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PREVIEW

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**Teaching nursing by interactive television: Interaction and
evaluation**

Rheiner, Jo Ann Green, Ph.D.

The University of Nebraska - Lincoln, 1991

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PREVIEW

**TEACHING NURSING BY INTERACTIVE TELEVISION:
INTERACTION AND EVALUATION**

by
Jo Ann Green Rheiner
A DISSERTATION

**Presented to the Faculty of
The Graduate College in the University of Nebraska
In Partial Fulfillment of Requirements
For the Degree of Doctor of Philosophy**

**Major: Interdepartmental Area of
Psychological and Cultural Studies**

Under the Supervision of Professor Roger H. Bruning

**Lincoln, Nebraska
December, 1991**

DISSERTATION TITLE

TEACHING NURSING BY INTERACTIVE TELEVISION;

INTERACTION AND EVALUATION


BY

Jo Ann Green Rheiner

SUPERVISORY COMMITTEE:

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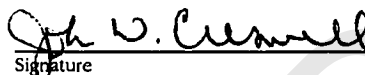
12/2/91

Roger H. Bruning
Typed Name


Signature

12/2/91

Robert Brown
Typed Name


Signature

12/2/91

John Creswell
Typed Name

Signature

Kenneth Orton
Typed Name


Signature

12/2/91

Toni E. Santmire
Typed Name

Signature

Typed Name



TEACHING NURSING BY INTERACTIVE TELEVISION:
INTERACTION AND EVALUATION

Jo Ann Green Rheiner, Ph.D.

University of Nebraska, 1991

Advisor: Roger H. Bruning

The purpose of this study was to investigate some aspects of interaction that took place in a nursing course delivered simultaneously to three campuses by interactive television. Student perceptions about the experience, student achievement, teacher and course evaluations, and student learning style were examined for possible relationships. Comparisons among the three campuses were made. When teaching takes place by television, teacher-student interaction changes both for students who receive classes by television and for those who are with the teacher in the originating classroom. It is important to understand what these changes are, how students perceive them, and how the changes may affect the learning process.

Senior students in a baccalaureate nursing management course were the sample in this comparative descriptive study. The sample included three groups: 17 students in an on-campus classroom and two TV classrooms with 20 and 24 students. Direct observation of classroom interaction took place; other variables were measured by questionnaire.

Students in the classroom with the teacher spoke three times more frequently than students in either of the television classrooms. Students in all classes expressed discomfort about using microphones. In the two TV classrooms, students spoke among themselves considerably more than students in the on-campus classroom. Concerns about interaction were expressed by many students in all classrooms, who indicated that they felt less involved than in a traditional class and felt they could not learn as well. Students were disturbed by technical and organizational problems that occurred during class.

Analysis of variance (ANOVA) revealed no significant difference on examination scores among the three groups. Student learning style preferences were identified by the Kolb inventory; ANOVA indicated that students who preferred involvement with people achieved significantly lower scores than did students who were more task oriented. Discussion of findings includes emphasis on the need for resources to support careful planning for television delivery and suggestions that may enhance interaction in television courses.

DEDICATION

To the late Sharon Swift, friend and colleague.
Her generous cooperation made collection of much
of the data for this study possible.

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CHAPTER I

INTRODUCTION

"Distance learning is a generic descriptor that encompasses nearly every form of learning outside of direct classroom contact" (Wallin, 1990, p. 259). **Distance learning**, also called **distance education**, refers to situations where students and teachers are not in direct contact with each other, but communicate by other means. Methods commonly used for such instructional communication include correspondence, video and audiotapes, television (TV), and computers. Most distance learning courses not only provide instruction for the students but also include some method for student feedback (Ely, 1981).

Value of Educational Television

The **traditional** college student usually is described as one who enrolls within a year or two after completing high school and attends full time. The term **non-traditional** generally refers to students who are over 25 and attending college part-time. Most non-traditional students are employed, and many are married and have children. In 1987, 40% of all college students were over 25 and over half of the students enrolled in higher education were attending part-time (Brock, 1987). Distance education was initially seen by colleges as a method of addressing the needs of non-traditional students who have limited access to educational

offerings, usually because of distance from the learning source, but also often because of time (Carl & Densmore, 1988).

Television has a long history as a medium for the delivery of education to distant students. Awareness of its potential contribution to economical instruction for academic institutions is growing in these times of financial constraint; utilizing television, one faculty member can teach multi-section courses simultaneously on a single campus or reach several classes in a multi-branch university (Stern, 1986-87). For some learning tasks, television and/or videotape may in fact be the best method available, and may help accomplish objectives effectively and in innovative ways. For example, in response to concerns for animal welfare, television makes it possible for individuals to participate vicariously in laboratory experiments without the use of live animals (Wetzel, 1987-88).

Also, television can provide students with opportunities to hear and interact with experts in various fields (Brown, 1988). As our society becomes more pluralistic, television may help students gain greater cultural understanding by allowing diverse groups of students to communicate with each other (Dede, 1990). Television also can facilitate presentation of interdisciplinary courses (Guri-Rozenblit, 1990).

For these reasons, the college population receiving television courses no longer is composed primarily of non-traditional students, but has become much more diverse. Now the distant student may be any student who receives a class by television.

Factors in the Television Learning Process

Numerous studies indicate that students receiving instruction by television perform just as well as those who receive the same instruction in a traditional classroom (Carl & Densmore, 1988; Chu & Schramm, 1979; Whittington, 1987). Investigations of student perceptions about television courses show that, while students generally find these courses to be acceptable, they report feeling constraints about participating in discussion (Barron, 1987; Collins & Murphy, 1987) and are uncomfortable using microphones to talk to teachers. Students in television classes frequently express concern over lack of interaction between teachers and themselves (Graham & Wedman, 1989; Jewell, 1990; Wergin, Boland, & Haas, 1986).

Clark (1983) argues that studies of television and other educational media suggest that the media themselves have no influence on learning. The media are simply conveyances that deliver the message, and "do not influence student achievement any more than the truck that delivers our groceries causes changes in our nutrition" (p. 445). Students' perceptions about the different media may affect

their learning behavior, however, and lead them to believe their performance has been affected.

Teaching and learning are largely communicative processes. Regardless of the exact nature and structure of the class, these processes normally involve some type of face-to-face interaction between teacher and students. Although this direct interaction is changed when teaching is done by television, the fact that a change occurs is less important than its possible effects on students in terms of their attitudes toward the learning situation and their learning behaviors. In addition, the students' own learning characteristics may affect their perceptions and behavior (Clark, 1983; Ostmo, Van Hoozer, Scheffel, & Crowell, 1984; Salomon & Clark, 1977).

Most investigations of instructional television have been directed toward student performance, with some efforts to determine student attitudes. Recent studies of student beliefs about the educational value of different media have revealed a need for research in a new direction (Clark, 1983); the need is just beginning to be addressed by research into the affective and social effects of education provided by media over an extended period (Dede, 1990). Little attention has been given to the communication that actually occurs when classes are taught by television or to the possible relationship of student learning characteristics with their perceptions of the television

experience. Therefore, this study focused on selected aspects of the communication that occurred when a nursing class was simultaneously delivered to three campuses by interactive television. Possible relationships among the students' perceptions of the experience, their learning characteristics, and achievement were also explored.

Educational Television Systems

The University of Iowa is credited with the first work in educational television (ETV) in the 1930s. Texas had the first channel licensed exclusively for educational television in 1953, and by 1967 more than 140 ETV stations were operating in the United States (Wallin, 1990). The Public Broadcasting System anticipated that 250,000 students would enroll in that system's college courses in 1989 (Turner, 1989). By 1990, over 500,000 students in the United States were earning college credit through various kinds of television (Wallin, 1990).

Educational television is by no means limited to the United States. Canada has an extensive ETV system (Wong, 1990), and ETV programming is reported from such diverse locations as the Netherlands (Beishuizen & van Putten, 1990), Poland, China, and the Soviet Union (Wallin, 1990).

Some educational television delivery systems are large and complex. That used by the University of MidAmerica, for instance, serves a consortium of eleven institutions in seven states (Brock, 1987). Programming by the State

University of New York encompasses three entire networks (Stern, 1986-87). A much smaller system serves a group of rural school districts in southeastern Iowa, and one of the smallest television networks in the United States is centered at Eagle Bend, Minnesota (Jones, 1985). There are also many closed circuit systems that may reach schools in a single district, several branches of one college, or classrooms in a single building.

Television is now used for a great variety of college courses. Undergraduates receive such diverse content as freshman English (Jewell, 1990), introductory accounting (Carl & Densmore, 1988), nursing (Boyd & Baker, 1987), and criminal law (Porter, 1983). Graduate course content includes engineering (Wergin, et al., 1986), medicine (Denton, Clark, Rossing & O'Conner, 1984), library science (Barron, 1987), and teacher education (McCleary & Egan, 1989).

Educational television typically operates with two different kinds of programming. Network educational television (NET) usually produces high-quality programs which are carefully planned and produced. Network educational television can include both programs of general information or interest and courses for college credit. Use of satellites now allows these programs to be transmitted over a wide area. Anyone who tunes into the network can

watch them, of course, but credit requires enrollment in the university providing the course.

Closed-circuit television (CCT) has much more limited availability and tends to be more specifically focused in subject matter. It generally is restricted to students in a single educational institution or consortium and deals with specific courses. Production planning may be minimal. Some courses are quite polished, while others simply consist of the transmission of a lecture that would be given to students in a conventional classroom. Many times the class is actually presented to a group of students at the campus and simultaneously transmitted to one or more other locations. A common variant of this approach is to provide videotape copies of the lecture, either as the primary delivery method or to provide some alternative choice for students.

The first television classes were one-way, that is, they were transmitted in one direction only--from instructor to viewers at other sites. This method is still in use, but over the past two decades two-way, or interactive television (ITV), has become common. When the term **interactive** is applied to television transmissions, it means that viewers at the distant locations and persons at the originating broadcast site can speak to each other during the telecast by means of microphones or telephones. In some systems,

people at the originating end can also see those who are receiving their message.

Importance of Interaction in the Learning Situation

The terms **communication** and **interaction** are used somewhat interchangeably in the literature, and in this paper. They refer to the inter-relationships and interdependency of people, events, and objects in the interactive television experience being explored in this study. The words **interaction** and **communication** are used here in the context explained by Saloman (1982, p. 16): "the underlying assumption that people's behaviors, dispositions, and the environmental contexts, messages and events with which they deal mutually influence each other." Interaction (and communication) assumes that some interdependency exists, that occurrences and people have effects on each other, and thus that some reciprocity exists in all communication processes. Reciprocity exists even in the absence of an observable response from the person toward whom a message is directed. Following this premise, we can expect that students' attitudes toward television classes will be affected by many things in the situation, for example, by teachers, classmates, whether they receive the course by television or are in the classroom with the teacher, some of the mechanics of the system, and other factors. In turn, the teachers can be

expected to respond to students' behaviors and to the constraints of the medium.

Some of the ways the system is utilized may be adjusted during a course in response to needs or problems identified by teachers or students. This view of the interaction process assumes that interdependency is the usual situation in the teaching-learning process.

In a static society, the definition of teaching as that of providing a knowledge or skill may be acceptable. In our continually changing environment, however, the goal of education must be not only providing content, but also stimulating the ability and desire to continue to learn, grow, and adapt. Carl Rogers discussed these ideas in 1967, saying "the goal of education is the facilitation of change and learning" (p.2). Since that statement was written, society and knowledge have changed at an ever-increasing rate. In nearly every curriculum, some content will be changed by the time a student completes that educational program.

Rogers (1967) emphasized that facilitation of learning, which differs from transmission of content, depends primarily on factors in the interpersonal relationship between the teacher (facilitator) and the student. Rogers cited studies both in his field of psychotherapy and in education to support this statement.