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Shirley J. Preston Ph.D.
Central Methodist College

Bob R. Stewart Ed.D.
University of Missouri-Columbia

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Satisfaction with a Workshop for Health Professionals
Delivered Via Interactive Distance Learning

Shirley J. Peterson
Bob R. Stewart

Abstract: The purpose of this study was to investigate participants’ perceived learning and satisfaction with the interactive television (ITV) classroom, the workshop, and the instructor, whether they were at the originating site or the remote sites. The sample consisted of 97 rural health care providers who attended one of two continuing education programs on Infection Control Update offered by the Missouri League for Nursing. Based on the findings of this study, the following conclusions were drawn: (a) participants at the originating site perceived more instructor verbal and nonverbal immediacy behaviors than participants at the remote sites; (b) participants at both the originating and the remote sites perceived positive and similar learning outcomes; and (c) participants at the

1Shirley J Peterson, Ph. D., Chair, Department of Nursing, Central Methodist College, Fayette, MO; Bob R. Stewart, Ed. D., Professor and Chair, Department of Practical Arts and Vocational Technical Education, University of Missouri-Columbia, Columbia, MO.

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originating and the remote sites had positive perceptions about the ITV classroom, workshop, and instructor.

Research has not conclusively demonstrated that telecommunication courses and face-to-face instruction yield the same results nor that they are interchangeable (Walker & Hackman 1992). Telecommunication courses are those courses presented over television ranging from video programs to interactive television, while face-to-face instruction occurs with the student and the teacher in the same classroom. There is a need to identify those factors which contribute to participant learning and satisfaction with interactive television instruction. This study focused on participants’ perceived learning and satisfaction in a one-hour or a three-hour continuing education program utilizing an interactive television (ITV) classroom.

Continuing education for professionals has become increasingly important in this era of technological advancement. In most occupations, personnel are required to train, retrain, and upgrade skills on a continuing basis. New technology leads to improved, complex equipment. Research leads to new, improved techniques. Continuing education is necessary to provide personnel with the information they need to improve their knowledge and skills.

Participant satisfaction is one key to successful continuing education programs. Satisfaction is related to participant involvement in the program; presentation of relevant, useful information; convenience of time; and convenience of location. Manteuffel (1982) identified five characteristics of a satisfied adult participant: involved, challenged, self-directed, rewarded, and safe. Holmberg (1989) believed that intellectual experiences were enhanced by face-to-face communication between the participant and the instructor.
Distance education has been evolving at a rapid pace and is suggested as an appropriate way to deliver continuing education. The movement has focused on improvement of the delivery system from correspondence, radio, and prerecorded television programs to two-way interactive television. The advances in technology have improved the quality of educational programs and the quality of presentation. The distance in distance education is diminished as students and instructors, separated geographically, are able to communicate with each other visually and verbally.

There is not a readily identifiable theoretical base for distance education (Moore 1983). There are, however, several aspects of learning theory which are appropriate to include in the search for a distance education theory base.

Adult education is based on the assumption that adults are motivated to learn what is relevant and what can be applied immediately. They enter a learning situation with expectations that the information will be meaningful. Adults tend to resist learning when told they must learn something and tend to learn only what they think they need to know. They exhibit diverse learning styles (Beaudin & Williams, 1990; Manteuffel, 1982).

Knowles (1970, p 39) believed, “An adult learning experience should be a process of self-directed inquiry, with resources. being available, but not imposed, ” The goal of adult education programs should be focused on helping participants develop greater understanding of self and an awareness of their ability to change (Nielsen 1992).

The teacher is an essential part of the adult learning experience (Knowles, 1970). Gagne’ (1977) discussed the enhancement of retention and transfer of learning through feedback. He indicated that feedback did not necessarily require the use of words such as right, wrong, correct, or incorrect. Teachers use subtle cues such as a nod, a smile, a glance, etc. to indicate correct
performance. “The usefulness of frequent feedback during the acquisition of newly learned capabilities should not be overlooked” (Gagne’, 1977, p 298). Holmberg (1989) believed that face-to-face communication between participant and teacher enhanced intellectual experiences. Verbal and nonverbal immediacy behaviors play an integral part in the education of the adult.

Personnel in rural health care facilities need access to educational programs presented by experts in special areas of health care practice. Distance prevents most personnel from easily accessing quality programs. Interactive television programs present a viable option for updating rural health care personnel. The satisfaction of the participants is a major concern for agencies who present continuing education programs. Walker and Hackman (1992) identified social presence, verbal and nonverbal teacher immediacy, information transfer, and video/audio transmission as factors which contributed to students’ perceptions of learning and satisfaction in a televised course. A review of the literature revealed multiple factors linked to participant satisfaction with the underlying assumption that participant satisfaction resulted in program success (Hackman & Walker, 1990; Holmberg, 1989; Walker & Hackman, 1992). Therefore, the focus of this study was to provide information about the use of the interactive television method of distance education delivery.

Purpose

The purpose of this study was to investigate participant perceived learning and satisfaction with the interactive television (ITV) classroom, the workshop information, and the instructor, whether they were at the originating site or the remote sites. The participants were asked to report perceptions of their learning and of the verbal and nonverbal immediacy behaviors of the instructor in the interactive television classroom. The variables of age, experience, license, grade, and reason for attending the workshop were also examined.
Research Questions

The study was designed to answer the following six research questions:

1. Are there differences in participants’ perceptions of verbal immediacy behaviors of the instructor by site (originating and remote) as measured by the Interactive Television Participants Questionnaire (ITPQ)?

2. Are there differences in participants’ perceptions of nonverbal immediacy behaviors of the instructor by site (originating and remote) as measured by the ITPQ?

3. Are there differences in participants’ perceptions of learning by site (originating and remote) as measured by the ITPQ?

4. Are there differences in participants’ perceptions of satisfaction with the ITV classroom by site (originating and remote) as measured by the ITPQ?

5. Are there differences in participants’ perceptions of satisfaction with the workshop by site (originating and remote) as measured by the ITPQ?

6. Are there differences in participants’ perceptions of satisfaction with the instructor by site (originating and remote) as measured by the ITPQ?

Methodology

Population and Sample

The population of this study was health care practitioners from rural Missouri. Rural Missouri encompasses all of Missouri with the exception of the five counties surrounding St. Louis and the five counties surrounding Kansas City, the only two major metropolitan areas of the state. The 97 participants in this study were judged to be a purposive sample of rural health care providers who chose to take the continuing education program via interactive television at the originating and the...
remote sites during the spring of 1994. There were 17 participants at the originating site and 80 participants at the four remote sites.

The occupations of participants that attended each site are reported in Table 1. The persons with more professional preparation (registered nurses and administrators) comprised 53% of the group at the originating site but 35% at the remote sites while the persons with less preparation comprised 30% of the group at the originating site but 54% at the remote sites.

Table 1

Occupations of Participants by Site

<table>
<thead>
<tr>
<th>Position</th>
<th>Originating</th>
<th>Remote</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cert. Nurse Asst.</td>
<td>4</td>
<td>26</td>
<td>30</td>
</tr>
<tr>
<td>Medicine Tech.</td>
<td>1</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Lie. Pract. Nurse</td>
<td>0</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Regist. Nurse</td>
<td>7</td>
<td>15</td>
<td>22</td>
</tr>
<tr>
<td>Nurse Admin.</td>
<td>2</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>17</strong></td>
<td><strong>101</strong></td>
<td><strong>97</strong></td>
</tr>
</tbody>
</table>
Procedures

The Missouri League for Nursing (MLN) provided the Infection Control program for health care providers in the area in cooperation with the Missouri Interactive Telecommunications Education (MIT-E) Network. The interactive television classrooms were located in a rural, mid-Missouri college and four rural mid-Missouri high schools. The topic for the workshop was Infection Control Update. The instructor had presented similar topics to groups of health care providers and was thoroughly familiar with the material. The afternoon session was prepared for, but not limited to, nursing assistants, medicine technicians, and licensed practical nurses. The evening session was prepared for, but not limited to, registered nurses and nursing home administrators. The actual on-line instruction time was approximately 60 and 100 minutes respectively. The instructor was given instruction in the use of the interactive television classroom equipment and was given an opportunity to practice on the equipment before the workshop.

Instrument

The instrument used to collect data was the Interactive Television Participant Questionnaire (ITPQ), adapted from an assessment tool which was developed by Hackman and Walker (1990) for students enrolled in CU-Net (University of Colorado-Colorado Springs Interactive Television System) in 1988 and 1989 (Hackman & Walker, 1990). The questionnaire was adapted to be appropriate for a workshop rather than a course and for the MIT-E Network system. Data were collected from participants at the end of each workshop.

The Cronbach coefficient alpha reliability coefficient was .92 for each of the verbal and nonverbal immediacy behavior sections for the data collected for this study. Research data were analyzed using a one-way analysis of variance (ANOVA) procedure to determine significant
differences between the participants at the originating site and the remote sites for verbal immediacy behaviors of the instructor, nonverbal immediacy behaviors of the instructor, perceived learning, satisfaction with the ITV classroom, satisfaction with the workshop, and satisfaction with the instructor. The alpha level was set at .05.

Findings

A one-way analysis of variance (ANOVA) related to the first question (see Table 2) revealed a significant difference between the scores of the participants at the originating site and the remote sites for verbal immediacy behaviors of the instructor as measured by the Interactive Television Participant Questionnaire (ITPQ) \( F = 4.35, (1, 95), p = .04 \). The participants at the originating site scored verbal immediacy behaviors higher than the participants at the remote sites.

The analysis revealed a significant difference between the scores of the participants at the originating site and the remote sites for nonverbal immediacy behaviors of the instructor as measured by the ITPQ \( F = 4.40, (1, 95), p = .04 \). The participants at the originating site scored nonverbal immediacy behaviors higher than the participants at the remote sites.

The analysis revealed no significant difference between the scores of the participants at the originating site and the remote sites for perceived learning as measured by the (ITPQ) \( F = 0.54, (1, 93), p = .46 \). Participants perceived they learned whether they were at the originating or the remote sites.

The analysis revealed no significant difference between the scores of the participants at the originating site and the remote sites for satisfaction with the interactive television classroom as measured by the ITPQ \( F = 0.20, (1, 92), p = .66 \). Participants’ satisfaction with the ITV classroom was not determined by site.
Table 2

**Analysis of Variance for Dependent Variable**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of squares</th>
<th>Mean Squares</th>
<th>F Value</th>
<th>p &gt; F</th>
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<tr>
<td>Verbal</td>
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<tr>
<td>Model</td>
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<td>614.27</td>
<td>614.27</td>
<td>4.35</td>
<td>.04</td>
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<tr>
<td>Error</td>
<td>94</td>
<td>13260.89</td>
<td>141.07</td>
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<td></td>
</tr>
<tr>
<td>Total</td>
<td>95</td>
<td>13875.16</td>
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<tr>
<td>Nonverbal.</td>
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<td></td>
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<tr>
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<td>250.85</td>
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<tr>
<td>Error</td>
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<td>5358.89</td>
<td>57.01</td>
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<td></td>
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<tr>
<td>Total</td>
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<tr>
<td>Learning</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
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<td>1.26</td>
<td>1.26</td>
<td>.54</td>
<td>.46</td>
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<tr>
<td>Error</td>
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<td>212.62</td>
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<td>Total</td>
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</tr>
<tr>
<td>Model</td>
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<td>0.13</td>
<td>0.13</td>
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<td>.66</td>
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<tr>
<td>Error</td>
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<td>0.67</td>
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<td>Total</td>
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<tr>
<td>Sat 2</td>
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<tr>
<td>Model</td>
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<tr>
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<td>Total</td>
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<td></td>
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<tr>
<td>Sat 3</td>
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<td>Total</td>
<td>94</td>
<td>244.80</td>
<td></td>
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</tbody>
</table>

Alpha = .05
The analysis revealed no significant difference between the scores of the participants at the originating site and the remote sites for satisfaction with the workshop as measured by the ITPQ ($F = 0.73, (1, 95), p = .39$). Participants’ satisfaction with the workshop was not determined by site.

The analysis revealed no significant difference between the scores of the participants at the originating site and the remote sites for satisfaction with the instructor as measured by the ITPQ ($F = 1.43, (1, 94), p = .23$). Participants’ satisfaction with the instructor was not determined by site.

Conclusions

Based on the findings of this study, the following conclusions were drawn:

1. Participants at the originating site perceived that the instructor used more verbal immediacy behaviors than participants at the remote sites.
2. Participants at the originating site perceived that the instructor used more nonverbal immediacy behaviors than participants at the remote sites.
3. Participants at both the originating and the remote sites perceived positive and similar learning outcomes.
4. Participants at the originating site and the remote sites had similar and positive perceptions about the ITV classroom, the workshop, and the instructor.

Discussion

The ITV classroom instruction provided distance learners with an experience which closely emulates live classroom instruction. Walker and Hackman (1992, p 81) found that “direct face-to-face contact with instructors and interpersonal rapport with other class participants were less important than the amount of information transmitted in distance education courses.” The results of this study supported this finding.
This study focused on perceived learning and satisfaction of participants who attended a one- or three-hour continuing education program in an interactive television classroom. The impact the physical presence of the instructor had on perceived learning and satisfaction in the workshop was an important issue. The interactive television classroom proved to be a successful medium for the continuing education workshop. Participants perceived learning and satisfaction were similar whether at the originating or the remote sites. Participants felt the instruction addressed their needs and that the instruction was a worthwhile investment because they could understand and apply the information gained. Participants were not threatened by the instructor or the instruction. These results support Manteuffel’s (1982) findings.

Holmberg (1989) believed that intellectual experiences were enhanced by face-to-face communication between the participant and the instructor. That issue has merit, although participants in the workshop perceived they learned and were satisfied although they apparently did not perceive they had a face-to-face conversation with the instructor. The findings related to the verbal and nonverbal immediacy behaviors of the instructor in this study did not support Gorham’s (1988) findings that verbal and nonverbal aspects of communication strongly impact students’ satisfaction.

While the background of participants varied somewhat between the originating and remote sites, the findings did not indicate that this influenced the results of the study. The perceived difference between originating and remote sites on verbal and nonverbal immediacy behaviors can more likely be explained by use of equipment rather than the type of preparation of participants. The instructor received information concerning the implementation of a class using the interactive television system, but did not have the opportunity to teach on the system before the workshop. The dynamics
of the interactive television setting for instruction differs from traditional classroom instructional setting, making it necessary to employ different strategies to improve effectiveness. The instructor was not familiar with many of these strategies and most were not possible to attain in the workshop setting. Some of the strategies involve getting to know the participants and treating all participants as if they were all in the same room.

Verbal and nonverbal immediacy behavior questions proved to be reliable with a Cronbach alpha reliability coefficient of .92. The participants’ responses at the originating site and the remote sites indicated a significant difference in how they viewed the instructor’s verbal and nonverbal immediacy behaviors related to asking questions, encouraging participation, using humor, gestures while talking, and smiling at individuals. The participants’ responses were more positive at the originating site than at the remote sites. However, the verbal and nonverbal immediacy behaviors might not have been significantly different among the sites if the instructor had been more experienced in use of the technology in the ITV classroom. The instructor should be thoroughly familiar with the equipment and the interactive television system to be able to utilize the interaction aspects to their fullest. Overall, the positive perceptions of satisfaction with the information presented and the learning which resulted from participation in the workshop suggest that the ITV approach is a viable procedure for delivering continuing education to a professional audience.

References


