

## Adult Students' Perceptions of Web and Interactive Video Classes

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*The purpose of this study was to determine students' perceptions of the delivery system for web and ITV classes at the University of Arkansas, and the students' perceived level of learning as a result of participation in these classes. Overall, students had positive perceptions about their experiences in distance education at the University of Arkansas. Undergraduate students in this study preferred ITV courses, while graduate students were more positive about courses by web format.*

Keywords: Adult Learners, Distance Education, Web Classes

Distance education is described as instructional delivery in which learners and teachers are separated during the learning process by time and/or space (Motamedi, 2001; Epstein, 1999). Distance learning began with correspondence work and has progressed through home study, independent study, computer-assisted learning, online learning and interactive video (ITV) (Berg, 2002).

Distance education in higher education often targets working students who cannot easily travel to campus to participate in traditional programs. In a study by Christensen, Anakwe and Kessler (2001), university students viewed distance education as a "tool to help them fulfill their needs (e.g. graduate on time) and less of a substitute to traditional studies" (p. 270).

The way university classes are delivered to students has changed dramatically and rapidly over the past few years. In the early 1990's all classes at the University of Arkansas in vocational and adult education were traditional classes presented on campus. Now, many classes are presented by web or interactive video (ITV). The number of students served by the program has significantly increased as the delivery system changed. It is important to know how these students perceive instruction by web and ITV.

The Department of Rehabilitation, Human Resources and Communications Disorders at the University of Arkansas has designed programs with distance education to meet the needs of two groups of adults. One program is a master's degree in vocational or adult education (VAED), and the other is a Bachelors of Science in Education with a concentration in human resource development (HRD) for employed adults who have completed part of a bachelor's degree. Courses in both programs are offered by ITV and web.

Undergraduate courses offered only by ITV are *Theory and Principles of Adult Education, Introduction to HRD, Skills and Strategies in HRD, Communications in HRD, Leadership in HRD, Group Dynamics, Professional Development, and Needs Assessment and Evaluation*. Undergraduate courses offered by web are *Employment Law, Training and Curriculum Development, and Applied Adult Theory and Principles*.

Graduate courses offered only by ITV are *Advanced Methods in VAED, The Change Process, Program Planning and Evaluation, and Training in the Workplace*. Graduate courses offered only by web are *Foundations of Vocational Education, Foundations of Adult Education, Instructional Materials in VAED, Learning in the Workplace, Curriculum Development, School-to-Work, and The Adult Learner*.

Six faculty members offer graduate courses. Two faculty members, one adjunct faculty member and four instructors teach undergraduate courses. Minimal support was provided for learning methods of ITV instruction. A high level of support for development and management of web classes was provided by the Division of Continuing Education.

"Distance education is not for everyone. It often involves more learner dedication and initiative than traditional courses, since students may feel isolated" (Epstein, 1999). This isolation as well as balancing family, work and school obligations can affect students' perceptions of their experience in distance education courses.

Studies have looked at the difference between traditional classroom-based courses and distance education. In distance education class, students can be in more than one setting. Interaction between students is more structured. In a traditional classroom there is more spontaneous sharing. Instructors must be more structured (concrete sequential) in distance settings. It is more difficult for distance students to have one-on-one communication with the instructor. Distance conversations are never private.

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Motamedi (2001) stated that distance education offers opportunities for students that are different and sometimes superior to traditional classroom-based instruction. Parke and Tracey-Mumford (2000) found with a survey from thirty-one states that distance learning for adult learners is as effective as traditional instruction when appropriate methods are used for instruction and interaction among students and the teacher are built into the program. In a study by Spooner, Jordon, and Algozzine (1999), students' overall perceptions and ratings of instruction were similar for classes offered on-campus and offered by ITV. Students who took on-line web classes at Tidewater Community College (Office of Institutional Effectiveness, 2001) indicated that they were more likely to use critical thinking in their on-line courses as compared to traditional. They also indicated that there was no difference in their motivation to learn in on-line courses.

Effectiveness of teaching seems to be rated differently by distance education students. In one study, the effectiveness of professors' teaching was rated higher for traditional classes than for distance education classes by ITV (Anderson & Kent, 2002). In a study by Paulsen, Higgins and Miller (1998), students in ITV classes were satisfied with instruction; however, they preferred traditional classes with the instructor present.

Students seem to have difference experiences when sitting in a class with a professor or participating at a remote ITV site. Bower, Kamata and Ritchie (2001) found that ITV host-site students rated the instructor and course experience higher than remote-site students. Anderson, Banks & Leary (2002) also found that students at ITV remote sites were less satisfied with their instruction than students at the host site. Students at the host site in a study by Carter (2001) rated the class interaction higher than students at the remote sites.

Several other factors seem to affect students' perceptions. Inman and Kerwin (1999) found that students in ITV classes judged the success of the class based on the availability of helpful materials for interacting in the class, the use of an on-campus orientation session at the beginning of the class, and the availability of the instructor when help was needed. Motamedia (2001) stated that the number of sites, number of students at sites, instructor's teaching style, interactivity, motivation of students, course organization, attitude of participants and instructor preparation influence the success of ITV. Parke and Tracy-Mumford (2000) found that adult distance learners are highly motivated and self-disciplined, seek assistance when needed and are committed to learning.

## **Purposes of the Study**

The primary purpose of this study was to determine the difference in students' perceptions of the delivery system for web and ITV classes at the University of Arkansas. In addition, the researchers determined students' perceived level of learning as a result of participation in these classes, students' engagement in class activities, students' perceptions of teacher and student interaction during distance education classes, and students' perceptions of the physical learning environment.

Many students enrolled in Vocational and Adult education at the University of Arkansas take most or all of their classes by web and multiple-site interactive video. With the present emphasis on distance education at the University of Arkansas, there was a need to determine our students' perceptions of the courses offered by distance education.

Graduate students majoring in adult or vocational education can take all of their coursework by distance education because of a statewide outreach program offered by the University of Arkansas. In this program, there are ten distance education sites located throughout the state. Students located on the main campus must take at least five courses by distance education and have the option of taking some courses in a traditional classroom. However, students located at remote sites complete their entire degree through web and ITV courses. Graduate classes are offered on a rotation basis. However, the students are not in a cohort group.

Undergraduate students in vocational education with a concentration in human resource development participate in a two-year rotation of ITV courses. During this rotation, they complete eight courses, which are only accessible through ITV. The undergraduate students are members of a cohort group. These undergraduate students also complete two or more courses by web.

## **Methodology**

### *Instrumentation*

A questionnaire for this study was developed based on a review of the literature examining factors that influenced students' perceptions of distance education. The survey included items about the benefits of distance education, such as convenience of class location and scheduling; negative aspects, such as difficulty of interaction with other students and instructors or anxiety created by use of technology; presentation of class materials such as amount of material covered, organization of content, or variety of class activities; the learning environment required

for both types of learning, such as dealing with distractions during class or study time; level of self-direction required by learners; expectations for classes; and level of learning.

Participants were asked to indicate their level of agreement or disagreement (strongly agree, agree, neither agree or disagree, disagree, strongly disagree) with 33 statements. The first nine statements were for all participants and focused on their overall perceptions of distance education. The next 10 statements were for participants who had taken courses by ITV (interactive audio-video). The next 14 statements were for those who have taken courses by web. The survey also contained demographic factors including gender, age, college major, site location, number of ITV classes taken, and number of web classes taken. They also indicated their preference of ITV or web and made open-ended comments regarding their experience with distance education. (See appendix A)

The instrument was field tested for content, format, and clarity by a group of faculty and vocational and adult education students.

#### *Sample*

The survey was administered during the spring 2003 semester to 122 graduate and undergraduate students representing adult and vocational education majors. Web and ITV graduate students at distance sites completed the survey by e-mail. Students in local ITV sites completed a written questionnaire that was distributed by class instructors. Undergraduate students completed questionnaires distributed by an HRD faculty member at a cohort meeting.

#### *Data Analysis*

Basic descriptive statistics were computed for all items. SPSS was used to compute t-tests, analysis of variance and factor analysis.

### **Findings**

Most (94, 77.0%) of the students were female and 28 (23%) were male. Nine (7.4%) were under 25 years of age while 45 (37.2%) were 25 to 34 years old. Forty-one (33.6%) were 35 to 44 years of age and 26 (21.5%) were in the 45 to 54-age range. One student was 55 years old or older.

Just over half of the students (63, 51.6%) were undergraduate students in human resource development, while 59 (48.4%) were graduate students in vocational or adult education. Students were located throughout the state of Arkansas. Thirty-seven (30.3%) students were located in Fayetteville at the main campus of the University of Arkansas, and 85 students were participating in the programs at distance sites throughout the state.

Some participants were enrolled in their first distance education class, while others had experienced both presentation formats. The number of ITV classes completed by the participants ranged from 1 to 18. The majority (44, 36.4%) had taken four ITV classes. Twenty-two (18.2%) students had completed eight ITV classes. Only 10 (8.3%) students had finished one ITV class and six students (4.9%) had completed no ITV classes.

Students involved in web classes took from 1 to 9 classes. Thirty-two students (26%) completed one web class, while 22 (18.2%) had taken two. Twenty-eight (23%) took more than two classes. Forty (32.8%) of the participants had never enrolled in a web class.

Seventy-six (62.3%) of the students had taken both ITV and web classes. When these students were asked if they would prefer to take ITV or web classes, approximately half indicated a preference for each with 47.7% choosing ITV and 52.3% choosing web. Undergraduate students indicated a preference for ITV courses, while graduate students preferred web.

Overall, the means for all items indicated satisfaction with web and ITV courses. Students felt their learning was adequate in ITV courses with a mean of 4.60. They indicated that instructors used class time effectively in meeting course objectives ( $m=4.52$ ). Students felt free to express their ideas and were not deterred by cameras and microphones ( $m=4.45$ ). They also felt classes were paced properly ( $m=4.43$ ).

Students indicated that web classes allowed them to think over their responses to class assignments ( $m=4.46$ ). They felt learning in web classes was adequate with a mean of 4.35. Students indicated that web classes improved their computer skills ( $m=4.20$ ). Students also felt comfortable posting their thoughts and ideas on the discussion board with a mean of 4.18.

In general, when describing their perceptions of distance education, both ITV and web classes, student indicated that instructors encouraged participation ( $m=4.80$ ). They would recommend that other students take similar courses with a mean of 4.72. Students indicated that they were required to take control and be responsible for some aspects of the classes ( $m=4.70$ ). They found that distance instructors were available and felt a sense of accomplishment, both items with means of 4.68.

One-way analysis of variance was computed to compare students' scores on perceptions of distance education (overall, ITV and web) and age of students. There was no significant difference in perceptions at the .05 level.

Students' perceptions of distance education (overall, ITV and web) and gender as well as academic standing were compared with t-tests. There were no significant difference between scores on perceptions and gender. A significant difference ( $p < .01$ ) was found between students' perceptions of web classes and academic status. Graduate students rated their perceptions of web classes ( $m = 4.06$ ,  $s.d. = .60$ ) higher than undergraduate students ( $m = 3.67$ ,  $s.d. = .51$ ). There was a significant difference ( $p < .05$ ) between students overall perceptions of distance education and academic status. Undergraduate students had a more positive attitude about distance education ( $m = 4.67$ ,  $s.d. = .38$ ) than graduate students ( $m = 4.46$ ,  $s.d. = .43$ ). There was no significant difference between perceptions of ITV and academic status.

The items in the questionnaire that focused on overall perceptions of distance education, ITV classes and web classes were factor analyzed by section to examine the relationship between the statements and describe any underlying thematic structure. The factor analysis of the section on overall perceptions of distance education revealed that eight of the nine items accounted for 60.13% of the variance. The two factors reflected the two purposes of the study. The first factor, which accounted for 45.4% of the variance, reflected four items related to the delivery system of ITV and web classes. The factor loading ranged from 0.83 to 0.60. The second factor that accounted for 14.7% of the variance reflected four items related to perceived level of learning. The factor loading for the second factor ranged from 0.80 to 0.56.

Three factors emerged from the factor analysis of the ten items related to ITV. Nine of the items accounted for 72.6% of the variance. The researchers labeled the three factors as classroom environment, student interaction via ITV and level of learning. The six items in factor one (classroom environment) and three (student interaction via ITV) were related to the delivery system and accounted for 57.2% of the variance. Three items in factor two were related to perceived level of learning as a result of participation in ITV classes and accounted for 15.4% of the variance.

Five factors emerged from the 14 items focused on web courses that accounted for 77.06% of the variance. The factors were named sharing information, thinking, independent study, expressing ideas, and computer skills. Four of the five factors were related to students perceived level of learning and accounted for 69.74% of the variance. The fifth factor, computer skills, accounted for 7.3% of the variance and was related to the delivery system for web classes.

In comments from students, their responses indicated that they felt both ITV and web were worthwhile ways to offer classes. Many students commented that they would be unable to obtain and complete their studies without the distance education program. Students indicated that they spent more time reading and studying for web courses than ITV classes but enjoyed the social contacts in ITV classes. The web classes allowed students to work at their own pace and at convenient times. The web class also allowed everyone to express their own opinions.

Some specific student comments were: "Distance education is not my choice." "Distance education is the only way I could obtain my degree." "Having been in both ITV and web classes, I feel that both are worthwhile and have their place in higher education." "I agree with distance education because it gives up more opportunities, but I still prefer a traditional classroom." "I believe that distance education courses are a tremendous resource, especially for students who don't live in close proximity to the main campus." "I enjoy ITV more than web. I am a people person and get easily distracted on the computer." "I enjoy the ITV classes, but I need the relative freedom of the web classes. I found that I do more work for the web classes. I spend more time on assignments for web classes than class time and assignment times put together for ITV classes." "I feel web-based classes allow more flexibility for the learner who has job and family responsibilities." "I felt the opportunity to interact with students from a variety of locations more than compensated for any difficulty presented by the technology of ITV." "With ITV, there needs to be some form of control over excessive individual response time." "I have enjoyed both settings. I like the web class because I can work at my own pace and at convenient times. I prefer ITV class because I get to see the instructor and my classmates." "I love the freedom that web courses allow. I do a lot more reading and studying for my web course." "In ITV classes, the students spend too much time talking among themselves and not listening to the instructor." "The web classes better prepare a student for real-life work experiences through research methods required, interaction through discussion board (writing concisely and detailed), and becoming proactive on class work."

## Summary and Conclusions

Although this study compared undergraduate and graduate students in two different programs, the students were all nontraditional students. Most were part-time students taking evening and weekend classes. Almost all were employed in full-time jobs.

Overall, students had positive perceptions about their experiences in distance education at the University of Arkansas. These programs allowed students to continue and complete their education regardless of their location in the state as well as job and family obligations. All of these students were enrolled in a program specifically designed to meet their needs as non-traditional students. Distance education was an integral part of the degree program. Their efforts were supported with an on-campus staff. Undergraduate students had a significantly higher perception of distance education than graduate students.

Undergraduate students in this study preferred ITV courses. These students were enrolled in cohort groups and took eight ITV classes with the same classmates throughout a two-year course rotation. The students in each cohort group developed close friendships and working relationships despite being separated by great distances.

The graduate students were more positive about courses by web format. These courses allowed graduate students to work at their own pace and at convenient times. The web classes allow them to devote more time and effort to the assignments. The challenge of web classes seemed to appeal to graduate students.

This study shows that distance education by ITV or web is clearly meeting the needs and expectations of adult students. Students feel positive about their learning experiences regardless of the mode of instruction.

Based on the results of the factor analysis of questionnaire items, it appears that classes presented by web place more emphasis on learning and less emphasis on the delivery system. The responsibility for studying, researching and learning falls completely on the student when they participate in web classes. They must also assume accountability for time management and scheduling. It is not possible to be a nonparticipant in a web class, because it is an individualized endeavor even when group activities are part of the class format.

Students in this study have taken ITV and web classes from a number of instructors in vocational and adult education. Approximately 80% of the students had taken four or more ITV classes with at least four different instructors. Forty percent of the students had taken at least two web classes from different instructors.

From the results of the factor analysis, it appears that the delivery system and the instructor make a greater difference in ITV classes than in web classes. The structure, format, and requirements of web classes vary little from instructor to instructor because of the course delivery by computer. However, there is great variation in the way ITV classes are presented and perceived by the students. The instructor's teaching style, class structure, organization of content, utilization of time and resources, and encouragement of student interaction can differ greatly in ITV classes. The technology of the delivery system can inhibit students from expressing their ideas and thought.

The experience of participating in an ITV classes is guided more by the instructor than in web classes. The learning is the result of teacher-student and student-student interaction. The experience of taking web classes is equal for all participants since the student is responsible for their own learning and involvement.

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3.	The quality of my education has not been compromised by distance education.	5	4	3	2	1
4.	My distance education instructors encourage student participation.	5	4	3	2	1
5.	I enjoyed getting to know fellow class members through distance education.	5	4	3	2	1
6.	I had a sense of accomplishment after completing distance education courses.	5	4	3	2	1
7.	The method of course presentation kept my interest high throughout the entire course.	5	4	3	2	1
8.	I would recommend that other students take similar courses.	5	4	3	2	1
9.	ITV and web classes require students to take control and be responsible for some aspects of the class.	5	4	3	2	1

**Respond to the Following Statements if you Have Taken an ITV Course.**

10.	The length of class periods is appropriate.	5	4	3	2	1
11.	The ITV classrooms are physically comfortable for students.	5	4	3	2	1
12.	The ITV classes provide a comfortable environment for learning.	5	4	3	2	1
13.	I feel free to express my ideas and opinions in ITV classes.	5	4	3	2	1
14.	ITV classes are paced appropriately.	5	4	3	2	1
15.	Being in a classroom with cameras and microphones does <u>not</u> deter my learning.	5	4	3	2	1
16.	Being on camera and speaking on a microphone does <u>not</u> make me nervous.	5	4	3	2	1
17.	Students located at the site with the instructor do <u>not</u> monopolize the discussion.	5	4	3	2	1
18.	My instructors have used classtime effectively in meeting the course objectives.	5	4	3	2	1
19.	I feel my learning has been adequate in ITV classes.	5	4	3	2	1

**Respond to the Following Statements if you Have Taken a Web Class.**

20.	Web classes improve my computer skills.	5	4	3	2	1
21.	I spend more time working on assignments for my web class than other classes.	5	4	3	2	1
22.	I feel comfortable posting my ideas and thoughts on the discussion board.	5	4	3	2	1
23.	I take time to think over my responses for my web class.	5	4	3	2	1
24.	I feel that my learning has been adequate in web classes.	5	4	3	2	1
25.	I don't miss the additional information that might be shared by the instructor in a more traditional class setting.	5	4	3	2	1
26.	I don't miss seeing my classmates and instructors.	5	4	3	2	1
27.	I enjoy reading other students' assignments on the discussion board.	5	4	3	2	1

28.	The discussion board fulfills my need to discuss and share course content with others.	5	4	3	2	1
29.	I find it easier to write my thoughts rather than verbalize them.	5	4	3	2	1
30.	Web class assignments require more research.	5	4	3	2	1
31.	Working independently requires me to find additional resources.	5	4	3	2	1
32.	Web classes allow me to be free for my own thoughts and expressions.	5	4	3	2	1
33.	Posting assignments to the discussion board allows me to express how I feel about issues.	5	4	3	2	1

**Respond to the Following Statement if you Have Taken both ITV and Web Classes**

34. If you had a choice, would you prefer ITV or web classes?    \_\_\_\_ ITV classes    \_\_\_\_ Web classes
35. Feel free to make any additional comments about your experiences with distance education.