning students over the age of 25" (p. 36). Hence, colleges and universities need to rethink their institutional strategies to provide quality, accessible, usable and flexible e-learning courses and programs for today's diverse community of learners and workers.

Students choose to enroll in e-learning classes for specific reasons, for instance, the amount of flexibility provided by a quality e-learning environment. Further, research has shown that the issue of learning style for adult e-learning students is not a factor as long as the e-learning environment is well-designed (Aragon et al.,

2002). Neuhauser (2002) states that "learning styles, patterns of learning toward Web-based instruction, and student characteristics do not have an effect on Web-based learning achievement" (p. 111). Therefore, attention should focus more on other e-learning areas such as course structure, student support systems, delivery mode, technology tools and institutional policies.

Planning for effective and advanced technology equipment- particularly purchasing, updating and maintaining the hardware and software package- is critical. More importantly, colleges and universities need to plan carefully so those tools meet the expectations and needs of students, faculty and staff. When planning for technology purchases or updates, collaboration among institutions of higher education, mainly those in geographical proximity, would be wise and fruitful.

The combination of effective technology tools and instructional and learning strategies produce quality e-learning environment. An effective e-learning course and program contains learning strategies that promote significant interaction between faculty and students, and among e-learning students themselves. Conrad (2002) emphasizes that in an e-learning course, the "presence of the instructor is noticed and desired- not as a personality, but as a course resource" (p. 222). The e-learning course

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and program should provide opportunities for the instructors and students to have individual, timely and developing academic consultation through an effective communication tool, such as e-mail.

Administrators, technical support staff, students and faculty should work collaboratively to enhance the e-learning process. E-learning students need to be provided with effective "orientation" or complete guidelines on how to succeed in an e-learning environment, and a full description of available electronic courses with all the requirements (Cheurprakobkit et al., 2002). Students should be given information on available electronic resources, such as an electronic library, and told how to contact certain individuals for help. If students have specific questions on issues such as course goals and expectations, they should be encouraged to contact the course instructor before enrollment.

To continue developing and implementing quality electronic courses, the evaluation plan should be an ongoing process, and several factors need to be considered. The evaluation criteria of an e-learning course should examine the course's specific goals and objectives. Each part of the course needs to be evaluated using a formative approach before placing it online. Class content and instructional materials should be completed before the technical development stage takes place. However, instructional and technical developers need to work together throughout the designing process to produce a quality electronic course that is ready for delivery without technical glitches or content malfunction. Other specific factors such as cost, technological capability, enrollment volume, learners' demographic information, student performance and preferences relative to the learning environment, and synchronous versus asynchronous e-learning, should be carefully accounted for in evaluation and assessment procedures.

Theory

The theoretical framework illustrated below articulates a context for this research study. This framework, which has been designed and assembled by the author based upon the literature review and personal experience, is formed as a triangle with each vertex aligning with each of the three constructs: instructional design, constructivism and technology. Each construct has attributes and principles that, when integrated, lead to

the design of a technology-supported quality learning environment such as e-learning. The theoretical framework suggests an interaction between learning theory, instructional design and web-based technologies.

This theoretical framework shows that effective instructional design is necessary to ensure quality e-learning. Based on the needs of the learners and the course content and objectives, the instructional designer selects the appropriate instructional strategies and web feature(s). She then defines the development and the use of multimedia and hypermedia, the role of the instructor and learner, and the scope of interactions and communications in the e-learning process.

Instructional strategies, included in the instructional design construct of the theoretical framework, refer to the plan that is used by an e-learning instructor to accomplish a learning outcome. Supporting case-based reasoning, exploration, situated learning, collaboration and social negotiation, modeling and coaching, goal-based scenarios, multiple perspectives and technology-based anchored instruction are examples of constructivist instructional strategies that could be implemented in a quality e-learning environment. For instance, applying coaching to web-based learning could be implemented in either a synchronous or an asynchronous discussion format. A web-based community of practice is an example of such an implementation. Knowing the e-learner helps in the development of appropriate and effective instructional strategies. Instructional strategies could be customized toward the needs of the e-learner. E-learning faculty, instructional designers and web developers need to design appropriate lessons and learning activities and use effective instructional strategies that address the different learning styles of the e-learner to provide quality e-learning experiences for each individual student.

Based upon constructivism, the evaluation and assessment components of the instructional design in the theoretical framework explain that e-learning instructors need to provide guidelines or rubrics for participating in meaningful class discussions that usually occur in synchronous or asynchronous technology tools such as the Chat Room or Bulletin Board. For instance, e-learning instructors may require their students to make a certain number of postings and paragraphs to earn the appropriate grade. During and at the end of an e-learning
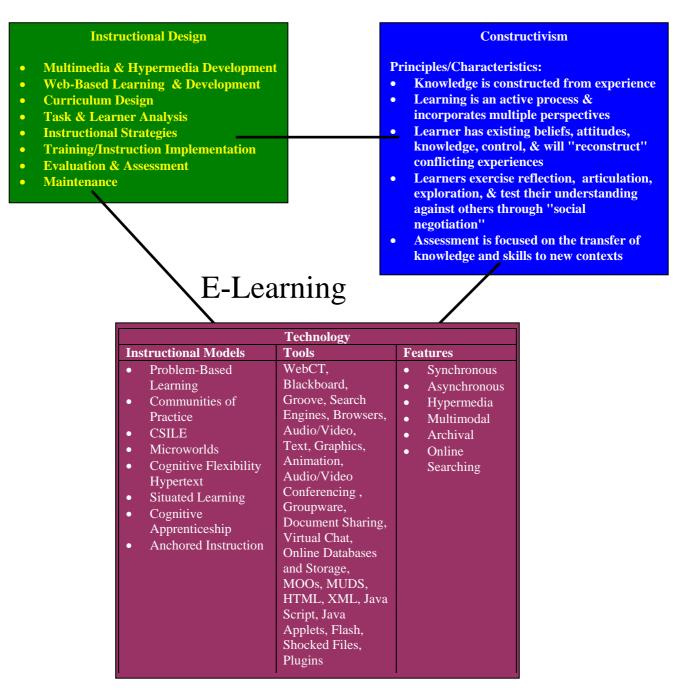
Instructional Design	Constructivism
• **Multimedia & Hypermedia Development** • **Web-Based Learning & Development** • **Curriculum Design** • **Task & Learner Analysis** • **Instructional Strategies** • **Training/Instruction Implementation** • **Evaluation & Assessment** • **Maintenance**	**Principles/Characteristics:** • **Knowledge is constructed from experience** • **Learning is an active process & incorporates multiple perspectives** • **Learner has existing beliefs, attitudes, knowledge, control, & will "reconstruct" conflicting experiences** • **Learners exercise reflection, articulation, exploration, & test their understanding against others through "social negotiation"** • **Assessment is focused on the transfer of knowledge and skills to new contexts**

E-Learning

Technology		
Instructional Models	**Tools**	**Features**
• Problem-Based Learning • Communities of Practice • CSILE • Microworlds • Cognitive Flexibility Hypertext • Situated Learning • Cognitive Apprenticeship • Anchored Instruction	WebCT, Blackboard, Groove, Search Engines, Browsers, Audio/Video, Text, Graphics, Animation, Audio/Video Conferencing , Groupware, Document Sharing, Virtual Chat, Online Databases and Storage, MOOs, MUDS, HTML, XML, Java Script, Java Applets, Flash, Shocked Files, Plugins	• Synchronous • Asynchronous • Hypermedia • Multimodal • Archival • Online Searching

Figure 1. Conceptual Framework

course, students should be encouraged to complete electronic evaluation forms to offer their constructive perspectives on different components of their electronic learning environment. According to the theoretical framework, these formative and summative evaluation processes would provide feedback on the effectiveness of the e-learning environment via various elements, such as the quality of instruction and level of institutional support. The ultimate goal of this continued evaluation method is to make the necessary enhancements to the web-based synchronous and asynchronous e-learning processes and improve the quality of instruction, as well as channel the necessary support for e-learning students, faculty and staff.

Based on this theoretical framework, students would be expected to attend and participate effectively in highly interactive class lectures and e-learning apprenticeship activities. A number of forms of e-learning technology, such as chat rooms, two-way audio and video, graphics and document sharing would allow the e-learning

instructor to monitor who is present and who is not. For instance, the synchronous software, HorizonLive requires people to log on so the class instructor would know who was there by the log on record. Asynchronous tools available on other software tools, such as Blackboard or eCollege, can keep track of those students who are present and participating in class.

To increase interaction among students and instructor in an e-learning class, the theoretical framework suggests that an extensive use of technology tools, for instance interactive video and audio, Chat and PowerPoint capabilities, need to be used in e-learning classes. Picciano (2001) states that "one [of the] major benefit(s) of interactive video technology is that it enables teachers and students to interact synchronously and comparably to a traditional classroom environment" (p. 70).

E-learning resources need to be available to aid students in self-directed discovery. E-learning students should be given ample time to explore and search for further information on those real-life class activities and problems using appropriate Internet search engines. The theoretical framework also emphasizes that electronic searching would provide an effective vehicle for students to elaborate on their current knowledge by affording them the opportunity to seek additional knowledge or clarification of existing knowledge.

E-learning instructors work collaboratively with their students to facilitate communication electronically in class, suggest different approaches and multiple perspectives to solve problems and apply the subject content to real-life situations. Creating a medium for discourse and inter-connectedness would assist e-learning students to transfer knowledge from long-term memory into working memory through the use of an electronic community of practice. This virtual community fosters and enhances the institutionalization and socialization of the learning process in e-learning classes as depicted in the theoretical framework.

The theoretical framework also explains that every e-learning student is expected to participate effectively in class by reflecting on and articulating her own experience in solving real-life problems, and commenting on and answering questions for class discussion. Electronic class discussions would allow students to articulate their learning, and then elaborate based on the comments of others who are participating in a delayed or live electronic discussion forum. Students' input, hints and answers to class activities would then be shared with the

class and assessed accordingly.

This theoretical framework suggests that notes and information exchanged and displayed via the video/audio system, Whiteboard, as well as Chat, in each class session, need to be archived for students to access and review at any time. The web features, hypermedia and archival create and archive matrices, tables and outlines to support reflection and facilitate interaction, understanding and establish a context for content and instruction, as well as relate the new content to previous knowledge (Driscoll, 1998).

Statement of the Problem

This study suggests that as demand for e-learning courses increases, close scrutiny and assessment are necessary to ensure quality learning and training for all participants. Accessibility and flexibility to higher education must be guarded with quality learning standards. Timely and clear evaluation must be conducted to measure and understand the quality and success of e-learning courses and their total impact on learning and teaching. Continuous evaluation of the design, development, and delivery of e-learning courses provide quality learning opportunities. If institutions of higher education harness and apply the principles of quality e-learning fully and effectively, e-learning students will have greater opportunities to succeed in quality e-learning environments. Based on the current literature, considerable changes in the design, development and delivery systems of e-learning courses could be applied to ensure successful learning experience for students.

2. RESEARCH PROCEDURE

This article reports several findings that specifically address this study's main research question: To what extent do the students at the Extended Learning Institute (NVCC) of Northern Virginia Community College (NVCC) perceive e-learning to be in alignment with the principles of quality e-learning?

To answer this question, surveys with students at the NVCC were undertaken by this researcher. The results of this research instrument are used in this study to draw conclusions about the quality of e-learning in an institution of higher education, namely the Extended Learning Institute of Northern Virginia Community College. Data analysis is comprised of descriptive statistics and qualitative triangulation of questions and responses included in the survey. Data analysis shows

common patterns and themes that provide specific answers to this study's research question.

E-mail and the Internet were the main data collection techniques used to send, distribute and return the surveys. E-mail was employed to inform the research participants of the location of the surveys on the Web and provide them with the appropriate letter of consent. The surveys were hosted on the Web via Zoomerang, a Web-based service that allows individuals or organizations to easily conduct professional, confidential and secured surveys via the Internet. The Internet technologies, MINITAB, Microsoft® Office and Excel were the tools used to send, collect, tally, organize and display information.

To evaluate, assess and analyze the e-learning process administered by the NVCC, all e-learning students were given surveys via the Internet based on principles of quality e-learning assembled by senior researchers and leaders Phipps and Merisotis (2000) and their staff at The Institute for Higher Education Policy (IHEP), Washington, DC. These "benchmarks," developed by IHEP, focus on important pillars related closely to the planning process for quality e-learning in institutions of higher education. The items included in the surveys addressed issues such as a) demographic information; b) general online experience; c) employer preference, financial support and attrition rate; d) utilized software and technological tools; e) institutional support; f) teaching/learning; g) course structure; h) student support; and i) evaluation and assessment. The surveys consisted of yes/no, ranking, open-ended and six point-type questions (see Appendix A).

3. RESULTS AND DISCUSSION

Eighty-seven e-learning participants responded to the student survey. The response rate for the student survey was unable to be calculated due to the continuous registration policy at the NVCC. The NVCC revised this policy after this survey was completed by the e-learning students. The student responses to various parts of the survey were organized, reported and analyzed as follows.

Demographic Characteristics of Student Respondents

The first part of this survey provided important demographic information about the NVCC's student population. The data in Appendix A's Table (A-1) reveal that the age of NVCC e-learning student respondents is distributed almost evenly within the ranges of 18-22, 23-

35, and 35 or older. This mix of ages among the e-learning students taking the NVCC courses illustrates the age diversity of students in public community colleges (Rhoads and Valadez, 1996).

Sixty-five percent of the student participants were female. Fifty-seven percent were freshman and sophomore college students, while the other 44% were pursuing a certificate or taking college courses to enhance their skills in a particular discipline. Seventy-four percent of the students were employed and 59% were full-time students. This data shows that the NVCC's e-learning student respondents were a mix of students pursuing degrees/certificates, and learners who sought to enhance their knowledge and skills in specific professional or training areas. Eleven percent of the student respondents reported having vision, mental, motor and/or hearing disability.

Prior Online Experience and Students Taking Synchronous, Asynchronous or Hybrid Classes

Regarding the past experience of students in e-learning, Appendix A's Table (A-2) shows that 73 participant students had not taken e-learning courses before enrolling at the NVCC. Table (A-3) shows that the remaining 14 respondents had taken 33 e-learning synchronous courses, 27 e-learning asynchronous courses, and 5 hybrid courses via other institutions of higher education. Based on these findings, one might also infer that those students took these individual e-learning courses either to complete their traditional college learning programs or as training sessions.

Employer Educational Preference and Financial Support

Appendix A's Table (A-4) shows that respondents' employers had few reservations toward the value of e-learning. Table (A-5) shows that 35% of these employers provided "some" or "full" financial support to those e-learners to pursue their educational or professional development through e-learning- which demonstrates that employers have some interest in funding education or training obtained via e-learning delivery systems.

E-learning Attrition

E-learning attrition is a major concern among distance learning educators. However, as Appendix A's Table (A-6) shows, 67% of the NVCC student respondents had not dropped an e-learning course before. This finding

demonstrates that the majority of those students were comfortable and interested in their e-learning environment. Table (A-7) includes narrative statements made by those students who had dropped e-learning courses. These statements focus on causes such as little experience with computers, difficulty learning the class's required software, poor instructors, family and health concerns, time constraints, pressing work schedule, work-related traveling, overload of courses, poorly-designed e-learning courses, little interaction with the instructor, inadequate selection of courses and disabilities.

Technology Tools

Technology tools are central to designing quality e-learning courses. However, the collected information in Appendix A's Table (A-8) reveals that not all students were technologically literate. Some students expressed dissatisfaction with certain functions of the Blackboard technology delivery system used to deliver the NVCC's asynchronous e-learning courses. Others were satisfied with these tools and hoped for more advanced technology and a variety of tools to be included and used in these courses.

Institutional Support

Appendix A's Table (A-9) shows that the majority (M= 4.03; SD = 0.92) of the e-learning students agreed that a "documented technology plan" is "in place and operational" at the NVCC to "ensure both qualitative standards and the integrity and validity of information." Other students (M=3.62; SD=0.88) agreed that Blackboard is "as failsafe as possible." Several students were "somewhat" satisfied with the functionality of Blackboard. This information indicates that Blackboard contains some flaws and shortcomings that some of the NVCC student respondents felt uncomfortable with, or they felt that it did not meet their learning needs during the e-learning process. In terms of building and maintaining the distance education infrastructure, the majority (M = 3.99; SD = 0.87) of the students were satisfied with the type of institutional support provided by the NVCC's e-learning centralized entity, the Extended Learning Institute (ELI).

Teaching/Learning

Appendix A's Table (A-10) indicates that., many students (M = 3.75; SD = 0.99) of the e-learning student respondents agreed with the level of and ways of interaction occurring among students and faculty in the NVCC asynchronous e-learning classes. However, some were "somewhat" satisfied with this level and type of interaction. Based on this data, one may infer that those students were interested in seeing new channels of communication and more opportunities for interaction and dialogues in the e-learning classes. The great majority of students (M = 3.95; SD = 0.98) of students agreed that faculty provided constructive and timely feedback on their class work. This feedback is certainly necessary for students' academic success. On the other hand, several students (M = 3.58; SD = 0.99) reported that they were instructed appropriately on how to research the Internet and validate Web resources. This response rate may suggest that e-learning students expected more guidance and support from faculty on how to find and assess Web resources such as full online articles and books.

Course Structure

Appendix A's Table (A-11) shows that, before the beginning of the e-learning process, the majority of the NVCC student respondents (M = 3.86; SD = 1.10) felt that they were given the proper advice about expectations, factors relating to their commitment and motivation, and the required computer skills that largely determine the success of those learners in a quality e-learning environment. The data also indicate that many of the NVCC student respondents (M = 4.05 and M = 4.15; SD = 0.91 and ; SD = 0.8) were provided with written course information, ideas, objectives, learning outcomes and Web-based library resources. Several students (M = 3.78; SD =1.03) were satisfied that faculty and students agree upon expectations regarding times for completing student assignments and faculty response.

Student Support

Appendix A's Table (A-12) shows that the great majority of the NVCC e-learning student respondents (M=4.17; SD=0.76) received adequate course information and support services, such as admission, tuition and fees, textbooks and technical help, and proctoring rules and guidelines. Several of the e-learning student respondents (M = 3.33; SD = 1.09) were provided with adequate "hands-on training and information to aid them in securing material through electronic databases, interlibrary loans, government archives, news services and other sources." Several students (M = 3.43; SD =

1.04) had adequate "access to technical assistance, including detailed instructions regarding the electronic media used, practice sessions prior to the beginning of the course, and convenient access to technical support staff." Several students (M= 3.45; SD = 1.04) of the respondents felt that "questions directed to student service personnel were answered accurately and quickly, with a structured system in place to address student complaints." Based on this data, one might conclude that students were interested in seeing an increase in the quality and quantity of student support and facilitation services, particularly in the areas of hands-on training, flexible access to technical assistance, and expedient access to student service staff.

Evaluation and Assessment

In terms of evaluation and assessment, the survey's final part focused only on course evaluation and assessment, as the issue of individual or learning assessment was addressed in the course evaluation process. Appendix A's Table (A-13) shows that the majority of the students (M = 3.82; SD = 0.84) reported that they were satisfied with the NVCC's evaluation process and assessment techniques of the e-learning environment. Several of the respondents (M = 3.56; SD = 0.97) agreed that "data on enrollment, costs and successful/innovative uses of technology" were used to evaluate course effectiveness. Thirty-seven percent of the respondents reported that that they did not know if this type of data was used in the course evaluation process.

Conclusions and Recommendations for a Quality E-Learning Process

This study's findings led to the following conclusions and specific recommendations in reference to the quality e-learning principles:

1. Upgrade and regularly maintain the current e-learning course delivery system, Blackboard.
2. Upgrade the standards used in developing, designing and delivering e-learning courses, and focus more on the learning outcome rather than the availability of technology.
3. Diversify e-learning delivery format by offering synchronous e-learning courses to students and other interested parties.
4. Provide e-learning students with sufficient hands-on and online training and information to assist them in performing basic computer functions and Internet-based research, in knowing the hardware and software requirements for the course, and in obtaining online materials, books and references.
5. Provide adequate and convenient technical access to students.
6. Increase student support services.
7. Provide e-learning students with orientation sessions and written resources to deal with issues arising from students' using electronically accessed data.
8. Make effective use of data on enrollment costs, and successful and innovative applications of technology, to evaluate course effectiveness.

APPENDIX A: STUDENTS' SURVEY

Table A-1. Demographic Characteristics of Student Respondents

Variables	Number of Respondents	Percent of Respondents
Age		
18-22	24	28%
23-35	29	33%
35 or older	34	39%
Gender		
Female	56	65%
Male	30	35%

College Level		
Freshman	18	21%
Sophomore	31	36%
Certificate	7	8%
Other	31	36%
Work Status		
Employed	64	74%
Not Employed	23	26%
Enrollment Status		
Full-time	41	59%
Part-time	44	52%
Disability		
Has vision, mental, motor, and/or hearing disability	10	11%
Has no vision, mental, motor, and/or hearing disability	77	89%

Table A-2. Prior Online Experience

Have you taken online courses before enrolling in Northern Virginia Community College?	Number of Responses	Percent of Respondents
Yes	14	16%
No	73	84%

Table A-3. Employer Educational Preference

My employer has _____ reservations regarding the value of my online courses.	Number of Responses	Percent of Respondents
Strong	2	2%
Some	3	4%
No	35	41%
Not Applicable	47	55%

Table A-4. Employer Financial Support

My employer provides _____ financial support to pursue my higher education/ professional development via online learning.	Number of Responses	Percent of Respondents
Full	12	14%
Some	18	21%
No	23	27%
Not Applicable	33	39%

Table A-5. E-Learning Attrition

Have you ever dropped an online course?	Number of Responses	Percent of Respondents
Yes	29	33%
No	58	67%

Table A-6. Common Reasons for E-learning Attrition

Lack of computer and technical skills, negative and limited constructive feedback from course instructor, disorganized course structure and development, time and family constraints, work, personal and health issues, overwhelming full course load and e-learning requirements, type of course was not appropriate to take online, e-learning professor is not familiar with the e-learning environment, the absence of face-to-face interaction, disability issues, class schedule conflict, inappropriate class enrollment and poor time management skills

Table A-7. Technology Tools: Overall Comments on the software and other technological tools that you have used in your online learning courses

Unfamiliar to some extent with the technology tools used in the e-learning courses, Blackboard was user-friendly with a few technical glitches, technology software and hardware were not available for taking advanced e-learning courses, slow internet connection, reasonable use of the email system and used Microsoft applications and CD-ROM in the e-learning process.

Table A-8. Institutional Support

A documented technology plan that includes electronic security measures (i.e., password protection, encryption, back-up systems) is in place and operational to ensure both quality standards and the integrity and validity of information.	Mean (M) & Standard Deviation (SD)
Mean (M)	4.03
Standard Deviation (SD)	0.92
The reliability of the technology delivery system (e.g., Blackboard) is as failsafe as possible.	
M	3.62
SD	0.88
A centralized system (e.g., Extended learning Institute/NOVA Online service) provides support for building and maintaining the distance education infrastructure.	Mean (M) & Standard Deviation (SD)
M	3.99
SD	0.87

Table A-9. Teaching/Learning

Interaction with faculty and other students is an essential characteristic and is facilitated through a variety of ways, including voice-mail and/or e-mail.	Mean (M) & Standard Deviation (SD)
M	3.75
SD	0.99
Feedback to student assignments and questions is constructive and provided in a timely manner.	
M	3.95
SD	0.98
Students are instructed in the proper methods of effective research (i.e., researching the Web for information), including assessment of the validity of Web resources.	
M	3.58
SD	0.99

Table A-10. Course Structure

Before starting an online course, students are advised about the course to determine (1) if they posses the self-motivation and commitment to learn at a distance and (2) if they have access to the minimal technology required by the course design.	Mean (M) & Standard Deviation (SD)
M	3.86
SD	1.10
Students are provided with supplemental course information that outlines course objectives, concepts, and ideas, and learning outcomes for each course are summarized in a clearly written, straightforward statement.	
M	4.05
SD	0.91
Students have access to sufficient library resources that may include a "virtual library" accessible through the World Wide Web.	
M	4.15
SD	0.80
Faculty and students agree upon expectations regarding times for student assignment completion and faculty response.	
M	3.78
SD	1.03

Table A-11. Student Support

Students receive information about courses, including admission requirements, tuition and fees, books and supplies, technical and proctoring requirements, and student support services.	Mean (M) & Standard Deviation (SD)
M	4.17
SD	0.76
Students are provided with hands-on training and information to aid them in securing material through electronic databases, interlibrary loans, government archives, news services, and other sources.	
M	3.33
SD	1.09
Throughout the duration of the course, students have access to technical assistance, including detailed instructions regarding the electronic media used, practice sessions prior to the beginning of the course, and convenient access to technical support staff.	
M	3.43
SD	1.04
Questions directed to student service personnel are answered accurately and quickly, with a structured system in place to address student complaints.	
M	3.45
SD	1.04

Table A-12. Evaluation and Assessmentt

The course's educational effectiveness and teaching/learning process is assessed through an evaluation process that uses several methods and applied specific standards.	Mean (M) & Standard Deviation (SD)
M	3.82
SD	0.84
Data on enrollment, costs, and successful/ innovative uses of technology are used to evaluate course effectiveness.	
M	3.56
SD	0.97

REFERENCES

Aragon, S. R., Johnson, S. D. and Shaik, N. 2002. The Influence Of Learning Stylepreferences on Student Success in Online Versus Face-to-Face Environments. *The American Journal of Distance Education*, 16 (4), 227-244.

Cheurprakobkit, S., Hale, D.F. and Olson, J. N. 2002. Technicians' Perceptions about Web-based courses: The University of Texas system experience. *The American Journal of Distance Education*, 16(4), 245-258.

Conrad, D. L. 2002. Engagement, Excitement, Anxiety, and fear: Learners' Experiences of Starting an Online Course. *The American Journal of Distance Education*, 16 (4), 205-226.

Driscoll, M. P. 1998. *Web-based Training: Using Technology to Design Adult Learning Experiences*. San Francisco: Jossey-Bass/Pfeiffer.

Kim-Rupnow, W. S., Dowrick, P. W. and Burke, L. S. 2001. Implications for Improving Access and Outcomes for Individuals with Disabilities in Postsecondary DistanceEducation. *The American Journal of Distance Education*, 15 (1), 25-40.

Neuhauser, C. 2002. Learning Style and Effectiveness of Online and face-to-face instruction, *The American Journal of Distance Education*, 16 (2), 99-113.

Phipps, R. and Merisotis, J. 2000. *Quality on the Online: Benchmarks for Success in Internet-based Distance Education.* Washington, DC: The Institute for Higher Education Policy.

Picciano, A.G. 2001. *Distance Learning: Making Connections Across Virtual Space and Time*. New Jersey: Prentice Hall.

Rhoads, R.A. and Valadez, J. R. 1996. *Democracy, Multiculturalism, and the Community College: A Critical Perspective*. New York: Garland Publishing.

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