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THE RELATIONSHIP BETWEEN VALUE ORIENTATIONS AND THE PERCEPTION OF MEDIA UTILIZATION IN THE CLASSROOM BY UNIVERSITY PROFESSORS

By

Cynthia Lucena-Roman

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ABSTRACT

THE RELATIONSHIP BETWEEN VALUE ORIENTATIONS AND PERCEPTION OF MEDIA UTILIZATION IN THE CLASSROOM BY UNIVERSITY PROFESSORS

by

Cynthia Lucena-Roman

Purpose

The major purpose of the study was to determine if value orientation variables were related to the decision of using instructional media in the classroom by university professors. The study tends to clarify, on the basis of value orientations, why some instructors adopt media into their classrooms, while others stop using it, or do not use it at all.

Procedure

The broader question this study intended to answer was: to what degree do value orientations relate to the adoption of instructional media in the classroom by university professors?

Using this question as a frame of reference, five hypotheses were developed:

1. Variation in time orientations are related to the unversity professors' perceptions of their instructional media utilization in the classroom.

2. Variations in man-nature orientations are related to the university professors' perceptions of their instructional media utilization in the classroom.

3. Variations in activity orientations are related to the university professors' perception of their instructional media utilization in the classroom.

4. Variation in relational orientations are related to the university professors' perception of their instructional media utilization in the classroom.

5. Variation in dominant value orientations are related to the university professors' perception of their instructional media utilization in the classroom.

The Medical Sciences Campus professors of the University of Puerto Rico were used as the population from which the sample was drawn. A total of 125 subjects were randomly selected, the rate of participation was 72 percent.

To test the hypotheses two instruments were administered to each of the professors. The Olivers' Q-Sort Value Orientation Instrument was used to measure the value orientations of the professors. The Use of Media Questionnaire was used to obtain descriptive data about the professors' perceptions of their frequency of media use in the classroom.

The scores obtained from both instruments were submitted to Pearson product-moment correlation to test the relationship between value orientations and the frequency of media use. A two-tailed test was performed to test the hypotheses at a .05 level of significance.

Findings

Four negative value orientations correlations were significantly related with the frequency of media use

categories. These were the relationships between:

1. Being in becoming and the very common media category

2. Collateral direction and less common media category

3. Transitional dominant value orientation and less common media category.

4. Transitional dominant value orientation and very common media category.

Four value orientation correlations were significantly related to the total frequency of media use score. The total frequency of media use was:

1. negatively related with the being in becoming direction

2. positively related with the doing direction

3. positively related with the lineal direction

4. negatively correlated with the transitional dominant value orientation.

The majority of the correlations were not statistically significant. This could be explained by the fact that the majority of the media used by the professors did not require major changes in teacher adoption behavior and teaching styles, since the professors used the instructional media as an aid or supplementary to the teaching process. It seems that media used in this way do not interfere with the value orientation of the professors. Further research should be conducted to test the relationship between value orientations and acceptors or rejectors of new educational media.

To my family

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CHAPTER I

INTRODUCTION

The Commission of Instructional Technology reported in 1972 that technology touches only a small fraction of instruction. In this report Robert W. Wagner stated:

> In American schools and colleges today the major source of instruction other than the teacher in person is the book, plus such immemorial accessories as charts and black boards... All, film, filmstrip, records, programmed text, television, and computer programs do not fill more than five percent of these classroom hours (p. 23)

The situation in Puerto Rican Universities is similar. Educators are not using the available instructional technology as they should (Rios, 1979). In our institutions, instructional technology is supplementary to the text book and the teacher. Norman Kurland (1973) has suggested that if the teacher and textbook were eliminated the educational system would be transformed, but if all instructional technology were eliminated education would go on without hardly missing a lesson.

Persons working with instructional technology have wondered why instructional media has not had an impact in Puerto Rican institutions. A review of the literature reveals several barriers as reasons why educational technology has not had the expected impact. Rose, (1983) indicated that to encourage educators to consider the use of

instructional technology systems, a preliminary step would be to discover existing barriers that cause hesitancy and reluctance on the part of teachers. Then attempts can be made to overcome the barriers.

One of the major reasons for the resistance and hostility toward the use of instructional technology may come from individual educators. Study of the internal factors that may inhibit professors in using more media in their classrooms, could clarify and help understand the resistance to instructional media. This investigation attempted to determine if a relationship exists between the value orientation of university professors and the acceptance of instructional technology in their classrooms.

Problem

Reluctance to use instructional media in the classroom has been observed among many university professors. Some research has been conducted in this area to investigate the relationship between personal characteristics and/or administrative deterrents and the use of instructional media in the classroom. However, little research has been done in the area of value orientation variables and the use of instructional media.

This study attempted to find out the relationship between value orientation variables and the frequency of the use of instructional media in the classroom by university

professors. The effect of values need to be studied more intensively as a determining variable influencing human behavior.

ELABORATION OF THE PURPOSE OF THE STUDY

Human beings develop their systems of values through a process of socialization and communication. These values influence their behavior within the different situations in which they interact, including the acceptance of new ideas. Meierhenry (1966) states that:

> A number of studies including some in primitive cultures, have indicated that there are a number of conditions related to the acceptance of a new idea. In general, the greater the number of lines of contact and communication with an external culture the greater the likelihood of acceptance of new ideas (p. 489).

In other words an open culture is more susceptible to the promotion and acceptance of change than a closed one. Cultures with closed systems tend to be rigid with a traditional value orientation, while cultures with open systems tend to have a more modern value orientation and accept new ideas sooner. The same idea could be applied to individual, communities and school systems.

The purpose of this study was to test if value orientation variables were related to the decision of using instructional media in the classroom. The study intended to clarify, on the basis of value orientation, why some instructors incorporate media into their classrooms, while others stop using it, or do not use it at all. The

assumption was that such knowledge could help the media professionals in their strategies to introduce or induce professors to use instructional media in their classrooms. Media professionals have to consider that educational institutions and individuals are susceptible to cultural restraints, traditions, and limitations of society. Therefore, in order to promote change and encourage the use of instructional technology they need to remain sensitive to the beliefs, attitudes, ideologies, and traditions of the educational establishment and the individual (Van Wyck, 1971).

LITERATURE SUPPORT FOR THE STUDY

Research in the field of values suggests that there is a close relationship between the value system of an individual and the rate of adoption of an object or idea. Rogers (1962) indicated that one of the five characteristics that affects the rate of adoption is the compatibility of an innovation with its planned environment. The compatibility of an innovation depends on the degree to which it is consistent with existing values and past experiences of the individual adopting the idea or object. It has been suggested by Evans (1965) that when studying the relationship between compatibility of an innovation and rate of adoption, the individual level as the unit of analysis should be used. He has stressed the importance of

collecting empirical data where the problem of the adoption rate is looked upon from the individual, rather than the institutional level of analysis.

Evans suggested that although the structure of the social system is important in the study of the adoption rate, more emphasis is needed on the individual role within the social system. According to him, the social system governs and is governed by the behavior of the individual. He stated that it would be difficult to discuss the system without making reference to the characteristics of its members. In other words, the behavior of an individual should be examined within the social structure in order to find explanation for the hostility towards innovations.

Evans asserts that:

> A more psychologically directed understanding of the individual within the system, provides an added dimension of understanding which could contribute significantly to the predictability of innovation acceptance, or rejection behavior. This could be achieved, for example, by probing more deeply into individual frames of references, values, and attitudes in respect to a particular innovation proposed for a university (1965, p. 144).

From assertions like those of Evans's and others, it can be concluded that there is a need for more research concerned with the adoption problem from the individual level of analysis. Toward meeting this need this study is designed to investigate how individuals' value orientation affect their use of instructional media in the classroom

environment. No empirical research was found on values as they relate to the adoption of media in the classroom. However, several research studies were found in the area of value orientation and the adoption of agricultural practices. In general the main finding in the research in the agricultural field were that those individuals with traditional value orientations tend to reject the use of new agricultural practices, while those individuals with modern value orientations tend to adopt new agricultural practices (Ramsey, 1957; Chattapahhyay, 1967; Singh and Sohal, 1974).

It was the intention of this study to find if the empirical findings and conclusions about the relationships between value orientations and adoptions found in the agricultural field are similar to the ones that may be found in the relationship between value orientation and the adoption of instructional media.

VALUE OF THE RESEARCH TO THE FIELD OF EDUCATIONAL TECHNOLOGY

This study could be relevant to the development of educational technology in Puerto Rico. Rios (1979) asserts that instructional media has not been effectively implemented in the educational process, neither has the systematic approach to educational technology been well established. Although institutions have invested great quantities of money in equipment, and teachers verbally endorse the use of technological resources in education, the

incorporation of instructional media in the classroom has been low and non-systematic. This study will be relevant to the understanding of university professors' reluctance to incorporate instructional media into the classroom. Studies have been conducted in the United States to investigate the variables which intervene in the use of instructional media in the classroom (Bakri, 1983; Larry, 1983; &Ittelson, 1978). However they did not study the value orientation variables.

If the data from this study support the hypothesis that value orientations of university professors of Puerto Rico are related to the incorporation of instructional media into the classroom, the information from this research could be used in the development of communication strategies in emphasizing the use of instructional media. Since this study will help understand intracultural variations, the communication strategies should be adapted to the different value orientations found among university professors.

The results of this research could be of great value for the implementation of attitude change activities to promote the use of instructional media in the classroom. The data should provide a deeper understanding of the individual frames of reference that could help in the predictability of innovation acceptance or rejection behavior, and also to anticipate the need for some

activities to provoke attitude change in a favorable direction to the use of instructional media in the classroom (Evans, 1965). To illustrate this point Evans indicated that an individual's attitudes towards a particular item could be changed when a person is involved in a forced compliance situation. Forced compliance is when an individual commits himself to behave in a manner inconsistent with his attitudes or beliefs. In his study, a group of pro-TV and anti-TV professors participated in an instructional program using television as the educational tool. The results demonstrated that attitudes tend to shift in the direction more favorable to the medium.

In summary this study was thought to be of value in the development of the Educational Technology Field because:

1. The problem of the reluctance to use instructional media in the classroom is studied from a new perspective: the role of value orientation toward the use of instructional media in the classroom. This could provide information for understanding and clarification of the problem.

2. The information derived from the study can be used in the development of communication strategies in emphasizing the use of the instructional media in the classroom.

3. The study may provide data which can be relevant in developing attitude change activities promoting the use of instructional media among those university professors who are reluctant to use it.

THEORETICAL AND CONCEPTUAL FOUNDATIONS

The central assumption of this study is that value orientation is a determining factor in university

professors' behavior toward the use of instructional media in the classroom. The theoretical conceptualization of this study used as a frame of reference the positions of Rokeach (1968), Sikula (1971), and Kluckhohn (1961).

In the area of values as a behavior determinant, Sikula (1971) suggested that human behavior should be described by internal and external factors. Some of these internal and external factors are:

Internal	External
objectives (goals)	governmental
values	social
needs	economic
drives	technological
tensions	spiritual-ethical

According to Sikula, other variables could be added to these lists. He postulates that the "key elements involved in the understanding of motivated behavior are values, and value systems." The other factors, although important, are considered by him either too broad or too narrow in scope. He concluded that the study of values to understand human behavior is very important at the individual, group, and organizational level. Sikulas's position was supported by Sheib (1970) when he stated that "what a person does (his behavior) depends upon what he wants (his values) and what he considers to be true or likely (his beliefs)" (p. 1).

Rokeach (1970), also emphasized the importance of the study of values in the understanding of human behavior and actions. He commented that:

> It is difficult to conceive a human problem that would not be better illuminated if relevant and reliable value data concerning it were available. Differences, for example, in culture, social class, occupation, sex, religion, or politics are equally translated into questions concerning differences in underlying value and value systems (Rokeach, 1970, p. 1).

Values not only influence behavior but are standards also for selecting and judging appropriate actions for the resolution of situations (Kelly, 1972, p. 2). Williams (1969) explained that when an individual had conceptualized his values, the values perform as if they constituted grounds for decisions in behavior. He postulated that because of different value systems "men do prefer some things to others; they do select one course of action rather than another out of a range of possibilities" (p. 284). This is similar to what Rokeach (1968) has stated: "once a value is internalized, it becomes consciously or unconsciously a standard of criteria for judging actions" (p. 16).

Kluckhohn and Strodtbeck (1961) agreed with the theory that values influence actions and behavior. They postulated that a particular value orientation of an individual is the basis of principles that give order and direction to the overflowing stream of human acts, thoughts, and that they

guide, channel or direct behavior. They believe that:

> It is possible on the one hand to say that a person who has a particular order of value orientations will give a predominant position to a particular behavior (or more probably to a particular combination and ordering of spheres) and on the other hand to state that the predominance of a particular behavior sphere is indicative of a particular ordering of value orientation (Kluckhohn and Strodtbeck, 1961, p. 29).

Students of innovations have postulated that value orientations are believed to influence the process of adoption and that values may serve as criteria in deciding among alternatives (Ramsey, 1959; Rogers, 1962; Evans, 1965; and Singh & Sahal, 1974). It has been postulated that "values may serve as factors which foster rapid diffusion... or they may serve as barriers to the diffusion process" (Ramsey, 1954, p. 35).

Studies in the field of agricultural innovation have tested this postulate. These studies have found significant relationships between value orientations and the adoption behavior of farmers (Ramsey, 1954; Bose, 1962; Chattopadhyay, 1967; Singh & Sahal, 1974).

Using as a framework the literature cited, the inference for this study was that value orientation systems may be related to individual behavior and serve as standards in the decision making process. Due to this inference, it is further assumed that to understand or explain why teachers incorporate media into their classrooms, it is necessary to observe or analyze their value orientation

systems.

DEFINITION OF TERMS

In this study the researcher was not concerned with the ontological status of values as a concept, nor with the description of Puerto Rican cultural values. The following definition of value is given for the purpose of clarification and understanding of the concept:

> A conception explicit or implicit distinctive of an individual or characteristic of a group, of the desirable which influences the selection from available modes, means, and ends of actions (Kluckhohn, 1951, p. 395).

The preceding definition is compatible with Baker's definition, which states that value:

> Is identified with broad fundamental orientations toward life...They are preferences that serve to integrate as well as to guide and channel activities in functionally important areas of life (Baker, 1964, p. 743).

The value orientation concept has been defined by Kluckhohn as a:

> Generalized and organized conception, influencing behavior, or nature, of man's place in it, of man's relation to man, and of the desirable as they relate to man-environment, and interhuman relations (Kluckhohn, 1951, p. 411).

The next set of concepts to be defined are those concerned with value orientation areas and directions. The value orientation definitions summarized by Oliver (1964, pp. 8-9) from Kluckhohn's study (1961) are the following:

A. Man-nature Orientation : The attitude of man toward nature

designations. Three value directions will be investigated.

1. Subjugated to Nature : Man believes that there is little or nothing a man could do to avoid nature designations. Natural processes are accepted as inevitable.

2. Harmony with Nature : There is no real separation of man, nature, and supernature. One is simply an extension of the other, and a conception of wholeness derives from their unity.

3. Mastery Over Nature : Natural forces of all kinds are to be overcome and put to use by human beings.

B. Time Orientation : The cultural interpretation of the temporal focus of human life. Three directions will be studied.

1. Past : Attention is given to past events or experiences. This orientation places primary emphasis upon the maintenance, or the restoration of the past.

2. Present : Little attention is given to what has happened in the past, and the future is seen as both vague and unpredictable.

3. Future : Emphasis is placed on the future--a future which is anticipated to be better.

C. Activity Orientation : It is the modality of human activity giving

rise to a value orientation system. The range of variation in solutions suggested for it is the three-fold one, of Being, Being in Becoming, and Doing.

1. Being : Orientation toward the release and indulgence of existing desires. In this orientation, the preference is for the kind of activity which is a spontaneous expression of what is considered to be given in human personality. It is a non developmental conception of nativity.

2. Being in Becoming : The activity which has as its goal, the development of all aspects of the self as an integrated whole.

3. Doing : Its most distinctive feature is a demand for the kind of activity which results in accomplishments that are measurable by standards conceived to be external to the acting individual. The aspect of self-judgment or judgment of others which determines nature or activity is based mainly upon a measurable accomplishment achieved by acting upon persons, things, or situations.

D. Relational Orientation : Man's relation to other men. This orientation has three sub-divisions.

1. Lineal : Here, a group of goals are primary and one of

the most important goals of the group is continuity through time. Continuity of the group through time, and ordered positional succession within the group, are crucial issues when lineality dominates the relational system.

2. Collateral : This calls for primacy of the goals and welfare of the laterally extended group. The group in this case is always moderately independent of other similar groups, and the problem of a well-regulated continuity of group relationship through time is not highly critical.

3. Individuality : Here, individual goals have primacy over the goals of specific Collateral or Lineal groups.

Other concepts relevant to the study is that of instructional media and frequency of media use:

> Devices of materials that can be used for instructional purposes together with the teacher, textbook, and blackboard, such as television (video tapes), films, overhead projector (transparencies), slide projectors, cassette recorders, filmstrips, computers and the other items of hardware and software (Internationale Zentralistitute, 1973).

The frequency of media use is used in this study as a measure of adoption of media in the classroom by the university professors.

RESEARCH QUESTIONS

The specific research questions were derived from the following broader question:

> To what degree do value orientations relate to the adoption of instructional media in the classroom by university professors?

This research postulates a relationship between value orientation and the adoption of instructional media in the classroom by university professors. Using this postulate as a frame of reference, the specific questions investigated were the following:

1. What is the relationship between time orientation and the use of instructional media in the classroom by university professors?
2. What is the relationship between man-nature orientation and the use of instructional media in the classroom by university professors?
3. What is the relationship between activity orientation and the use of instructional media in the classroom by university professors?
4. What is the relationship between relational orientation and the use of instructional media in classroom by university professors?
5. What is the relationship between dominant value orientations and the use of instructional media in the classroom by university professors?

LIMITATIONS OF THE STUDY

The study is limited to data collected on faculty members of the Medical Sciences Campus of the University of Puerto Rico. The experiences of the professors of this

campus may be unique, and not generalizable to other universities. However, it is assumed that the study findings and implications, can be of value to institutions with similar characteristics.

SETTING

ORGANIZATION OF THE UNIVERSITY OF PUERTO RICO

The University of Puerto Rico is a multi-unit university system, state-supported, consisting of three campuses: The Rio Piedras Campus located at Rio Piedras, the Mayaguez Campus located at Mayaguez; and the Medical Sciences Campus located at Rio Piedras; three four-year colleges located at Aguadilla, Arecibo, and Humacae, and regional colleges located at Bayamon, Carolina and Ponce administered by the Administration of Regional Colleges. It is a co-educational and bi-lingual university system offering graduate, first professional, five-, four-, and two-year programs, with more than 50,000 students, 3,000 faculty members, and approximately 7,000 administrative personnel.

The main administrative and regulatory divisions are:

1) The Council on Higher Education which is the governing body of the University of Puerto Rico.
2) The President, which is the executive director and official representative of the University System.

3) The University Board, which its essential function is to maintain the integration of the University system and advise the President.
4) The Chancellors and Directors. They exercise administrative and academic authority in their institutional units according to the provisions of the University Law and other university regulations.
5) Administrative Boards. They act as the consulting organisms of the Chancellors.
6) Academic Senates. The Senates constitute the official forum of the academic community for discussion of the general problems of the University and other matters of their concern.

Medical Sciences Campus

The Medical Sciences campus consists of five faculties or schools, which are: School of Medicine, School of Dentistry, School of Health-Related Professions, Faculty of Biosocial Sciences, and Graduate School of Public Health and College of Pharmacy (See Appendices A and B).

The Medical Sciences campus has the following administrative and regulatory offices:

1) Office of the Chancellor
2) Planning Office
3) Budget Office

4) Office of External Resources

5) Information Systems

6) Research

7) Division of Continuing Education

8) Office of the Dean for Academic Affairs

9) Office of the Dean of Students

10) Office of the Dean of Administration.

EDUCATIONAL TECHNOLOGY PROGRAMS IN THE MEDICAL SCIENCES CAMPUS

The educational technology services are under the Deanship of Academic Affairs. The Deanship of Academic Affairs office was organized to provide coordination and integration among the various faculties and units of the campus and the university system in manners pertaining to accreditation visits, development of the new academic programs, curricular revision, continuing evaluation of the academic programs and faculty development.

The Division of Audiovisual Communications, the library, and the Registrar's Office are under the administrative supervision of the Dean for Academic Affairs (See Appendix C).

In order to implement the goals and objectives of the Academic Affairs Office, division units and coordinating committees have been organized. Two of the divisions dealing with educational technology are the Division of Educational Development and the Division of Audio-visual

communication. In addition to these divisions, the Library, and each school has its own material and audiovisual equipment.

Division of Audio Visual Communication

The mission of the Division of Audio-Visual Communication is to provide audio-visual services to the educational and investigative tasks of the school of the Medical Sciences Campus. The services provided by the division include:

--The circulation and distribution section, which lends, delivers and operates all types of audio-visual equipment throughout the campus.

--Production and reproduction of instructional materials relevant to curriculum, investigation and publications

Photography:		slides and photos, microphotography, motion picture.
Printing	:	reproduction of material referent to curriculum, administration, investigation brochures, posters, television, flip cards and others.
Graphic arts	:	medical illustration, posters, signs, paste up compositions, and others.

Television : has two video and audio recording services studios, one with black and white remote operating camera and a full color studio.

A close circuit television net covers the amphitheaters in the main campus building, the pathology laboratories and the conference rooms of the municipal and industrial hospitals.

The objectives of the division are to:

--promote the knowledge of the use of audiovisual communication techniques

--train the faculty in the use of modern audiovisual communication techniques for the teaching activity

--stimulate the design of audiovisual teaching products with the purpose to improve the communication between professors and students.

--provide the necessary services for the activities of the campus.

The services of the Audio-visual Communication division should be requested by filling an application form. This application form is in each of the Schools and Deans offices. Also the applicant should go directly to the

Audio-Visual Division to ask for service and advice. If a production is requested the applicant should get in contact with the division to properly planify the product and go through the instructional design steps. The division will assist and advise the faculty in the preparation of the libretto and the visual aids of the production.

Division of Educational Development

The Division of the Educational Development has four sections: Curriculum Development, Faculty Development, Educational Technology, and Computer in Teaching and Research. The mission of the division is to facilitate the accomplishments of the policy of the Medical Sciences campus by means of actions that promote the development of an environment receptive to innovations, use of technology, continuous education and systematic evaluation.

The division was created to carry out the following functions:

--To coordinate faculty development in the fields of education and academic administration with the various units of the Medical Sciences campus.

--To assist the faculty in the identification, analysis and solution of instructional and learning problems.

--To inform the faculty about innovations and experiments on the instructional and learning process.

--To assist the faculty and administration in the development of new academic programs.

--To promote the use of educational media in the instructional process.

--To coordinate with the various faculties the continuous assessment of academic programs, methods of instruction and faculty development activities.

--To facilitate the maximum use of educational resources available in the Medical Sciences campus.

--To develop plans for the systematic evaluation of educational programs in accordance with the information needs of the academic community.

--To develop and implement a faculty development program in the area of education evaluation.

--To collect and disseminate materials dealing with the topic of educational evaluation in the health sciences.

--To collect, analyze and provide information regarding the progress and effectiveness of academic programs of the Medical Sciences campus.

The objectives of the Curriculum and Instructional Development section are geared at training the faculty providing technical assistance, collaborating in the development of educational projects and disseminating information regarding innovative approaches in the teaching of the health sciences.

The objectives of the Educational Technology section are:

1. To offer workshops, courses and seminars to orient the faculty in the area of educational technology.
2. To assist the faculty in the development of educational activities.
3. To collaborate with the faculty in the development of educational and audio-visual resources.
4. To facilitate and coordinate the utilization of human resources that could help the faculty in the development of activities and educational materials.
5. To assist and advise the faculty in the evaluation of the activities and materials developed.

Some of the activities performed by this area are done in coordination with the Audio-Visual Communication Division.

The Computer in Education and Research was initiated during the 1984-85 academic year in conformity with the plan for the development of the Division of Educational Development. Specific objectives for the area of computers in education included the organization of a center for Computer Assisted Instruction, the implementation of a Computer Literacy Program for the faculty of the Medical Sciences campus, the promotion of activities, dissemination

of relevant materials, and the provision of technical assistance to help the faculty use the computer as an innovation strategy for instruction.

The mission of the program of Computer Literacy is to develop in the faculty and students skills in the use of computer in the area of education and investigation. Essentially the program consisted of:

a) capacitation workshops

b) orientation to the faculty

c) technical assistance

d) conferences

e) demonstrations

The Center of Computer Assisted Instruction offers its services to the faculty and graduate students. It is an important element in the promotion of the use of the microcomputer in teaching and research. The Center was inaugurated in December, 1984.

The objectives of the Center are:

1) to promote the use of computers in teaching, investigation and evaluation.

2) to patronize the development of conferences, talks, demonstrations, and other educational strategies that focus on the utilization of computers for teaching, evaluation, and investigation.

3) to promote the design and use of computer

programmed units (Computer Assisting instruction).

4) to allow the users to run programs of useful application to the academic environment.
5) to offer advice in the use of microcomputers and programming.
6) to provide assistance in the development, use, implementation and evaluation of special projects.
7) to provide an appropriate place where persons can independently or under the tutoring of training personnel, practice and use the microcomputers.

Library

The Audiovisual Resource Center is located in the library. The Center provides to the faculty and students the audiovisual software such as slides, films, cassettes and videocassette programs.

CHAPTER SUMMARY AND ORGANIZATION OF THE STUDY

This chapter presented an overview of the problem and purpose of the study. This investigation focused on the reluctance of professors to use instructional media in the classroom. The purpose of this study was to test if value orientation variables were related to the decision of using instructional media in the classroom.

The broader question under study was:

To what degree do value orientations relate to the adoption of instructional media in the classroom by university professors?

The inference for this study was that value orientation systems are related to individual behavior and serve as standards in the decision making process. Due to this fact it was further assumed that to understand or explain why teachers incorporate media into their classroom, it is necessary to observe and analyze their value orientation system behavior.

The subsequent thesis report will be written in four more chapters--Chapter II will report the findings of the literature review. Chapter III explains the research design and methodological procedures followed in the investigation, Chapter IV reports the findings of the study, and Chapter V will present the summary, conclusions, and recommendations for further research.

CHAPTER II

REVIEW OF LITERATURE

The literature areas reviewed for this research were:

1. Media utilization studies and articles.
2. The theoretical and conceptual area of adoption of innovations and studies concerned with the relationship between value orientation and the adoption of ideas or objects.

Media Utilization Literature Review

There are many factors that inhibit the use of instructional media. The findings of the investigations that study such factors will be reviewed because they present all the sides by which the problem of the reluctance to use media have been studied. These studies serve to define the parameters of what is currently known and therefore what remains to be known in the issues under investigation.

In the following paragraphs the reader will find several barriers and/or factors that inhibit the use of media in the classroom and the findings of the literature review for each of the barriers listed.

Attitude Toward Instructional Media

One of the factors that have been mentioned that have an effect on the use of audiovisual materials is teacher attitude toward audiovisual material. Kelly (1960) stated that "the attitude that the teacher holds regarding the use of audiovisual materials will greatly affect the success of any audiovisual program" (p. 119). In her study she found a highly significant relationship between teachers' attitudes toward audiovisual material and the frequency with which they use them in the classroom. She recommended that persons involved in teacher training should be concerned about the importance of attitudes when encouraging teachers to use audiovisual material. Kelly found a high degree of relationship between attitude toward audiovisual materials and satisfactory experience with their use. She explains that individuals tend to repeat those experiences that are satisfying. Thus, when persons have unsatisfactory experiences with audiovisual material, this will have a negative effect on teachers' attitudes toward their use.

Swineford (1959) suggested that attitude could be an obstacle in the use of audiovisual aids. For example, teachers might feel that audiovisual resources are all right for other grade levels but not for those which they teach. Teachers have a negative attitude toward the planning arrangements that have to be done if audiovisual materials are to be used properly. Also, teachers react emotionally

to equipment and materials. Teachers think that audiovisual materials and equipment are monsters "which may turn on them at any time, usually when it hurts most" (p. 19).

Leader and Null (1974) found that teachers who believed in the use of audiovisual materials in the instructional process and in the motivation for learning, utilized more films. While Soremekum (1979) found that academic staff believed that there was no need for educational technology since lectures were performed adequately without it. "The class and classroom are seen as domain of authority, where the teacher exercises complete control" (p. 25).

Miller (1957) indicated some attitudinal factors as barriers for the use of media; these were: 1) fear of being replaced by instructional film; 2) teachers finding it difficult to use a competitive medium in addition to their voice; 3) the idea that pictorial materials are an inferior medium and are only needed by poor teachers with low grade students; and 4) the impression by teachers and students that media is for diversion rather than for learning.

Based in the research reviewed in this section it could be concluded that the attitudes that professors hold toward audiovisual materials relate to the use of media in the classroom. Teachers that have positive attitudes toward media tend to use media more than those with negative attitudes.

Lack of Audiovisual Training

Swineford mentioned (1959) that the quality and variety of experiences provided in teachers' courses is another factor that affects the use of instructional materials. He explains that teachers need to have a personal and direct first-hand experience in manipulating and operating the equipment.

This agrees with one of the conclusions of Leader and Null's study (1974). They found that teachers who had service training in media and who were familiar with the operation of audiovisual equipment used significantly more films.

King (1967) studied the relationship of training and experience of teachers, to their utilization of instructional media. The data for the study were obtained from twenty secondary schools in Missouri that were identified as having the most exemplary audiovisual programs in the state. He concluded that having exerienced instruction by an instructor who utilized media effectively affected the frequency with which secondary school teachers utilize media.

In 1983 Sibalwa conducted a study to determine the effect that training, experience and availability have on the use of instructional media in the classroom by preservice teachers. Sibalwa found "that interaction among

types of experience and availability [of media] does not affect the use of instructional media during student teaching" (p. 101). He found that formal coursework in instructional media was significantly related in the use of portable television and television broadcasting in the classroom. He also found that "level of experience with various media was significantly related to the use of those items in the classroom" (p. 102). Sibalwa concluded that "preservice teacher's education (formal or informal) in instructional media is important in developing skills and understanding" (p. 103).

To summarize, the findings of studies that investigated the relationship between audiovisual training and the use of media indicate that a lack of audiovisual training is a deterrent in the use of audiovisual materials in the classroom.

Administration and/or Administrators of Instructional Media

In a position paper written by Richards (1974) he suggested that one of the reasons why instructional technology is not being employed as its proponents would like is that in some colleges the role of director of the instructional technology department is ambiguous.

> On the one hand, many of them are trained to lead faculty in the best uses of educational communication. On the other hand, most of them seem to act as service people, either de facto or by their own choice...Most directors seem to depend on a personal one to one

> approach--and they really do not have much time for that (p. 48).

Richards suggests that another reason for the under-use of instructional technology is that institutional leaders are not leading. He explains that the leaders do not focus faculty's attention on the potentials inherent in the use of instructional technology and do not identify teaching and learning deficiencies that instructional technology could help to remedy by its use.

Rose (1982) has indicated the existence of some administrative and institutional barriers to the use of instructional media; these are:

- --Administrator and communication specialist oversold the technologies.
- --Sometimes a forced situation emerges where administrators may feel educators must use the system.
- --Lack of rigorous evaluation of results of the use of educational technology.
- --No plans are demanded for using nontraditional educational technologies.
- --The role of the communication specialist may be ambiguous.

Duttweiler (1983) has expressed that the present governing structure support the traditional organization of education. For an optimum use of educational technology

"change in attitude and/or organization within the schools will be necessary" (p. 37). Soremekum (1974) also found that the organizational structure reinforced the traditional bureaucratic patters and that educational technology was seen as an exception to the rule, and that bureaucracies do not easily tolerate exceptions to the rule. Soremekum recommended that new organizational and administrative structures need to be created for "success in gaining full potential of recent advances in science and technology to dramatically improve learning" (p. 218).

Other administrative causes, frequently mentioned in the literature that inhibit the use of instructional media are those that come from the administration of the audiovisual program per se, like the following: 1) the administrative provision for audiovisual resources for example the lack of good coordination and administrative channels (Swineford 1959), 2) lack of information of audiovisual sources (Hubbard 1960), and 3) inefficient systems for circulation of material and equipment (Stephens 1971).

In general, the review of the literature in this area tends to indicate the existence of some administrative and/or administrators factors that could inhibit the use of audiovisual materials. Some of the factors mentioned were that the role of the directors of instructional technology is ambiguous; the present governing administrative structures

support the traditional organization of education; lack of good plans, coordination and administrative and communication channels; and inefficient administrative systems of circulation of materials and equipment.

Availability of Instructional Media

Leader and Null (1974) studied the relationship between utilization of film and the situational and personal variables of teachers. For this study a sample of 1,306 teachers served by the Wabash Valley Education Center in Indiana was used. They found that:

1. The location of the school in relation to the center was not a factor in the utilization of films.
2. Teachers who perceived that a number of films were available used significantly more films.
3. Teacher's perception of availability and appropriateness of audiovisual material tended to utilize more films in their classrooms.

Curtis (1979) collected data from 100 high school teachers representing eight areas of vocational-technical schools in Central Pennsylvania. One of the purposes of the study was to investigate the interrelationship between teachers' attitudes toward instructional resources and resource utilization and availability. The results indicated that the teacher group generally had a more

favorable attitude toward print and non-print traditional instructional resources and displayed less favorable attitudes toward more progressive instructional resources.

Curtis found a significant positive relationship between resource use and availability of the 25 resources that were examined and between attitude and some of the resources examined. He concluded that each resource available to the teacher should be examined individually relative to the teacher's attitude. In addition, he indicated that the "extent to which an instructional resource will be used depends upon the extent to which it is available for use by the teacher" (Curtis 1979, p. 39).

Ittelson (1978) investigated the factors that affect the use of instructional media by faculty in several arts colleges. Faculty's perception of the availability, reliability and convenience of the use of audiovisual equipment was called in this study the confidence factor.

The results of the study showed that the confidence factor was not the sole determinant of audiovisual equipment use, but it was the strongest and was statistically significant. Ittelson suggested that administrators "should provide a system of audiovisual support which instills a high degree of confidence among faculty" if they wish to increase the use of audiovisual equipment and materials.

Sibalwa (1983) found that the availability of seven

media items: television, broadcasts, instructional television, overhead projector, and opaque projector, were related with the use of these instructional media. Those subjects indicating high availability of the media items reported significantly higher use of them than those indicating low availability of these media in their teaching assignments.

The findings of the research in this area tend to indicate that the availability of audiovisual materials is related to the use of media. Those teachers that perceived high availability of media use them more than those that perceive low availability.

The Educators

Several researchers have studied educator's characteristics to see if there exists some relationship between their characteristics and the use of instructional technology.

The researchers refer not to the external factors that influence the teacher to reject or accept instructional media, but to those internal factors such as feelings and personality traits. Other educators' characteristics that have been studied were sex, age and years of teaching experience.

Different conclusions have been found in the relationship between personal characteristics, such as sex,

age and years of experience, and the use of instructional media. For example: Leader and Null (1974) and Parks (1977) found that these characteristics do not affect the degree of film utilization while El-Hmaisat (1985) found significantly positive relationship between use of instructional media and teacher's age and years of experience.

Rose (1982) indicated that one of the major barriers to the use of instructional technology comes from the individual educator. She suggested that some educators know little about the potentials of modern technologies and do not care to learn, or they may lack an understanding of its relevance to learning objectives. Additionally, the educator may prefer the personal involvement of the old teaching pattern, or may have concerns over the time required to use media or be worried about potential failures in using the new method with his/her students.

Usually, teachers complain that instructional technology takes too much time. Faculty expressed that they need more released time for the planning and development of materials (Stephens 1971; Larry 1983). Teachers who perceived that there is sufficient time in the instructional period for films tended to use them more (Leader and Null 1974).

In 1969 Grant conducted a study to investigate certain personality characteristics of teachers who were classified

as acceptors or rejectors of the newer educational media. He believed that some personality characteristics may be preventing teachers from using educational materials and equipment that are available to them. The subjects of the study were 253 secondary teachers working at seven school buildings sites visited by the Wisconsin Audiovisual Education Demonstration unit.

He found that both male and female acceptors were more dominant, aggressive, ready to change, whereas both male and female rejectors were more receptive to the leadership of others, working well under friendship and dependence upon others.

A study of the relevance of teacher personality to the acceptance and utilization of audiovisual media was conducted by Norsted (1970). The data for this study was obtained from Cattell's Sixteen Personality Factors Questionnaire and an Audiovisual Utilization Questionnaire. The instruments were administered to 478 classroom teachers of Osseo, Minnesota. Norstead found that:

1. The teacher who exhibits a high degre of audiovisual utilization is more likely to be an elementary teacher who is adaptable, open, but who tends to be group-dependent...

2. The self-sufficient, aggressive teacher does not rate high on A-V media usage...

3. There is no evidence to indicate that new teachers are heavy on utilization of audiovisual materials. This indicates that audiovisual is more dependent on the conditions in the school district rather

than on recency of formal training.

Hudspeth (1966) studied the relationship between opened and closed-mindedness and attitude toward the use of instructional media. The study used two faculty groups, one group identified as users of graphic and another group that used graphics less than ten times during the 1964-65 academic year. The two main instruments used for the study were Rokeach's Dogmatism Scale and the New Educational Media Attitude Inventory.

The study found that the scores from the belief system instrument correlated with scores from the educational media attitude instrument. In other words, those open-minded faculty tend to be favorable in their attitudes toward educational media. The study did not indicate however that the fauclty identified as graphic users were significantly more open-minded in their belief system, than those who were not graphics users.

To summarize, the findings of these studies are inconclusive. Significant relation has been found between educators internal characteristics but these relationships tend to be contradictory. For example, Grant (1969) found that male and female acceptors of media were more dominant, aggressive, ready to change and that male and female rejectors of media were more receptive to the leadership of others, working well under friendship and dependence upon others. While Norstead found that teachers who are

adaptable, open, and group dependent use more media than those teachers that are self-sufficient and aggressive.

Technological Barriers

Duttweiler (1983) suggested that the state of the art of instructional technology is inhibiting its progress. He argued that "there is the need for new courseware development tools and techniques" (p. 37). As a second barrier there is a lack of knowledge and skills. He gave computer skills as an example. He explained that teachers are trained to deliver instructions in a group setting situation and not by an individual tutoring method like the one used in computer education.

Rose (1982) has mentioned as technological barriers the following:

--Educators may feel incompetent if they don't have the skills to use technology.

--Educators may feel dependent on the functioning of the device, with no control over its possible failure.

--Educators consider it to be too much bother to make needed adaptations in order to properly use the technology and may have the feeling that technologies may be denigrated and perceived it as useless.

Moore and Hunt (1980) expressed that teachers usually prefer to control the learning environment because of fear of instructional technology.

> This view may be because the teachers have to manipulate the equipment and if it breaks down or malfunctions, the teacher could be humiliated in front

of the class (p. 45).

This could be corroborated with the finding of El-Hmaisat (1985). He found a significant moderate correlation between media use and teachers' abilities to operate media and produce materials. Also, in his study, teachers expressed the need for more technical assistance.

In general, the research reviewed tend to conclude that technological barriers such as lack of knowledge and skill in audiovisual equipment, fear to manipulate the equipment, and abilities to operate and produce media affect the use of media in the classroom.

Infrastructure Barriers

In a case study conducted in Nigerian Universities, Soremekum (1974) found that a factor affecting the development and use of instructional technology was infrastructure constraints. She refers to: improper reward systems, lack of adequately trained personnel, financial problems, inadequate building facilities, and a lack of appropriate and sufficient instructional resources (equipment and materials).

In terms of the inappropriate reward systems, Soremekum indicated that university emphasis "is placed on teaching (the transmission of knowledge), yet the criterion for reward (promotion or achievement) is evidence of research" (p. 219). This promotes the emphasis on the content to be

taught rather than the process of teaching and learning. She indicated that:

> Educational technology is perhaps in direct opposition to the basic university thesis, with reference to teaching. It is process oriented concerned with all elements in the teaching and learning process, rather than being product oriented (a concern only for what is taught). One can take this argument a bit further and say that learning, also, is secondary since no attempt is made to foster this process through improved methodologies and techniques (p. 219).

She indicated that while teachers involved in instructional development work are not allowed to claim credit for it, teachers that write books or do research are allowed to claim credit toward a promotion. She recommended that in order to promote quality teaching, universities must reward and give credit for teachers' innovative instructional work.

Similar statements have been made by Moor and Hunt (1980) in terms of the reward system.

> Good teaching, development of mediated techniques and faculty development programs are often praised and encouraged but in many cases not rewarded. Many college/university faculty perceive the attitude toward printed material as a basic consideration for promotion and tenure and are not encouraged to get involved with television or other instructional media. Faculty are reluctant to spend time on such activities when they may jeopardize chances for advancement and pay increase. Because the faculty reward system is based upon research and publication then it follows that until the use of and development of instructional media..., become part of the reward structure the use at the college level probably will continue to be quite low (p. 43).

Also Fraley and Vargas (1975) expressed the same preoccupation with the reward system. They explained that:

> ...today's teachers are frustrated, especially in

> higher education. Even while pressed to produce more and better learning, they exist in an institution reward structure that pays much better for research and publication than for good teaching.

Institutions and administrators are attached to traditional rewards structures instead of attacking the problem of institutional change. Administrators "have frequently entertained an assortment of diverse 'innovative' schemes which share only the property of noninterference in academic reward systems" (p. 5).

Another problem of the infrastructure is the lack of adequately trained personnel. Soremekum indicated that universities have more technicians and production personnel available than persons academically trained in education technology. She believes that it is the latter, who "could provide the necessary theoretical framework and expertise for the development of this area" (p. 20). Another aspect is that academic personnel tend to be highly inflexible in their job performances. The attitude associated with their role is that they work academically with their minds, not with their hands.

One of the obstacles for the use of instructional media has been its cost and that institutions lack adequate budget for this area (Hoban, 1949; Miller, 1951; Hubbard, 1960). Audiovisual materials are too expensive and require an expensive system to maintain the materials and equipment.

Rose (1982) indicated that institutional economy is one

of the barriers to the use of instructional technologies. She mentioned that:

--Funds are not available to buy and/or maintain equipment.

--Money is allocated into technology only when there is an urgent need for it.

--Institutions may not be willing to make the ongoing and continuous commitment required for production of innovative programs.

Moor and Hunt (1980) expressed that the cost of instructional media is high and this is one of the "most important factors that governs the adoption of any instructional medium" (p. 44). When the cost of technology is low the chances of adoption are higher. He indicated that "the adoption of large, complex media will be considered only after careful investigation even though the eventual cost per student may be low" (p. 44).

It seems that institutions will not allocate money for instructional media without an expressed urgent need for it (Richard, 1974). Richard indicated that rarely does an institution recognizes the existence of that need. What usually happens is that institutions use the money to maintain the tradition in the institution. He further states that: "even the infusion of governmental funds is no guarantee that educational technology will truly be institutionalized in a college" (p. 48).

Soremekum found data indicating that the majority of educational technology programs that she studied received

low allocations of money and low priorities. She explains that finance was identified in all case studies as a major cause of inefficient programmed operation. The concern was mainly the lack of finance for equipment and materials acquisition, maintenance and capital projects.

The physical facilities that are available in educational institutions are often inadequate (Hoban 1949; Miller, 1957). El-Hmaisat (1985) found that the lack of proper physical facilities and size of classrooms sometimes restrict the teacher from using media. Hubbard (1960) found that teachers frequently checked inadequate facilities as a major deterrent to the use of instructional media.

One of the obstacles, often mentioned in the literature, that inhibit the use of instructional material is the difficulty in obtaining the appropriate materials (Hoban, 1949; Miller, 1959). Miller pointed out that teachers have difficulties in finding and producing the material and that sometimes existing materials are obsolete and need a better way of presenting the subject matter.

Soremekum (1983) found similar problems in her case study:

> Curriculum materials are not available for many subject areas, indicating a lack of involvement in curriculum planning. To facilitate curriculum development a relevant and constant supply of instructional resources should be available. Resources could, in addition, be more fully utilized. However, existing resources need to be coordinated into a framework of an overall curriculum plan. Inadequate maintenance and repair

> often, however, results from the non-available of spare parts which is a major problem in all institutions. Catalogues list many items as available that are in reality out of order, damaged or non-existent.

To summarize several infrastructure barriers were discussed in this section. Improper reward system studies indicated that development of instructional technology is not part of the reward system of higher education and this may be preventing faculty to spend time in the activities of educational technology. In terms of lack of adequately trained personnel Soremekum indicated that there is the need of persons academically trained in educational technology since they are the ones who could provide the theoretical framework and expertise. The low allocation of money into the educational technology has been another factor mentioned as inhibitor to the use of media. Other infrastructure barriers are inadequate facilities and difficulty in obtaining appropriate materials.

Two investigations that included many problematic areas in the use of instructional media were conducted by Stephens (1971a, b) and Larry (1983). Stephens (1971a, b) investigated the problems which hinder the utilization of educational media in higher education. His purpose was to determine the deterrents to media utilization in higher education and to generate recommendations needed to alleviate the deterrents. The data for the study was collected by a questionnaire administered to 138 academic

deans, 390 faculty members, 150 media personnel, and 201 colleges and universities.

Stephens found that major deterrents to audiovisual utilzation included faculty lack of audiovisual knowledge and training; lack of knowledge of avaialble services; faculty overload; lack of appropriate materials, insufficient budget for the acquisition of audiovisual materials and equipment; resistance to change; inefficient system of circulation of materials and equipment; lack of organzation and planning in instruction, and inappropriate classroom facilities.

He found that faculty with more years of experience tended to utilize more media and perceive a higher percentage of major and moderate deterrent to the use of media. He also found that faculty from public colleges used media more often and perceived more deterrents than faculty from private colleges and universities. In terms of media utilization and perception of deterrents, he reported that faculty members who perceived major deterrents to utilization had higher utilization rates, while faculty in favor of media use, perceived the highest percentage of major and moderate deterrents. He found a positive correlation between media utilization and attitude toward instructional technology and between media utilization and perception of major deterrents. The more the faculty valued instructional technology, the more they used it.

Some of the major recommendations checked by the respondents to alleviate the major deterrents were:

1. to increase academic and audiovisual budget
2. to provide more and better classroom facilities design for media utilization,
3. to increase the variety of appropriate materials,
4. to provide more media personnel,
5. to provide for demonstrations and workshops,
6. to provide more equipment, and
7. to provide more release time for the planning and development of materials.

Larry (1983) investigated the deterrents associated with the utilization of audiovisual service: the relationship among faculty characteristics, attitude toward media, and frequency of media utilization; and he listed the recommendations to increase the utillization of audiovisual services. This study included 300 faculty members from the main campus of Purdue University.

The major deterrents affecting use of audiovisual services given by the respondent were:

1. Faculty overload (73%).
2. Insufficient academic department budget (66%).
3. Materials lack correlation with curriculum (52%).
4. Commercially produced materials are inappropriate (52%).

5. Materials are dated or obsolete (49%).

The five moderate deterrents most often selected by the faculty were: lack of training in media utilization; classroom inappropriately designed; lack of knowledge in applying media; difficulty in getting equipment when scheduled; and that faculty must give too much advance notice to receive service.

Larry further found that the most important changes selected by the faculty, which would have a major effect toward improving the audiovisual service were:

1. Provide more information on available services.
2. Improve communication between faculty and audiovisual personnel.
3. Inform new faculty of the available audiovisual services.
4. Increase audiovisual personnel to assist faculty.
5. Provide more how-to workshops and demonstrations.
6. Provide more equipment.
7. Provide better classroom facilities for using audiovisual media.
8. Leave learning equipment for loan in the classroom department.
9. Maintain more reliable equipment.
10. Schedule conferences and workshops to illustrate the use of media in different areas.

Adoption and Value Orientation Studies

Rogers (1965) defined adoption as a

> mental process through which an individual passes after first hearing about an innovation to final adoption (p. 76).

He explains that the adoption of innovations is an individual matter even though it may occur within a system. He views the adoption process as a type of decision making, explaining that it is the individual who makes the decision to adopt or cease using an innovation.

Rogers indicates that the adoption process could be broken down into stages. His model of the adoption process includes five stages: awareness, interest, evaluation, trial, and adoption.

Many investigations have been conducted to study Rogers' Adoption Process and to understand why some people adopt or fail to adopt innovations. Nevertheless, there still exists the need of "knowledge about variables that facilitate or impede the adoption of educational innovation" (Hall, 1974, p. 1).

One of the factors that have been mentioned in the literature that affect the adoption of an innovation is the values of the members of a society or organization and the social system.

Meierhenry (1966) stated that culture could affect the disposition of the individuals to accept or reject change. He indicates that in countries where culture had been

relatively stable it is difficulty to excite people to become interested in or concerned about new ways of doing things.

In any society there co-exists members with traditional, and with modern views. Rogers makes a theoretical distinction between two ideal types of norms: traditional and modern. He clarifies that these ideal types do not exist empirically, but "they provide tools for analysis and understanding of some dimensions" (p. 60). He indicates that these two terms are extremes on a continuum of innovativeness. Rogers postulates that:

> individuals in social systems with modern norms view innovations more favorably and are likely to adopt new ideas more rapidly than are members of traditional social systems. While the modernist welcomes change, the traditionalist resists the new (p. 61).

This section will report the findings of the studies that investigated the relationship between value orientation and the adoption of innovations. Only studies in the agricultural field were found. No study was found in the area of education.

The finding of the studies will be chronologically reported.

Hoffer and Stangland (1958) studied the relationship between "the attitudes and values of the farmer and his readiness to adopt an approved practice" (p. 113) in corn growing. The subjects for the study were 93 Michigan

farmers. They were asked to "respond to a series of statements or models about farmers and farming without reference to any value" (p. 115). The statements were judged to indicate: efficiency, willingness to take risk, progress, security, and conservatism.

The results were that the newer practices were adopted by a higher percentage of farmers who identified themselves with statements indicating efficiency. Also this relationship tends to exist with farmers oriented toward taking risk and making progress. Farmers who value conservatism and security tend to delay, or fail to adopt new practices.

Ramsey, Polson and Spencer (1959) hypothesized that value orientation related with: achievement, belief in science, efficiency and practicality, external conformity, material comfort and belief in progress, were positively related with scales that measure behavioral adoption and cognitive adoption. The value orientations hypothesized as negatively related to the two adoption scales were: familism, farming as a way of life, hard work, individualism, security, and traditionalism. The behavioral adoption scale relate to the use or adoption practices. In this case behavioral change can be observed. The cognitive adoption scale include the critical evaluation, knowledge and understanding of new practice innovations.

They found that:

1) Achievement was not related with behavioral adoption, but a statistically significant correlation was found with cognitive adoption. This "indicates that in the present sample, an orientation toward achievement is a factor in the cognitive aspects of adopting change items" (p. 39). An achievement oriented person "places a high importance upon choosing alternatives which will result in a high status position, bring self-respect, and respect and envy from others" (p. 39).

2) The science orientation was not related to behavioral adoption, but it was significantly related to the cognitive adoption scale. Farmers oriented toward science are more inclined to obtain information, to evaluate critically in terms of their own situation, and to adopt practice.

   The same relationship was found with the material confort value. While no relationship was found between it and behavioral adoption, the cognitive adoption was significantly related.

3) The value orientation of efficiency and practicality, external conformity, progress,

familism, farming as a way of life, belief in hard work and individualism, were not significantly related with behavioral or cognitive adoption scales.

4) Security orientation was negatively related with behavioral and cognitive adoption. The more security oriented the farmer were the less likely they adopt (p. 44). A security oriented person avoids taking risks he/she will use assured and predictable criteria in decision making. With cognitive adoption a curvilinear relation was found:

> the relationship may be described roughly as follows: at a low level of security orientation, practice adoption decreased consistently as security orientation increased; there was a leveling off adoption at the intermediate level of security orientation with a slight reversal of the negative relationship. At the high level of secuirty orientation, the negative relation was again observed (p. 44).

5) Traditionalism was found to have a significant negative relationship to behavioral and cognitive adoption.

To synthesize they found a significant, linear negative relationship between the behavioral adoption scale and the value orientation of security and traditionalism. Significant postive linear relationships were found between cognitive adoption scale with achievement, science, and material confort and negative relationships were found with

secuirty and traditionalism.

They concluded that "Value Orientations were more important as factors in change when the cognitive process were included than when only behavioral change was considered" (p. 46).

Bose (1962) postulated "that people with folk value systems would resist change in agricultural techniques and those with urban value systems would accept it" (p. 552). To test his postulate he conducted a study with 80 farmers from Baraset in West Bengal, India. He hypothesized that a positive correlation would be found between adoption of improved practices and business attitude toward farming, rationality and scientific attitude. He expected to find a negative correlation between adoption of improved practices and traditional outlook, religious inclination and familism.

He found that those farmers who farm as a business adopt new practices more. His results showed a significant positive relationship between adoption of recommended practice and rationality and scientific outlook. A significant negative correlation was found between adoption of recommended practice and tradition and religion. He found no significant relationship between adoption and familism.

He concluded that the value orientation of the people has a relationship to technological change and that people

with tradition-oriented folk-type values are more resistant to change than people with urban oriented values (p. 560).

In 1967 Chattopadhyay and Pareek investigated the relationship between multi-practice adoption behavior and three dimensions of value orientation, change proneness and level of aspiration. The three dimensions of value orientations were: conservatism-liberalism; fatalism-scienticism and authoritarianism-non authoritarianism.

Chattopadhyay and Pareek (1965) had compared their value orientation scale with that of Kluckholm and Strodrobeck:

> The dimension of conservatism-liberalism mainly represents the time orientation and partly the activity orientation. Fatalism-scienticism is a dimension of values in man-nature orientations. Relational orientation is represented by authoritarianism-no-authoritarianism (p. 10).

The purpose of their study was to locate some psychological variables that account for a large amount of variance in multipractice adoption behavior (p. 324).

They found significant negative relationships between multi-practice adoption behavior, as measured by an Adoption Quotient, and conservatism and fatalism. A positive relationship was found between adoption behavior and change proneness and level of aspiration.

> These results suggest that the more a person is change-prone and has higher levels of aspiration, and the more he is liberal and scientific in atittude (or the less conservative and fatalistic he is), it is expected that he will tend to have higher adoption quotient, and vice versa (p. 328).

The authoritarian value orientation was significantly related with adoption quotient. They found that an authoritarian person tended to be high on multi-practice adoption behavior. They expected to find the contrary.

They found that the two variables that contribute to about half of the variance in the regression analysis were conservativism-liberalism and fatalism-scienticism.

Moulik and Lokhande (1969) studied the relationship between value orientation of North Indian farmers of Delhi villages and the adoption of farm practices. Five value orientations dimensions were studied: conservatism-liberalism, fatalism-scientism, authoritarianism-non-authoritarianism, parochialism-cosmopolitanism and familism-individualism.

The data obtained from the values instrument was submitted to factor analysis. Two factors were found. Factor A, had a high loading in the value dimensions of parochialism-cosmopolitanism and fatalism-scientism. Factor B, had high loading in value dimensions of familism-individualism and authoritarianism non-authoritarianism.

They found that factor A was significantly

> and negatively related with farmers level of adoption, indicating that the more a farmer is modern with scientific and cosmopolite values, the more likely he is to adopt farm innovations (p. 380).

Factor B was "not significantly related with farmer's level of adoption, indicating that the innovativeness of a farmer

is not affected by his socially determined values" (p. 381), like authoritarianism-non-authoritarianism and familism-individualism.

Sarkar and Sen (1970) conducted a study to determine the relationship between the value-orientation of adopter and non-adopter categories of respondents and their adoption behavior. The value orientation dimensions selected for the study were fatalism-scientism, conservatism-liberalism, authoritarianism-non-authoritarianism, and cultural ethnocentrism-modernism. Adoption behavior was defined "as the decision to either try or to continue the use of the practice" (p. 15).

Sarkar and Sen found that all the value dimensions were "positively correlated with adoption behavior in [he] case of both adopters and non-adopters" (p. 16), but only the relationship between familism-scientism and adoption behavior of adopters and non-adopters were significant. The relationship between cultural ethnocentrism-modernism and adoption behavior was significantly in the case of non-adopters.

In 1971 Supe and Kolte conducted an investigation "to identify values related to the farm management functions and to see their relative effect on the adoption behavior of the farmers" (p. 9).

The five value dimensions measured in this study were:

1. economic motivation
2. scientific orientation
3. mental activity
4. independence
5. risk

The relationship found between the values and the adoption scores were:

1. a positive significnat relationship for economic motivation. This 'indicates that a large number of farmers who desire to earn more profits adopted more improved farm practices' (p. 13).

2. A positive significant relationship for the scientific orientation. 'A farmer oriented to this value is inclined to obtain more information, evaluate this information and finally adopt the practice' (p. 13).

3. A significant positive relationship was found for the mental activity orientation. This indicates that a large number of farmers who judge success in terms of planning adopted improved farm practices. Those farmers who thought hard work was the only method of solving problems are less prone to adoption (p. 14).

4. A significant positive relationship was found for risk preference. 'A farmer oriented to risk would be the first to accept change' (p. 15).

Supe and Kolte concluded that a farmer that is predisposed to rational values is more likely to adopt than a farmer that possesses non-rational values.

Singh and Sohal (1974) studied the human problems postulated by Kluckholm and Strodbeck: men-nature, time activity and relational orientations. To study the problems postulated by Kluckholm and its relation with levels of adoption, four dimensions of values were chosen: Fatalism-Scienticism, Present-Futurism, Passive-Activism, and

Familism-Individualism.

It was hypothesized that farmers belonging to the highly mechanized villages will have urban values (scienticism, futurism, activism and individualism) while farmers of less mechanized villages will be more inclined toward folk values (fatalism, presentism, passivism and familism).

Singh and Sohal found that "scienticism, individualism, futurism and activism have increased considerably in villages with higher economic development" (p. 2). Chi-square values were significant for all value components. The differences of pattern of increase were sharper in case of scienticism and individualism. Familism and fatalism values were stronger in subjects from less mechanized villages.

Summary

In the first part of Chapter II several factors were mentioned as inhibitors to the use of media. One of these factors is the attitude of teachers toward audiovisual materials. Teachers that have a positive attitude toward media use media more than those teachers holding a negative attitude toward media. Lack of audiovisual training is another deterrent to the use of audiovisual media in the classroom.

Some of the deterrents of audiovisual media found in the area of administration were: that the role of audiovisual directors is ambiguous; the present governing administrative structure support the traditional organization of educators; lack of good plans, coordination and administrative and communication channels; and inefficient administrative systems of circulation of materials and equipment.

The availability of media tend to be related to the use of media. Teachers that perceived high availability of media use them more than those that perceive low availability.

The findings of the investigations that studied the relationship between the audiovisual educator characteristics and the use of media are inconclusive. Significant relationships have been found between educator internal characteristics but these findings are contradictory.

The literature review tends to indicate that technological barriers such as lack of knowledge and skills in audiovisual materials and equipment and fear to manipulate the equipment affect the use of media in the classrooms.

Several infrastructure barriers to the use of instructional media discussed in this chapter were the following: improper reward system, lack of adequately

trained personnel, financial problems, inadequate building facilities and lack of appropriate and sufficient instructional resources.

In the second part of this chapter the finding of the investigations related with adoption behavior and value orientations were reported.

The results of these studies support the hypothesis that the value orientations of people have a relationship with adoption of new practices. In general they reveal that if a farmer is predisposed to rational values such as scientific orientation economic motivation, mental activity and risk preference, he is more likely to adopt innovations. While farmers with traditionally oriented values such as conservatism, security, and fatalism are more resistant to change and innovate.

Some contradictory results were found with the value orientations of individualism, authoritarianism, and familism. Ramsey, Palsom and Spencer (1959) and Supe and Kalte (1971) found a positive, although not significant, relationship between individualism and adoption they expected to find the contrary. Singh and Sohal (1974) found individualism significantly related with farmers of highly mechanized villages.

Chattopadhyay and Pareek (1965) found a positive, although not significant relationship between

authoritarianism and adoption behavior. They expected to find the contrary. Moulik and Lokhand (1969) found no significant relationship among the variables of authoritarianism and adoption behavior.

Ramsey, Palson and Spencer (1959), Bose (1962), and Moulet and Lakhande (1969) found that familism was not significantly related with adoption behavior. While Singh and Sohal (1974) found a strong familiar value orientation among subjects in less mechanized villages.

CHAPTER III

INTRODUCTION

Chapter Three presents the hypotheses and methodology of the study. The assumption underlying this study was that value orientation variables are related to the use of instructional media in the classroom by university professors. The primary analytical tool in testing the hypotheses was the Pearson-product-moment correlation coefficient.

Hypotheses

The alternative hypotheses investigated in the research were:

1. Variation in time orientations are related to the university professors' perceptions of their instructional media utilization in the classroom.

2. Variations in man-nature orientations are related to the university professors' perceptions of their instructional media utilization in the classroom.

3. Variations in activity orientations are related to the university professors' perception of their instructional medial utilization in the classroom.

4. Variation in relational orientations are related to the university professors' perception of their instructional media utilization in the classroom.

5. Variation in dominant value orientations are related to the university professors' perception of their instructional media utilization in the classroom.

These hypotheses have as a frame of reference the value orientation model used by Oliver (1964) based on Kluckhohm and Strodtbeck studies (1961). Oliver postulated that:

> Every society has noticeable intracultural variations in value orientations among different sub-cultural groups, that each sub-cultural group has a dominant profile of value orientations which directs the behavior of its members in order to achieve homogeneity in the solution of human problems...For example, in time orientation some sub-culture groups may be strongly oriented towards the future, others toward the past or present...While some sub-cultural groups are oriented toward subjugation to natural forces, others prefer activities which allow mastery over these forces. While some groups value hard work and achievement, others consider effort as a means to an end rather than an end in itself...With respect to relational orientations...some sub-cultural groups value rigid authority, while others value individual and flexible authority (p. 47).

The assumption underlying Oliver's value orientation model (see Table 1) is that different groups of people vary in their rank ordering of preference for the alternative in the solution of the four crucial problems assumed by Kluckhohm and Strodbeck (1961), i.e., man-nature, time, relational, and activity orientations. These preferences are considered to be valuable predictors of human behavior. For comparative purposes, the model illustrates ideal types of individuals, based on value orientation (Oliver 1964).

The three ideal typologies or clusters of the model are seen in Table 1 (Oliver p. 49).

Table 1

Typologies Related to Value Orientations

Clusters	Time Orientations	Man-Nature Orientations	Activity Orientations	Relational Orientations
I Modern	Future	Mastery over nature	Doing	Individual
II Transitional	Present	Harmony with nature	Being in Becoming	Collateral
III Traditional	Past	Subjugated to nature	Being	Lineal

In Oliver's model, ideal types of professors could be constructed based on the assumption that certain characteristics would cluster around different value orientations. This study assumed that by studying the different value orientations of university professors it can be answered why some of them adopt instructional media in the classroom while others are reluctant to use it.

Based on the model, it was postulated that a professor's man-nature, time, relational, and activity orientations affects his view of the world, and as a consequence, his or her frequency of use of instructional media in the classroom. The hypothesis tested by this research was that university professors with value orientations toward the future, mastery over nature, doing, and individual, would be more prompt to use instructional media than professors oriented towards the past, subordinated

to nature, being and lineal.

Research Population and Sample

Description of the Population

The sample was drawn from among the professors of the Medical Sciences Campus of the University of Puerto Rico. The Medical Sciences campus has five colleges which are: School of Medicine, School of Dentistry, School of Health and Related Professions, Faculty of Biosocial Sciences, The Graduate School of Public Health, and the College of Pharmacy (see Appendix A). Each one of these colleges has various academic programs, which are listed in Table 3.

The faculty of the Medical Sciences campus, had 722 faculty members distributed among the schools mentioned above from which 587 were full-time professors. The faculty hold academic ranks of Associate, Assistant, and Full Professor, as well as Instructor. The distribution according to rank and sex of the full time faculty are presented in Table 2.

Faculty members are expected to maintain high performance in their teaching and research tasks. Participation of the faculty in institutional governance is made possible through several means. Among these are faculty and institutional level committees, and faculty participation in the continuing evaluation of the academic programs (University of Puerto Rico, 1983).

Table 2

Distribution According to Rank and Sex of the Full-Time Faculty

Classifications	Sex		Total
	M	F	
Professor	40	12	52
Associate Professor	93	52	145
Assistant Professor	154	120	274
Instructor	45	71	116
		Total	587

Table 3

Academic Programs Offered by Each College

College		Program
School of Medicine	:	Doctor of Medicine
	:	Graduate Programs in Biomedical Sciences
		Anatomy
		Biochemistry and Nutrition
		Pharmacelogy and Toxicology
		Physiology
		Microbiology and Zoology
		Graduate Program in Clinical Sciences
School of Dentistry	:	Doctor of Dentistry
	:	Graduate and Post-Graduate
	:	Programs in Clinical Sciences
	:	Oral Surgery
	:	Pedodontics

Table 3 (continued)

College of Health and Related Professors	:	Graduate Program
		Nursing
		Speech-Language Pathology
	:	Post-Baccalaureate Programs
		Health Educational
		Nursing
		Medical Technology
		Nuclear Medicine and Ultrasonic Techniques
		Physical Therapy
		Occupational Therapy
		Speech-Language Pathology
		Animal Health
	:	Associate Degree Programs
		Dental Assistant
		Opthalmic Technology
		Radiologic Technology
	:	Undergraduate Certificate Programs--Dental Hygiene
Faculty of Biosocial Sciences and Graduate School of Public Health	:	Health Services Administration
	:	Nutrition
	:	Public Health Education
		Environmental Health
	:	Public Health
	:	Evaluation
College of Pharmacy	:	Baccalaureate

The 587 full-time faculty members were distributed among various schools as indicated in Table 4.

Table 4

Distribution of Full-Time Faculty by Colleges

College	Total of Faculty Full-Time	Percentage
College of Medicine	371	63
College of Dentistry	75	13
School of Health and Related Professions	82	14
Faculty of Biosocial Sciences and Graduate School of Public Health	39	7
College of Pharmacy	20	3
Total	587	100

Procedure and Justification

A stratified random sample of 125 subjects was drawn from among colleges of the Medical Sciences campus. The stratified random sampling method was used in this study in order to obtain a representative sample from the population. It was not intended to compare different strata, but the purpose was to obtain proper representation of each stratum.

The initial sample selected of 125 subjects represented 21% of the full-time faculty members. Twenty one percent was considered by Abdul Habile (1985) as sufficient to satisfy the statistical procedures used in studies like this one. The number of professors selected from each college is indicated in Table 5.

Table 5

Number of Subjects Selected From Within Each College

College	Raw Number	Percent
College of Medicine	79	63
College of Dentistry	16	13
School of Health and Related Professions	17	14
Faculty of Biosocial Sciences and Graduate School of Public Health	9	7
College of Pharmacy	4	3
Total	125	100

The list of the professors from each of the Colleges was used to select the sample. A table of random digits (Glass and Stanley, 1970) was used to select the sample from within each of the lists.

Instrumentation

Value Orientation Instrument

The instrument used to measure the value orientations among university professors was the Value Orientation Instrument developed by Oliver (1964) (see Appendix D). This instrument is similar to the one developed by Kluchohm and Strodtbeck (1961), but after being pre-tested many value items were modified to improve validity and reliability within the Puerto Rican context. The instrument has four value orientation areas and three alternatives or value

directions for each area. The areas and directions are:

Areas	Directions
1. Time Orientations	a. Past b. Present c. Future
2. Man-nature Orientations	a. Subjugated to b. Harmony with c. Mastery of
3. Activity Orientations	a. Being b. Being in becoming c. Doing
4. Relational Orientations	a. Lineal b. Collateral c. Individual

The instrument consists of 48 value statements-twelve for each area divided into three value orientations, with four statements for each value direction (see Appendix D).

The Q-methodology was used to sort the answers of the instruments. The Q-methodology is defined as:

> A technique for dealing with objects or statements. It is a method of ranking attitudes or judgments and is particularly effective when the number of items to be ranked is large. The procedure is known as Q-sort in which cards or slips bearing the statements or the items are arranged in a series of numbered piles...The respondent is asked to place a specific number of items on each pile usually on the basis of an approximately normal or symetrical distribution (Best 1971, p. 11).

The professors evaluated the 48 value statements and sorted them into eleven piles ranging from those with which they agree least, to those with which they agree most.

Each professor was asked to read through each card in the deck. As they read a card, they decided how they felt

about its statement. They began sorting the cards into three piles: those they agreed with most were placed on the extreme right; those for which they had little opinion were placed in the middle, and the ones with which they disagreed most were placed at the extreme left side.

For example:

First Sort

Pile 1	Pile 2	Pile 3
(most disagreed)	(had little feeling for)	(agreed most)

From this first sort they divided the cards into eleven piles following the Q distribution indicated by the 11 blue cards provided for that purpose. These blue cards showed how the opinion cards should be sorted. For example, from the "disagreed pile" they took the two opinion cards that had statements with which they disagreed most and put them on the top of the rank 1 blue card. From the agreed pile they took the two opinion cards with the statements they agreed with most and put them on top of the rank 11 blue card. They continued in the same way until all the value statement cards were sorted and distributed according to the scale represented by the blue cards.

When they finished they had 2 cards on pile 1, 3 cards on pile 2, 4 cards on pile 3, 6 cards on pile 4, 6 cards on

pile 5, 6 cards on pile 6, 6 cards on pile 7, 6 cards on pile 8, 4 cards on pile 9, 3 cards on pile 10, and 2 cards on pile 11.

For this instrument the value statements should have the following distribution of Q scores.

	Q Distribution										
Frequency	2	3	4	6	6	6	6	6	4	3	2
Pile	1	2	3	4	5	6	7	8	9	10	11
	Agree least								Agree most		

This procedure resulted in raw scores for: 1) value area, 2) direction, and 3) dominant value orientation. The same scoring procedures used by Oliver (1964) was used in this thesis.

> The scoring procedures were based on weights assigned to value directions ranging from -1 for those favoring traditional orientations to +1 for those favoring progressive orientations. By multiplying the sort distribution scores by the assigned weight to each direction, the researcher was able to produce the scores on the total value orientation for each experiental subject (p. 84).

The procedures used by Oliver (p. 85) to produce the value scores are presented in Table 6.

Table 6

Value Scores Procedures

Time	Weight	Q-Sort Distribution	Total Value Orientation Score
A. Past T_{*3}	-1	_____	_____
B. Present T_2	0	_____	_____
C. Future T_1	+1	_____	_____
Total Time Orientation Score Trio			
*T = Time			_____

The procedure produces a set of scores for each value area, for each level and for the total value orientation of the respondents. The value scores were a compilation of a weighting scheme ranging for -1 to +1, and the location of the Q-value statements on the scale. By this combination a score on value orientations was produced for each professor participating as a subject in this study.

To illustrate the scoring procedures, Oliver (85-86) used a hypothetical case as an example. The time orientation direction was used in his example (Changes were done to adapt his example to this study). Here, professors were asked to respond to statements oriented toward three different ways of perceiving the world:

1. Favor the old ways of living and against social change (T_3).

2. Favor the old ways of living, but accepting change as something inevitable (T_2).

3. Take a stand highly favoring change as a social necessity (T_1).

To illustrate, assume that two professors are asked to respond to set of value statements. They are asked to sort each value statement, according to their level of agreement with it. One of the professors places all 4 value statements denoting a forward view, at the extreme right of the Q-scale. He also places all the items with a traditional view of the world at the extreme left. He will get a maximum score of +42.

Example:	Agrees Most	Agrees Least
	2 x 11 = 22	2 x 1 = 2
	2 x 10 = 20	2 x 2 = 4
	42	6

Another professor places the traditional items at the extreme right and the forward items at the extreme left. He will also get a score of 42, but indicating a different direction in his orientation to time (42 x -1 = -42). He would categorized as past oriented area. In the hypothetical case, for example, the maximum score for the future-minded professor will be +36 and that for the traditional professor will be -36. These examples are laid out in Tables 7 and 8.

Table 7

Past Oriented

Time	Weight	X	Q-Sort Distribution	Orientation Score
Past	-1	X	42	-42
Future	-1	X	6	6
Total Time Orientation Score				-36

Table 8

Future Oriented

Time	Weight	X	Q-Sort Distribution	Orientation Score
Past	-1	X	6	-6
Future	1	X	42	42
Total Time Orientation Score				36

If a professor is oriented to the present and, for example, has placed the present cards in the extreme right, the future cards at the middle, and the past ones at the extreme left, he will get a total time orientation score of 16, as presented in Table 9.

Table 9

Present Oriented

Time	Weight	Q-Sort Distribution	Orientation Score
Past	-1	6	-6
Present	0	42	0
Future	1	22	22
Total Time Orientation Score			16

By the same procedure, scores on value levels and dominant value orientations were produced for each respondent, and the means and standard deviations were calculated.

The value orientation hypothetical indices constructed by Oliver (p. 87) for this instrument are presented in Table 10.

Table 10

Value Orientation Indices

Time	Score Range
t_3---Past	
t_2---Present.....Value Directions.....	06 - 42
t_{10}--Area Score.....Value Area.....	-36 to +36
Relational	
r_3--Lineal	
r_2--Collateral.....Value Directions.....	06 - 42
r_1--Individually	
TRO--Area Score.....Value Area.....	-36 to +36
Man-Nature	
n_3---Subjugated to Nature	
n_2---Harmony with Nature.....Directions.....	06 - 42
n_1---Mastery over Nature	
TMNO---Area Score.....Value Area.....	-36 to +36
Activity	
a_3---Being	
a_2---Being in becoming.....Directions.....	06 - 42
A_1---Doing	
TAO---Area Score.....Value Area.....	-36 to +36
Total for Levels	
$Level_3$---Traditional	
$Level_2$---Intermediate..Value Levels.....	049 - 145
$Level_1$---Progressive	
Total Value Orientations Score.....	-094 to +094

Use of Instructional Media Questionnaire

A questionnaire was developed to obtain descriptive data about the sample and the perception of frequency of use of instructional media in the classroom by the subjects (see Appendix E).

The questionnaire listed the following thirteen media items:

1. flat picture
2. sound motion films
3. models
4. slides
5. filmstrips
6. opaque projection
7. overhead projection
8. tape recorder
9. educational television (video tapes)
10. diagrams
11. graphs
12. specimens
13. computers

The professors indicated on a scale of 0 to 15 how many times they used each of the media items in a semester. The researcher determined the range of each scale by interviewing some of the professors prior to the final design of the instrument.

For scoring the questionnaire, three categories of media were identified. These categories were those media considered to be: common, very common, and less common. These categories did not appear in the questionnaire, only the researcher knew into which category each medium fell. The categories were determined using as a frame of reference

the availability and time each medium has been in use in the system under study. Scores were computed for each of the categories by calculating and multiplying the score by 100. The scoring procedure is similar to the one used by Tor Kelson (1965).

The media items that were included in each category are in Table 11.

Table 11

Media Item in Each Category

Category I Very Common	Category II Common	Category III Less Common
Flat picture	Sound motion film	Educational TV
Models	Slides	Video tape
Filmstrip	Overhead projector	Computers
Opaque projector	Tape recorder	
Diagrams		
Graphs		
Specimens		

Validation of the Instruments

The Value Orientation Instrument is similar to the one developed by Kluckhohn and Strodtbeck (1961). This instrument was pre-tested in Puero Rico in 1964 by Oliver. As a result of Oliver's pre-test many value items were modified to improve validity and reliability within the Puerto Rican context.

The Value Orientation Instrument is considered a noncognitive measure test. For this kind of test an

internal consistency reliability estimate should be used (Lehmann and Mehrens, 1978). The split-half method was used to compute the reliability for the instrument. This method is considered a measure of internal consistency. The internal consistency estimates give information regarding the homogeneity of the content.

The formula of the split-half reliability method used in this study was:

$$rxx = \frac{2\ r_{1/2\ 1/2}}{1 + r_{1/2\ 1/2}}$$

Where

r xx = estimated reliability of the whole test

r 1/2 1/2 = reliability of the half test

The estimated reliability of the Value Orientation Instrument was .92.

For the Use of Instructional Media Questionnaire a reliability estimate was computed for the questions that asked about the frequency in which the professor had used the instructional media during the academic semester.

To measure the reliability of this question a test-retest estimate was used. This estimate is a measure of stability. This estimate

> ...obtained by administering a test to a group of individuals, readministering the same test to the same individuals at a later date, and correlating the two sets of scores.
>
> With this type of reliability estimate we can determine how confidently we can generalize from the score a

> person receives at one time to what he would receive if the test had been given at a different time (Lehmann and Mehrens, pp. 94-95).

To compute this reliability, twelve professors were randomly selected. The questionnaires were administered to them with an interval of two weeks between the first and second re-administration of the questionnaire. The test-retest estimate of reliability was .95.

Data Collection Procedures

Resources Required

One of the most important resources needed in this research was time. Time was a crucial resource because each of the instruments were hand delivered. The value orientation instrument was administered individually by the researcher to each of the professors.

Time Line

The distribution and collection of the instrument took around three months. Each of the professors in the sample had to be personally contacted and an appointment was made with each that agreed to participate in the study.

The appointment took place in the professors' office. There the Value Orientation and the Use of Instructional Media instruments were administered individually to each of the professors. This activity took to each professor one hour.

The tabulation and codification of the data took three

weeks. The data entry and computer analysis took one month.

Plan for Analyzing Data

Statistical treatment of data

Simple correlation was used as the primary analytical tool in testing the hypotheses. In simple correlation, "researchers are often concerned with the way two variables relate to each other for a given group of persons" (Glass and Standley, 1970, p. 109). The statistic used was the Pearson-moment Correlation Coefficient. This correlation is used when two sets of data are being related (Terrace and Parker, 1974).

To perform the Pearson-moment Correlation Coefficient two sets of variables were used. The value orientations scores were used as the independent variable mediating the frequency of use of instructional media in the classrooms of university professors (dependent variable). The variables used for each hypothesis tested are presented in the following section.

Decision rules and data analysis procedures

To perform the correlational analysis the scores for value orientations and frequency of instructional media use were used.

A two tailed-test was performed to test the hypotheses at a .05 level of significance. Hypotheses not significant

at .05 alpha would be rejected.

However the correlation directions expected for the hypotheses were the following:

1. It was expected to find a positive relationship between future, mastery over nature, doing, individual and total time, man-nature, activity and relational value orientation directions scores and the frequency of media use scores.

2. it was expected to find a negative relationship between past, subordinated to nature, being and lineal value orientation directions scores and the frequency of media use scores.

3. it was expected to find a positive correlation between modern and total value orientation scores and the frequency of media use scores.

4. it was expected to find a negative correlation between traditional scores and frequency of media use.

5. No expectation was made between the transitional dominant value orientation and the directions related with this orientation--present, collateral, harmony with nature, being in becoming--and the frequency of media use.

The two-tailed test was performed because the expected directions of the correlations might be wrong. The exact directions of the correlations cannot be predicted, they can only be expected to be in a particular direction.

The following data analysis procedures were used to test the hypotheses:

For Hypotheses 1

Statistical Procedures: Pearson-moment correlation coefficient. STAT Pro program was used to perform the statistical analysis.

Data used : Time direction scores correlated with mean scores of each category.

For Hypothesis 2

Statistical Procedures: Pearson-moment correlation coefficient. STAT Pro program was used to perform the statistical analysis.

Data used : Man-nature direction scores correlated with mean scores of each media category.

For Hypothesis 3

Statistical Procedures: Pearson-moment correlation coefficient. STAT Pro program was used to perform the statistical analysis.

Data used : Activity direction scores correlated with mean scores of each media category.

For Hypothesis 4

Statistical Procedures: Pearson-moment correlation coefficient. STAT Pro program was used to perform the statistical analysis.

Data used : Relational direction scores correlated with mean scores of each media category.

For Hypothesis 5

Statistical Procedures: Pearson-moment correlation coefficient. STAT Pro program was used to perform the statistical analysis.

Data used : Value Orientation level scores (total score of the questionnaire) correlated with mean score of each media category.

Summary

This chapter overviwed the hypotheses and methodology of the study. The Medical Sciences campus professors of the University of Puerto Rico were used as the population from which the sample was drawn. A total of 125 subjects were selected through a stratified random sampling procedure from the Medical Sciences Campus faculty. These professors answered two questionnaires: the Value Orientation Instrument, and the Use of Instructional Media Questionnaire.

The Value Orientation Instrument presented four value orientations to the professors. The two instruments were administered individually to each of the professors. The scores obtained from the Value Orientations and the Use of Instructional Media Questionnaires were submitted to Pearson product-moment correlation to test the relationship between the two.

CHAPTER IV

Results

Introduction

It was postulated in this research that value orientations of university professors are related to the frequency of instructional media used by them in the classroom. To corroborate this postulate five hypotheses were developed. The Pearson Moment Correlation was used to test the hypotheses. To obtain the data for testing the hypotheses, two instruments were used: Value Orientation Instrument and the Use of Media Questionnaire.

Description of the sample that answered the questionnaires.

The return rate of the questionnaire was 72 percent (see Table 12). In other words, 90 professors of the 125 randomly selected were able to participate in the study. Each of the 125 professors were contacted to make an appointment for the administration of the questionnaires. This appointment was needed because the Value Orientation Instrument had to be personally administered. The administration of the instrument took to each of the 90 professors around 55 to 60 minutes.

The lowest rate of participation came from the College of Medicine (59.4 percent). The majority of the faculty of

this college are physicians and because of the nature of their work and tight schedules were not able to participate in the study.

Table 12

Return Rate

College of Medicine	79	47	59.4
College of Dentistry	16	12	75
School of Health and Related Professions	17	17	100
Faculty of Biosocial Sciences and Graduate School of Public Health	9	8	89
College of Pharmacy	4	4	100
Totals	125	90	72%

Some of the personal characteristics of the professors that participated were as follows:

1. Educational level and academic rank. Seventy four percent of the faculty members hold doctoral degree and 26 percent hold master's degrees. Three percent of the females and 7 percent of the males have the rank level of full professor. The majority of the faculty interviewed were associate professor or assistant professors, forty and thirty seven percent respectively. The distribution according to rank and sex is presented in Table 13.
2. Age and years of experience. The distribution by age and years of experience are presented in

tables 14 and 15. The majority of the professors (23%) interviewed were in the age group of 41 to 45 years. Nineteen percent of the professors were in the age group of 31 to 35 years. In terms of years of experience 24.3 percent of the professors have 0 to 5 years of teaching experience. Followed by the group of 11-15 and 16-20 years of teaching experience with 23.3 and 20 percent of the professors respectively.

3. Instructional Media. Half of the professors interviewed have taken a course or some other formal training in audio-visual instruction while 58 percent of them have produced audiovisual materials to be used in their courses.

The medium that was used more often by the professors were slides (see Table 16). Eighty six percent of the professors used them at least once in the semester. This medium was followed by the overhead projector (77%), diagrams (67%), graphics (50%) and flat pictures and TV (49% each). The least used media items were filmstrip (14%) and computers (12%). Some of the professors expressed informally that the low availabilty of microcomputers for teaching in the classroom (not for research) and their lack of time have contributed to the low rate of use of this method.

Table 13

Distribution According to Rank and Sex of Faculty That Participated in the Study

Rank	Female Raw #	%	Male Raw #	%	Total Subjects	Percent of Sample
Professor	3	3%	6	7%	9	10%
Associate Professor	18	20	18	20	36	40
Assistant Professor	15	17	18	30	33	37
Instructor	8	9	4	4	12	13
Total	44	49%	46	51%	90	100%

Table 14

Distribution by Age of the Questionnaire Respondents

Age	Frequency	Percent
20-25	1	1
26-30	5	5
31-35	17	19
36-40	15	17
41-45	21	23
46-50	8	9
51-55	14	16
56-60	6	7
No answer	3	3
Total	90	100%

Table 15

Distribution of Questionnaire Respondents
By Years of Experience

Years	Frequency	Percentage
0-5	22	24.3%
6-10	15	17.0
11-15	21	23.3
16-20	18	20.0
21-25	3	3.3
26-30	4	4.4
31-35	3	3.3
No answer	4	4.4
Total	90	100.0%

Table 16

Professors That Have Used Each of the Following Media
at Least Once in the Semester

	Total of Professor	Percentage
Flat pictures	44	49
Moving pictures	41	45
Models	36	40
Slides	77	86
Filmstrips	13	14
Opaque Projectors	27	30
Overhead Projectors	69	77
Tape Recorders	23	25
Educational TV or Video Casettes	44	49
Graphics	50	56
Diagrams	60	67
Specimens	25	28
Computers	11	12.2

Results

The Value Orientation Instrument provided scores for four value areas and each of the directions of these areas. Also scores were provided for the traditional, transitional, and modern dominant value orientations, plus a total score for the whole instrument. The higher the score in each of the directions the more oriented toward that direction an individual was. The higher the total score in a value area the more modern oriented the individual was in that particular area. The higher the total score of the whole instrument the more modern oriented the individual was.

The media items included in the Use of Instructional Media Questionnaire were divided into three categories: those media considered to be very common, common, and less common.

To test each of the hypotheses, several correlations were performed. For example, to test the time orientations, each direction of this orientation was correlated with each category of media:

--past direction scores were correlated with very common, common, and less common media scores.

--present direction scores were correlated with very common, common, and less common media scores.

--future direction scores were correlated with very common, common, and less common media score.

--time orientation area scores were correlated with very common, common, and less common media scores. The same procedure was followed with each of the areas.

For a better understanding of the results, Table 17 lists the directions of the value area that are related with each dominant value orientation.

Table 17

Dominant Value Orientations

	Traditional	Transitional	Modern
Orientations time	Past	Present	Future
man-nature	subjugated to nature	Harmony with nature	Mastery over nature
activity	Being	Being in Becoming	doing
relational	Lineal	Collateral	Individual

The hypotheses tested were non-directional. A two-tailed test at .05 level of significance was used to test the hypotheses. Nevertheless it was expected to find a positive correlation between those value orientations related with modern orientations and the categories of media use and a negative correlation with the value orientations related with the traditional orientations. The results for each of the hypotheses are presented in Table 18. The narrative description of the results is presented below:

Hypothesis 1

> Variations in time orientation directions are significantly related to university professors' perceptions of their instructional media utilization in the classroom.

The past, present, and future directions and the total time area value orientation were not significantly related to the very common, common, and less common media categories. Nevertheless some of the directions of the correlations were in the expected direction. For example, past orientation was negatively related to very common and less common media use categories, while the future orientation was positively correlated to very common and less common media categories. The present orientation is a characteristic of the transitional value orientation. This value direction, even though not significantly related, correlated negatively with very common and less common media categories. Therefore, the hypotheses was not supported by the data of this study.

Hypothesis 2

> Variations in man-nature orientation directions are related to the university professors' perceptions of their instructional media utilization in the classroom.

The subjugated to, harmony with, and mastery over man-nature orientation directions and the total man-nature value orientation area were not significantly related to the

adoption of media in the classroom by university professors.

The three media categories correlated negatively with the harmony with nature orientation, while positively correlated with the master and total nature orientation.

The subjugated man-nature orientation was negatively correlated to very common media category while positively correlated to common and less common media categories. These last two correlations were in an unexpected direction, but insignificant. Therefore, the hypothesis was not supported by the data of the study.

Hypothesis 3

> Variations in activity orientation directions are significantly related to the university professors' perception of their instructional media utilization in the classroom.

The being in becoming direction, which is a characteristic of the transitional value orientation, was significantly related to the very common media category. The direction of the correlation was negative. The other two media categories were insignificantly negative related with the being in becoming direction.

The being, doing activity orientation directions and the total activity value orientation areas were not significantly related to the adoption of media in the classroom by university professors.

The directions of the correlation of the doing orientation and total activity orientation area were

positive for the three media categories. Therefore, the hypothesis was partially supported, since the being in becoming direction was significantly negatively correlated to the very common media category. The other directions were not significantly related to media use categories.

Hypothesis 4

> Variations in relational orientation directions are significantly related to the university professors' perception of their instructional media utilization in the classroom by university professors.

The collateral direction, which is a characteristic of the transitional orientation, was significantly related to the less common media category. This correlation was negative. The collateral direction was insignificantly related to the very common and common media categories.

The lineal and individual relational directions and the total relational value orientation were not significantly related to the adoption of media in the classroom.

Most of the directions of the correlations of the relational value orientation were unexpected. For example, the lineal orientation, which is a characteristic of the traditional value orientation was positively related with the three media categories while the individual orientation which is a characteristic of the modern orientation, was negatively related to the common and less common media categories. The total relational value orientation area

was negatively related to the three media categories. Therefore, this hypothesis was partially supported by the data of the study since the collateral direction was significantly related to the less common media category.

Hypothesis 5

> Variations in dominant value orientations are significantly related to the university professors' perception of their instructional media utilization in the classroom by university professors.

The transitional value orientation was statistically significantly related to the very common and less common media categories. These correlations were negative. The transitional value orientation was not significantly related with the common media category. This correlation were also negative. The three media category correlations were negative, implying that the higher the score in the transitional orientation the lower the score of the three media categories.

The traditional and modern dominant value orientations and total dominant value orientation scores were not significantly related to the adoption of media in the classroom. Therefore, this hypothesis was partially supported by the data of the study since the transitional value orientation was significantly related to the very common and less common media categories. The other dominant and total value orientations were not significantly related

Table 18

Table of Correlations

Value Orientations	Media Use Categories: Very Common	Common	Less Common
Time orientations			
past	-.0132	.0165	-.0953
present	-.1275	.0747	-.0586
future	.0672	-.1078	.0798
total time orientation	.0572	-.0908	.0716
Nature-nature orientations			
subjugated	-.0810	.0230	.0491
Harmony	-.1645	-.0116	-.0250
Master	.0084	.0194	.0949
Total nature	.0517	-.0017	.0284
Activity orientations			
being	.0845	-.1836*	.0047
being in becoming	-.2361**	-.1395	-.1188
doing	.1924*	.0762	.0156
total activity	.0804	.1722	.0063
Relational orientations			
lineal	.1821	.1623	.1697
collateral	.0900	.0161	-.2785**
individual	.0188	-.0352	-.0497
total relational orientation	-.0758	-.1222	-.1317
Value orientation directions			
traditional	.0574	.0432	.1720
transitional	-.3201***	-.1412	-.2792**
modern	.1366	-.0194	.0587
total orientation	.0487	-.0266	.0045

***significant at .01 probability level	.2830
** significant at .05 probability level	.2170
* significant at .10 probability level	.1830

to the use of media.

Additional Findings

The original intent of the study's design was to relate value orientation variables to media use categories--very common, common, and less common. Nevertheless, after studying the frequency and histogram (see Appendix G) of the total frequency scores, it was decided to calculate the correlations between these scores and the value orientation variables. The histogram of the total frequency of media use had a better distribution of the scores. It was thought that this fact could have an effect on the correlations between the variables.

The results of these correlations were as follows (see Table 19):

1) The time orientation directions and total time orientation area scores were not significantly related to the total frequency media score.

2) The man-nature orientation directions and balance man-nature value orientation area were not significantly related to the total frequency media score.

3) The being in becoming and doing activity directions were significantly related to the total frequency media score. The being in becoming was negatively correlated while the doing was positively correlated. The being direction and total activity orientation were not

Table 19

Correlations Between Total Frequency Media Use Score and The Value Orientations Scores

Value Orientations	Total Frequency Media Use
Time	
1. Past	-.0132
2. Present	-.0619
3. Future	-.0192
4. Total area	.0133
Nature	
1. Subjugated	-.0287
2. Harmony	-.1201
3. Master	.0545
4. Total area	.0491
Activity	
1. Being	-.0337
2. Being in Becoming	-.2640**
3. Doing	.2106**
4. Total area	.1684
Relational	
1. Lineal	.2054**
2. Collateral	.0209
3. Individual	-.0526
4. Total	-.1457
Dominant Value Orientation	
Traditional	.0784
Transitional	-.3357***
Moder	.1086
Total instrument	.0357
***Significant at .01 probability level	.2830
** Significant at .05 probability level	.2170
* Significant at .10 probability level	.1830

significantly related.

4) The lineal direction of the relational orientation was significantly related to the total media frequency score. This relation was positive. The collateral and individual directions and the balance relational orientations were not significantly related.

5) The transitional dominant value orientation was significantly negatively related to the total frequency score. The traditional, modern and balance dominant value orientations were not significantly related to the total frequency media score.

Summary

Five hypotheses were tested. Four negative value orientation correlations were significantly related with media use categories. These were the relationships between

1. Being in becoming and the very common media category.
2. Collateral direction and less common media category.
3. Transitional orientation and very common media category.
4. Transitional orientation and less common media category.

Four value orientation correlations were significantly related to the total frequency of media use. These were

the following relationships:

1. The being in becoming was negatively related to total frequency of media use.
2. the doing direction was positively related to the total frequency of media use.
3. the lineal direction was positively related to total frequency of media use.
4. the transitional dominant value orientation was negatively correlated to total frequency of media use.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

It has been the purpose of this study to test if value orientations of university professors are related to the frequency of media use. The frequency of media use was used as a measure of adoption of media in the classroom by university professors.

Rogers has postulated that those individuals with a modern orientation will accept innovations and adapt new ideas more rapidly than those individuals with traditional orientations. Some studies have been conducted in the agricultural field to test Rogers' postulate. Bose (1962) observed that the people with tradition oriented folk type values were more resistant to change than people with urban oriented values. Beal and Sibley (1967) and Moulik and Lakhande (1969) found that cosmopolite people were more innovative. Aurora and Deb (1973) indicated "that different levels of adoption of agricultural technology are the results of different levels of value orientations which oscillate between traditionality and modernity" (p. 10). They concluded that the more modern the value orientation of

the people is, greater is the adoption of agricultural technology.

Studies in the area of value orientations has been mainly reported in the discipline of sociology and anthropology. No research was found in the area of education. The finding of one area may or may not be transferable to the other areas. Moallemian (1984) stated

> ...many generalizations have been set forth by rural sociologists who focused upon human interaction patterns within agriculture. Agricultural incentive and outcomes seem to differ from educational incentives and outcomes. It is not unreasonable to believe these differences may confound the transferability of generalization from one discipline to another (p. 162).

Using as a frame of reference the value orientation studies in the area of sociology and anthropology, this research was designed to investigate whether value orientations of university professors were related to their adoption of media.

Summary of the Study

Some reluctance to adopt instructional media in the classroom has been observed among university professors in the Puerto Rican context. Researches conducted in this area emphasized mainly the relationship between personal characteristics and administrative deterrents that influence the adoption of instructional media by the professors. Little research have been done to investigate the professors internal factors that may inhibit the use of media in the

classroom.

Considering value orientations as an internal factor this study attempted to find out the relationship between value orientation and the frequency of media use in the classroom by university professors. Frequency of media use was used as a measure of adoption behavior of university professors.

To measure this postulate five hypotheses were formulated using as a frame of reference Kluckhohm's and Strodbeck's (1961) model of value orientations--time, man-nature, activity, and relational orientations.

To test the research hypotheses, data was gathered from 90 professors of the Medical Sciences campus of the University of Puerto Rico. Two questionnaires were used to collect data from the professors. These were the Value Orientation Instrument developed by Oliver (1964), following the Kluckhohm and Strodbeck (1961) model, and the Use of Media Questionnaire. These questionnaires were personally administered to the faculty members that participated in the study.

The primary statistical tool for testing the hypotheses was the Pearson product-moment correlation. A two tailed-test was performed to test the hypotheses at .05 level of significance.

The results of the study are summarized in Table 20. The results will be compared with the finding of studies

conducted in the sociological-anthropological field.

Time Orientation

No significant difference was found between time orientation dimensions and the frequency of media use. Some correlations were in the expected directions. Past orientation correlates negatively with very common and less common media categories, while future dimension was positively correlated with these media categories. Singh and Sahal (1974) found a significant positive correlation between individuals living in highly mechanized villages and their scores in futurism. While Chattopdhyay (1967) found a significant correlation between conservatism (past orientation) and adoption quotient.

Man-Nature Orientation

No significant difference was found between man-nature orientations and the frequency of media use. Nevertheless being modern oriented in the nature orientation area was positively related to very common and less common media categories. In the sociological-anthropological field significant positive correlations have been found between scientism and adoption of recommended practices (Bose 1962, Sarkar and Sen 1970, Supe and Kolte 1971, Singh and Sohal 1974). Ramsey (1954) found a significant positive correlation between cognitive adoption and belief in

Table 20

Relationship Between Value Orientations and Frequency of Media Use

Value Orientation	Media Categories: Very common		Common		Less Common	
	Significance	Type of Correlation	Significance	Type of Correlation	Significance	Type of Correlation
A. Time Orientation						
1. past	no	negative	no	positive	no	negative
2. present	no	negative	no	postive	no	negative
3. future	no	positive	no	negative	no	positive
4. total	no	positive	no	negative	no	positive
B. Nature Orientation						
1. subjugated	no	negative	no	positive	no	positive
2. harmony	no	negative	no	negative	no	negative
3. mastery	no	positive	no	positive	no	positive
4. total	no	positive	no	negative	no	positive
C. Activity Orientation						
1. being	no	positive	no	negative	no	positive
2. being in becoming	yes	positive	no	negative	no	negative
3. doing	no	positive	no	positive	no	positive
4. total	no	positive	no	positive	no	positive
D. Relational Orientation						
1. lineal	no	positive	no	positive	no	positive
2. collateral	no	positive	no	positive	yes	negative
3. individual	no	positive	no	negative	no	negative
4. total	no	negative	no	negative	no	negative
E. Value Orientation						
1. traditional	no	positive	no	positive	no	positive
2. transition	yes	negative	no	negative	yes	negative
3. modern	no	positive	no	negative	no	positive
4. total	no	positive	no	negative	no	positive

science. Chattopadhyay and Pareek (1967) found a negative significant correlation between fatalism and adoption quotient.

Activity Orientation

A significant negative correlation was found between being in becoming and very common media category. Being in becoming dimension is a characteristic of the transitional value orientation. This dimension was also negatively correlated with common and less common media categories. These indicate that the higher the score in the being in becoming activity orientation the lower the score in the three media categories. The doing dimension and total activity orientation scores were positively correlated with the three media categories. Supe and Kolte (1971) found a positive correlation between mental activity and adoption behavior. They explained that

> a large number of farmers who judged success in terms of planning adoption, improve farm practice. Those farmers who thought hard work as the only method of solving problems were less prone to adopt (p. 14).

Singh and Sohal (1974) found that activism was a value found among subjects of highly mechanized villages.

Relational Orientation

The collateral direction of the relational orientation area was significantly negatively related to less common media category. Indicating that the higher the score in the

collateral direction, the lower was the score in the less common media category.

Some contradictory findings were found in the relational value orientation. For example the lineal direction, which is a characteristic of the traditional orientation, correlated positively with the three media categories. While the individual direction, which is a characteristic of modern orientation, was negatively correlated with common and less common media categories.

In other studies related with this value orientation area, the findings have been inconclusive. Ramsey (1959) hypothesized a negative relation between individualism and adoption behavior. He found a non-significant positive correlation. Fosen (1956) found that non-adopters were individualistic. While Singh and Sohal (1974) found that members of a highly mechanized villages were more individualistic than those from a low mechanized village. Supe and Kolte (1971) and Ramsey (1959) suggested that findings in the value orientation of individualism need more careful scrutiny in future research.

Value Orientation

The transitional value orientation was found significantly negatively related to very common and less common media categories. This means that the higher the score in the transitional orientation the less media the

professor used. The other correlations were found not significant.

Sarkar and Sen (1970) found that modernism was significantly positively related to adoption and Ramsey (1959) and Bose (1962) found that traditionalism was significantly negatively related to adoption practices.

Total Frequency Media Score

Three traditional directions were negatively correlated to the total frequency score. These directions were the past, subjugated and being value orientations. Three modern directions were positively correlated to the total media frequency score. These directions were: future, master and doing value orientations. The doing direction was found significant at the .05 level of significance. The present, harmony and being in becoming directions, which are characteristic of the transitional orientation, were negatively related to the total frequency media score. The being in becoming direction was significantly related at the .05 level of significance.

The relation found between the relational orientation area and the total frequency media score was similar to the ones found with the media categories. The lineal direction, which is a characteristic of the traditional orientation, was significantly negative related to the total media score, while the individual direction and the total relational

orientation scores negatively correlated with the total media score. These findings tend to indicate that the more traditional oriented professors were in the relational orienation the more frequently they reported using media.

The transitional orientation was significantly negatively related at the .01 level of significance with the total media score. This indicates that the higher the score in the transitional value orientation the lower the total media score.

Conclusions and Recommendations

Following are the conclusions and recommendations for each of the hypotheses of the research.

> Hypothesis 1: Variations in time orientation are significantly related to the university professors' perceptions of their instructional media utilization in the classroom.

Conclusion: Professors' time value orientations do not affect adoption or use of media.

Recommendations for further research: Conduct a study where adopters and rejectors of media can be identified. Search for differences among these two groups in terms of their time orientation. It may be that time orientation--past, present, and future--could be related to the covert behavior that identifies adopters and rejecters than to the overt behavior of using instructional media.

Hypothesis 2: Variations in man-nature orientations are significantly related to the university professors' perceptions of their instructional media utilization.

Conclusion: Professors' man-nature orientations do not affect the adoption or use of media.

Recommendations for further research: The man-nature orientation relate to the attitude towards nature designations (Oliver 1964)--either fatalistic or scientific. Future research could be conducted, using only high-technology media as a dependent variable to determine whether there is a relationship between scientism and high users of high-technology media, and fatalism and low users of high-technology media. Perhaps those individuals who have a scientific outlook prefer to use or adopt more sophisticated and complex media.

Hypothesis 3: Variations in activity orientations are significantly related to the university professors' perception of their instructional media utilization in the classroom.

Conclusion: The professors' being in becoming activity directions negatively affects the adoption of very common media, while it does not affect the adoption or use of common or less common media categories. The other activity orientation directions do not affect the adoption or use of media in the classroom by the university professors.

Recommendation for further research: A thorough study

could be conducted in this orientation. There might be the possibility that the doing direction--which is characterized by achievement of goals and accomplishment of task and by the view of work as a mean to an end, not as an end in itself--could be related to multipractice adoption behavior. The research could study the relations between multi-practice adoption behavior and activity value orientation.

To measure the multipractice adoption behavior an adoption quotient could be developed using as an example the Chattopadhyay model (1966) of multipractice adoption quotient measure.

> Hypothesis 4: Variation in relational orientations are significantly related to university professors' perception of their instructional media utilization in the classroom.

Conclusion: The professors collateral relational orientation direction negatively affects the adoption or use of less common media, but does not affect the adoption or use of very common or common media. The other relational orientations do not affect the adoption of media. Nevertheless as stated previously the lineal direction had a positive correlation with the three media categories. When taking into consideration the total frequency of media, a significant positive correlation was found with the lineal orientation.

Recommendation for Further Research: The directions of the correlations found in the relational orientation were similar to the finding of other investigations performed in this area (Fosen 1956). Researchers (Ramsey 1954; Supe and Kolte 1971) have indicated that this area needs to be investigated more thoroughly. A study could be constructed to identify media and non-media oriented professors and then investigate the difference in the relational oreintations between the two groups. It may be that media oriented professors are more group goal oriented (lineal and collateral) than non-media oriented professors.

> Hypothesis 5: Variation in dominant value orientations are significantly related to university professors' perception of their instructional media utilization in the classroom.

Conclusion: The professors' transitional dominant value orientation negatively affects the adoption of very common and less common media use. The other dominant value orientations--traditional, modern--do not affect the adoption of media.

Recommendation for Further Research: Develop an instrument in which the value items reflect characteristics of the educators in their educational settings. One of the reasons why higher correlations are not found between value orientations and the adoption behavior may be that the value items are not related to the adoption practice (Ramsey

1954). The developed instrument could be used to study the relationship between educators' value orientations--traditional, transitional, modern and media adoption behavior.

Conclusions for the total frequency media score.

When taking in consideration all the types of media of the study, instead of using media categories, the following conclusions could be drawn from the analysis of the data.

1) Professors' doing activity orientation direction positively affects the adoption or use of media.
2) Professors' being in becoming activity orientation direction negatively affects the adoption or use of media.
3) Professors' lineal relational orientation direction positively affects the adoption or use of media.
4) Professors transitional dominant value orientation negatively affects the adoption or use of media.

A more definite or clear picture was obtained of the directions of the correlations when taking into consideration the total frequency media scores (see Table 21). Four of them were significant, three in the expected direction and one--the lineal direction--in the unexpected direction. This indicates a tendency toward the relationship between value orientations and the use of instructional

Table 21

Relationship Between Value Orientations and Total Frequency of Media Use

	Total media score	
	significance	type of correlation
Value orientation		
A. Time orientation		
1. Past	no	negative
2. Present	no	negative
3. Future	no	positive
4. Total	no	positive
B. Nature Orientation		
1. Subjugated	no	negative
2. Harmony	no	negative
3. Master	no	positive
4. Total	no	positive
C. Activity orientation		
1. Being	no	negative
2. Being in becoming	yes	negative
3. Doing	yes	positive
4. Total	no	positive
D. Relation orientation		
1. Lineal	yes	positive
2. Collateral	no	positive
3. Individual	no	negative
4. Total	no	negative
E. Dominant Value Orientations		
1. Traditional	no	positive
2. Transitional	yes	negative
3. Modern	no	positive
4. Total	no	positive

media since the modern oriented directions--future, master over nature, and doing--were positively related to media use, while the traditional directions--past, subjugated to nature, and being--were negatively related to media use.

General Recommendations for Further Research

1. Hard data on media use should be collected, instead of using professors' perceptions. Usually professors have their own media materials, which makes it difficult to rely on the data that could be collected through Media and/or Educational Technology Centers. One way to cope with this problem is to perform an ethnographic research where the professors will be observed in their classroom. A checklist could be used to record the times the professor has used media. Another way to collect hard data is through study of the lesson plans of professors.

2. A study could be conducted using physician and non-physician professors to compare the media use patterns among the two groups.

3. Ramsey (1954) distinguished between two kinds of adoption: behavioral adoption that involves the actual use of the innovation, and the cognitive adoption that is related with obtaining knowledge and critical evaluation of the innovation in terms of individual situations (mental evaluation of the innovation). He found that "value orientations were more important as factors in change when

the cognitive processes were included, than when only behavioral change was considered" (p. 46). Further research could be conducted in this area to measure the possible relationship between cognitive adoption of educational innovations and value orientation of the professors.

4. A study could be conducted where the researcher could identify different educational organizational environments: one being high technology-oriented (modern) and another being low technology oriented (conservative). The researcher could measure if there exists a relationship between the value orientation of the individuals in the institutions, and the kind of institution they work for. The purpose of this type of investigation could be to study if the personnel of high technological educational institutions are more modern value oriented than those from low technological educational institutions.

General Comment

The study draws limited evidence in terms of the relation between value orientations and the professors' perceptions of their frequency of media use in the classroom. However it cannot be concluded that value orientations are not related to the adoption of instructional media.

The large majority of the correlations were not statistically significant. This could be explained by the

fact that the majority of the media used by the professors did not require major changes in teacher behavior and teaching styles, since the professors used the instructional media as an aid or supplementary to the teaching process. It seems in this way that the adoption of the media do not interfere with the value orientations of the professors. Pena (1985) stated that:

> ...it seems to me that instead of opening the road to innovation, educational technology has many times served to hide the traditional educational model which it sought to change, under the guise of new concepts. Teachers use a new language in the belief that their thinking has changed, but in practice everything remains the same. New concepts are only a disguise for old methods (p. 28).

If this statement is true, then use of instructional media in the classroom will not measure adoption behavior since the professors that use them do not conceive media as a major change in their teaching styles and will not interfere with their traditional, transitional or modern value orientations. What the teacher will do is to adapt the media to his/her modern or traditional approaches and teaching methods.

Probably in programs where the great majority of the activities of the teaching process depends on the media, the relationship between value orientation and adoption of media could be stronger. The dependent variable, instead of being media as aides or supplementary to the teaching process, could be self-contained instructional media. Also if one

instructional media innovation or program could be used as the dependent variable the results may be found significant.

Ramsey (1954) has stated that one of the reasons why higher relations are not found between value orientations and adoption practices, is because the value items used in the studies are not directed to the adoption of practices. He postulates that "Higher relationship may be found when each question measuring a value centers around the adoption or evaluation of practices" (p. 47).

Following this line of thinking the value orientation instrument in the field of education could measure values related to the educators' functions. These value orientations could be related with adoption behavior of the educators.

Another reason for not finding a higher relationship between value orientations and the use of instructional media may be because the majority of the instructional media used in this study did not require major behavioral or teaching changes. Other independent variables or factors may be more closely related to the decision of using or not using media in the classroom than the value orientations variables. Some of these independent variables related to the use of media could be: attitude toward media, lack of audiovisual training, type of administration of audiovisual programs, availability of instructional media, type of

physical facilities, lack of professors' time, and insufficient academic budget.

Summary

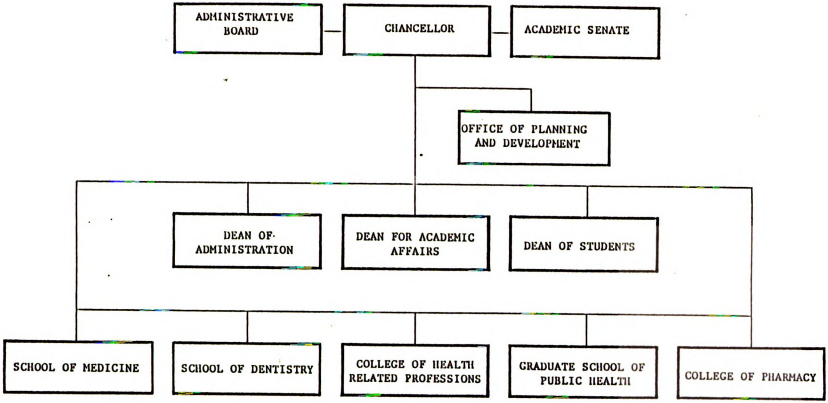
This chapter presented a brief description of the study, its design, data analysis method and the conclusions and recommendations for further research.

The assumption underlying this study was that value orientation variables are related to the use of instructional media in the classroom by university professors. To test this assumption, five hypotheses were developed. The Pearson product-moment correlation was used to test the relationship between value orientations and the use of media. The majority of the correlations were not significant. Further research is needed to scrutinize the relationship between value orientation and the adoption of media in the classroom.

APPENDIX A

Medical Sciences Campus Organizational Chart

ORGANIZATION CHART
MEDICAL SCIENCES CAMPUS
UNIVERSITY OF PUERTO RICO



APPENDIX B

Medical Sciences Campus Map

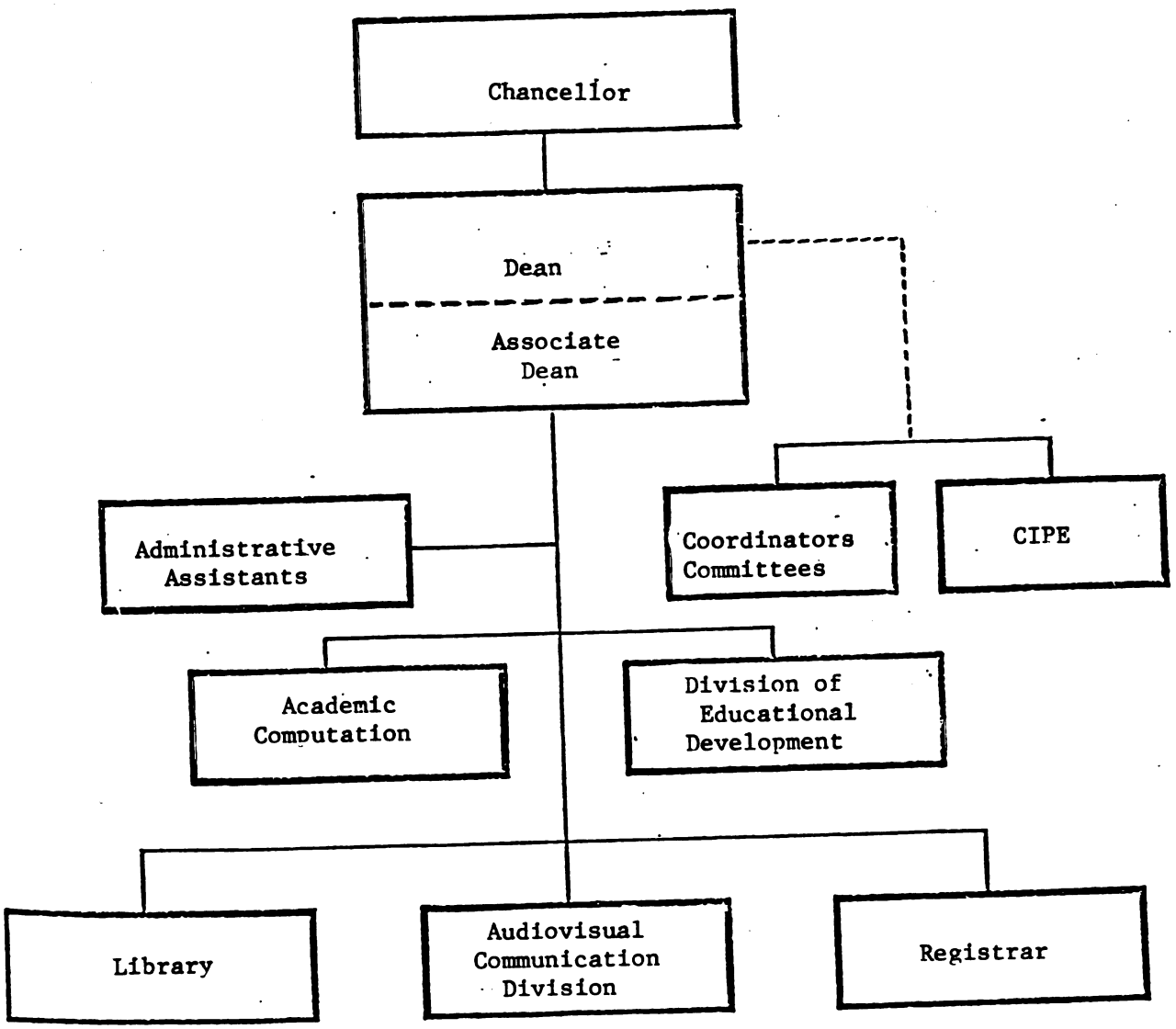
1 U.P.M. MEDICAL SCIENCES CAMPUS' MAIN BUILDING
2 MAIN LIBRARY
3 COLLEGE OF HEALTH RELATED PROFESSIONS
4 SCHOOL OF NURSING
5 PHARMACY AND STUDENT AFFAIRS BUILDING
6 MAIN AUDITORIUM
7 PARKING GARAGE BUILDING
8 UNIVERSITY HOSPITAL
9 DR. ANTONIO ORTIZ PEDIATRIC HOSPITAL

APPENDIX C

Office of the Dean of Academic Affairs
Organizational Charts

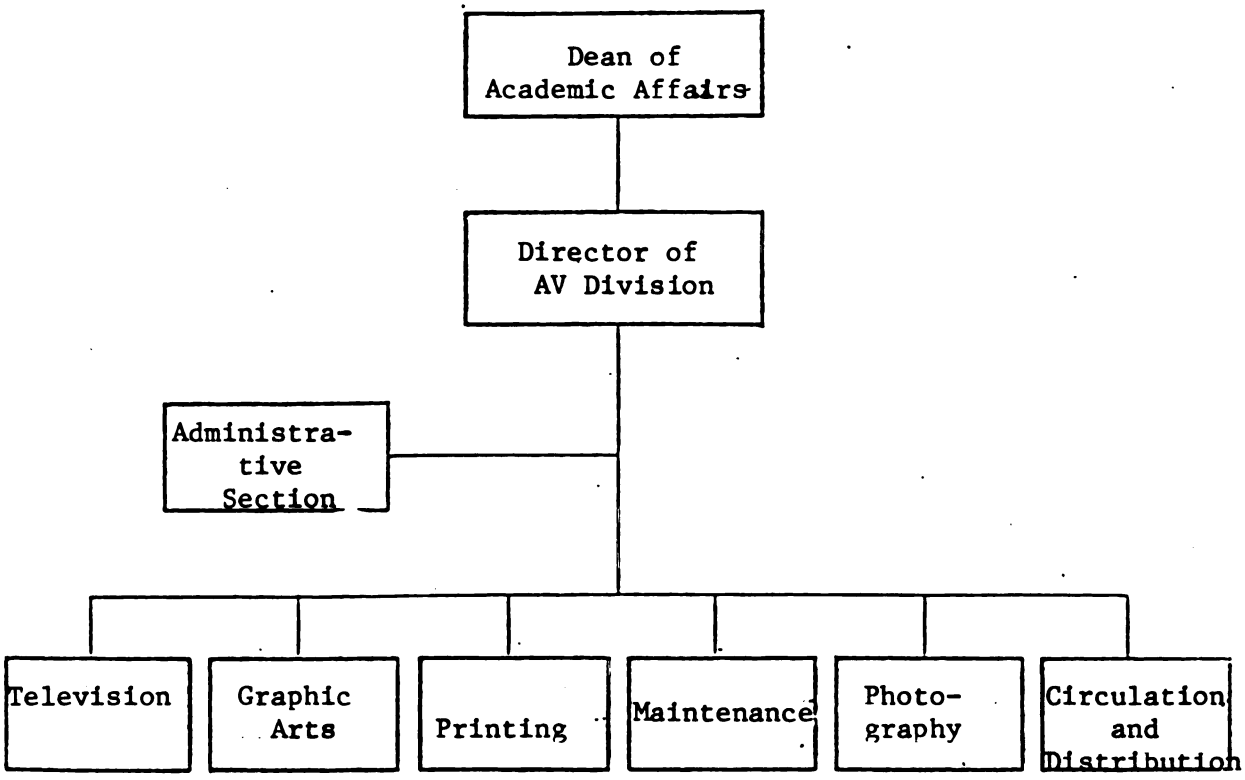
Appendix C_1

Organizational Chart: Office of the Dean of Academic Affairs



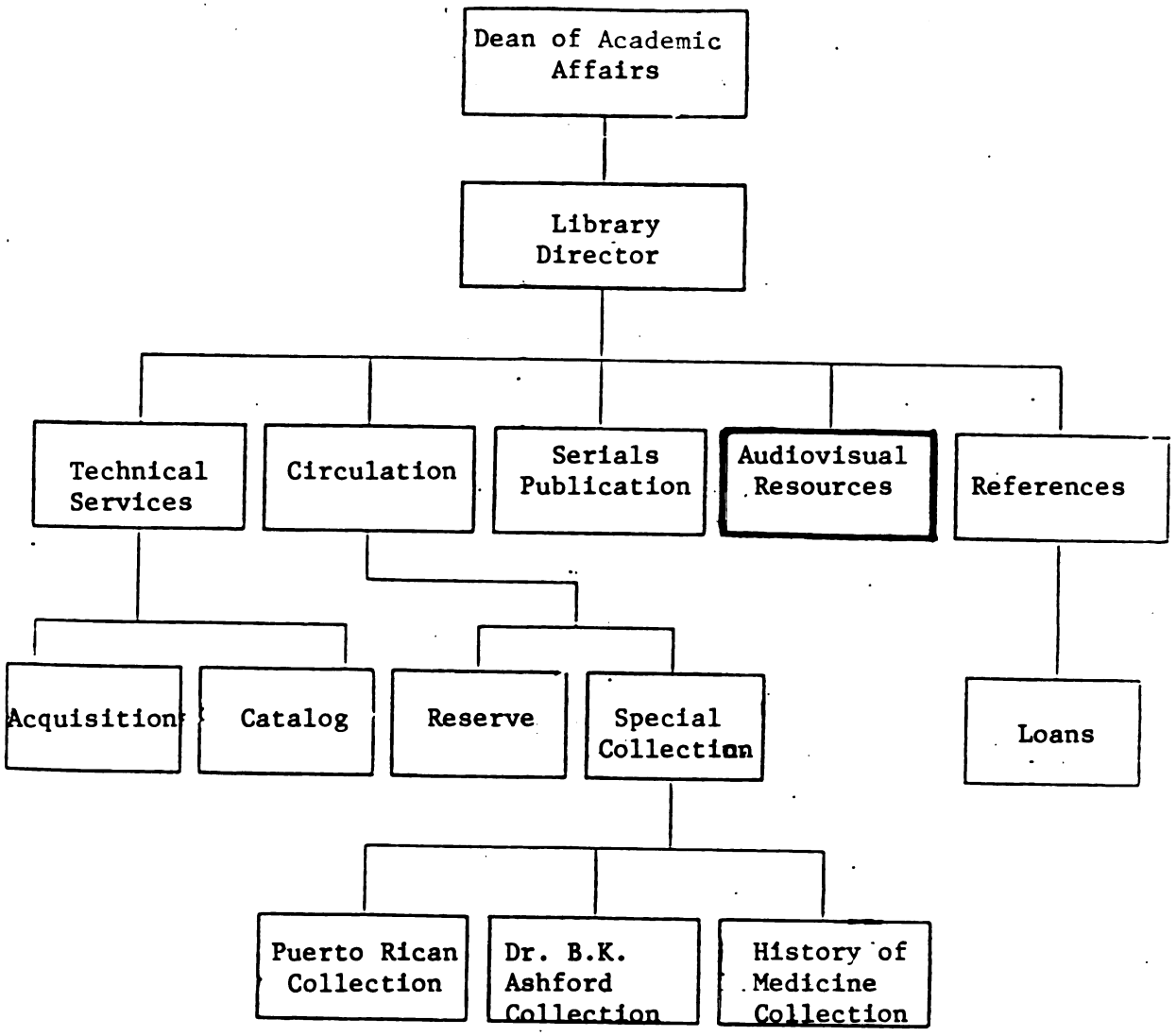
Appendix C_2

Organizational Chart of the Division of Audiovisual Communications



Appendix C_3

Organizational Chart of the Library of the Medical Sciences Campus



APPENDIX D

Value Orientation Instrument

Q-SORT ON VALUE ORIENTATION INSTRUMENT

I. TIME ORIENTATION

t_3 (Past) 1. Children should be taught the traditions of the past (the ways of the old people). I believe that the old ways are the best, and that it is when children do not follow them that things go wrong.

Espanol

A los ninos se les debe ensenar las costumbres del pasado con mucho cuidado. Las viejas costumbres son siempre mejores y cuando los ninos no siguen estas costumbres viejas, ienen dificultades.

t_2 (Pres.) 2. Children should be taught some of the old traditions (ways of the old people), but it is wrong to insist that they stick to these ways. I believe that it is necessary for children always to learn about and take on whatever of the new ways will best help them get along in the world of today.

Espanol

A los ninos se les debe ensenar las costumbres del pasado, pero no se debe insistir en que se sigan estas costumbres al pie de la letra. Los ninos necesitan aprender y aceptar muchas cosas nuevas para vivir mejor hoy dia.

t_1 (Fut.) 3. In raising children I do not believe they should be taught much about past traditions. I believe that the world goes along best when children are taught the things that will make them want to find out for themselves new and better ways of doing things to replace the old.

Espanol

En la crianza de ninos yo no creo se le deba dar mucha atencion a las costumbres viejas. La vida es mejor para todos cuando nuestros hijos aprenden a querer buscar por si mismos nuevos y mejores modos de hacer las cosas.

t_{1a} (Fut.) 4. I really expect my children to have more than I have had if they work hard and plan right. There are always good chances for people who try.

Espanol

Realmente yo creo que mis hijos tendran mas de lo que yo he tenido, eso es, si trabajan duro y hacen sus planes con cuidado. Siempre existen buenas oportunidades para los que trabajan duro.

t_2 (Pres.) 5. I don't know whether my children will be better off, worse, or just the same. Things always go up and down even if one works hard, so we can't really tell.

Espanol

Yo no se si mis hijos viviran mejor o peor, o lo mismo, que yo he vivido. La vida tiene sus alzas y sus bajas, aun cuando la gente trabaja duro.

t_3 (Past) 6. I expect my children to have just about the same as I had or bring things back as they once were. It is there job to work hard and find ways to keep things going as they have been in the past.

Espanol

Yo espero que mis hijos vivan mas o menos como yo he vivido, y que hagan volver la vida como era antes. Es la responsabilidad de los hijos mantener la maner de vivir del pasado.

t_2 (Pres.) 7. The past is gone and the future is much too uncertain to count on. So I believe

it is best to give most attention to what is happening now in the present.

Espanol

Es pasado ya ha pasado y el futuro es muy incierto para darle mucha atencion. Por eso yo creo lo mas conveniente es poner mi atencion en las cosas del presente.

T_3 (Past) 8. I think that the ways of the past (traditional ways) are right and best, and as changes come things usually get worse.

Espanol

Yo creo que las cosas del pasado son mucho mejores y que los cambios por lo regular traen problemas.

t_{1b} (Fut.) 9. I believe that it is almost always the ways of the future--the ways which are still to come--which will be best, and even though there are sometimes small setbacks, changes bring improvements.

Espanol

Yo creo que lo que venga en el futuro tiene que ser, casi siempre, mejor. Los cambios siempre traen mejoras aunque uno no vea las mejoras inmediatamente.

t_{3b} (Past) 10. I am very pleased with the changes occurring here and everywhere because the new ways are usually better than the old ones. I like to see everything--even religious ceremonies--moving ahead.

Espanol

Yo me siento muy contento con los cambios que estan ocurriendo aqui y donde quiera, proque las nuevas costumbres y medios de vida son mejores que los viejos y a mi me gusta seguir lo nuevo en todos los aspectos (cosas), aun en las ceremonias religiosas.

t_{3b} (Past) 11. I am very unhappy because of the changes that are occuring here and everywhere. I think that our ways of living should be kept exactly the same in every way--as they were in the past.

Espanol

Yo estoy muy disgustado con los cambios que estan ocurriendo aqui y donde quiera. Yo creo que las viejas costumbres y tradiciones se deben conservar tal y como eran en el pasado.

t_{2b} (Pres.) 12. I feel that the old ways of living are better but we just can't hang onto them. It makes life easier to accept some changes as they come along.

Espanol

Yo creo que las costumbres y tradiciones del pasado son mejores, pero reconozco que hoy en dia es dificil e imposible guardarlas exactamente a como eran antes. La vida se hace mas facil cuando se aceptan los cambios que vienen con el tiempo.

II. RELATIONAL ORIENTATION

r_3 (Lineal) 13. When we need a solution for a problem in our community it is best to depend on our community leaders to decide what is to be done.

Espanol

Cuando en nuetra comunidad surge un problema y necesitamos solucionarlo, lo mejor es depender de los lideres de la comunidad para que sean ellos los que decidan lo que debe hacerse.

r_2 (Coll.) 14. When we need a solution for a problem in our community, it is best to call a meeting of the people affected and discuss the problem until almost everyone agrees what is to be done. We prefer to reach our decision

unanimously.

Espanol

Cuando en nuestra comunidad surge un problema y necesitamos buscarle solucion, lo mejor es llamar a una reunion de las personas afectadas por el mismo, discutir el problema y llegar a una decision aceptada por todos sobre lo que debe hacerse.

r_1 (Ind.) 15. When we need a solution for a problem in our community, the best way is for the problem to be discussed in a community meeting and to decide the matter by vote. We accept the majority decision even though there are still a great many people who disagree and object to the action.

Espanol

Cuando en nuestra comunidad surge un problema y necesitamos buscarle solucion, lo mejor es llamar a una reunion y decidir la accion a tomar mediante votacion. La decision de la mayoria es aceptada aunque algunos se opongan a la accion a tomar.

r_1 (Ind.) 16. In deciding how to vote in an election, I prefer to make my own decision independently and without regard for the opinion of other family members or relatives.

Espanol

Cuando tengo que decidir como votar en una eleccion, yo prefiero tomar mi propia decision independiente de las opiniones que puedan tener otros miembros de la familia.

r_2 (Coll.) 17. In deciding how to vote in an election, my family discusses the matter until almost everyone agrees on the party or candidate that the family prefers.

Espanol

Para decidir como votar en las elecciones, lo mejor es reunir la familia y discutir el asunto hasta que todos estemos de acuerdo sobre el partido o candidato por el que debemos votar.

r_3 (Lineal) 18. In deciding how to vote in an election, the way my family votes is decided by the oldest member of the family.

Espanol

Para decidir como votar en las elecciones, lo mejor es que sea el jefe de nuestra familia quien tome la decision sobre como todos debemos votar.

r_3 (Lineal) 19. If my brothers and sisters and I inherit a property, it is best for the oldest brother to take charge of, or manage the property.

Espanol

Si mis hermanos y yo heredamos una propiedad lo mas conveniente es que sea el hermano mayor quien se encargue de administrar la misma.

r_1 (Ind.) 20. If my brothers and sisters and I inherit a property, it is best that each of us take his or her own share and do what he or she wants with it.

Espanol

Si mis hermanos y yo heredamos una propiedad lo mas conveniente es que dividamos y cada uno tome su parte de la herencia.

r_2 (Coll.) 21. If my brothers and sisters and I inherit a property, it is best to manage the property together or decide among ourselves who is best to take charge of things.

Espanol

Si mis hermanos y yo heredamos una propiedad lo mas conveniente es administrar la misma entre todos o que el mas capacitado sea quien la administre.

r_1 (Ind.) 22. I prefer to work on my own, to be my own boss.

Espanol

Yo prefiero trabajar por mi cuenta, ser mi propio jefe.

r_2 (Coll.) 23. I prefer to work in groups in which everyone works together and has the same rights and obligations.

Espanol

Yo prefiero trabajar en grupos en que cada uno tenga los mismos derechos y los mismos deberes.

r_3 (Lineal) 24. I prefer to work in groups in which a leader or boss makes the important decisions.

Espanol

Yo prefiero trabajar en grupos donde un lider o jefe haga las decisiones importantes.

III. MAN NATURE ORIENTATION

n_1 (Over) 25. It seems to me that modern scientific discoveries such as antibiotics or preventive vaccines (i.e. polio) constitutes an effective way of increasing life span of man. By using modern scientific discoveries the average life span of human beings can be lengthened.

Espanol

Para mi los descubrimientos de la ciencia moderna, tales como antibioticos, vacunas preventivas (ejemplo la del polio) constituyen uno de los medios mas efectivos para alargar la vida del hombre. A traves de la ciencia el promedio de vida del hombre se alargara.

n_2 (With) 26. I believe that there is a plan to life which works to keep all living things moving together, and if man will learn to live his whole life according to this plan, he will live longer than other men.

Espanol

Yo creo que hay un plan para mantener el equilibrio o balance entre la naturaleza y el hombre. Si el hombre vive en paz con la naturaleza su vida sera mas larga y feliz.

n_3 (Sub) 27. I really do not believe that there is much human beings themselves can do to make the lives of men and women longer. It is my belief that every person has a set time to live, and when that time comes, it just comes.

Espanol

Yo no creo que hay nada que el hombre pueda hacer para alargar la vida de los seres humanos. Credo que cada persona tiene cierto tiempo para vivir y cuando le llega su turno, le llego y se acabo.

n_3 (Sub) 28. I think that all the activities in which human beings engage are subjugated to the natural and supernatural forces that affect life. Man is always subjugated to the fate of nature.

Espanol

Yo credo que todas las actividades en las que participa el hombre estan sujetas al poder de la naturaleza. El hombre siempre esta sujeto a las leyes de la naturaleza.

n_1 (Over) 29. I think that today human beings have the means and power to master the natural and supernatural forces that affect life. Men will be the masters of nature.

Espanol

Yo creo que hoy dia el hombre tiene los medios y el poder para controlar y dominar las fuerzas naturales que afectan la vida. El hombre moderno es el amo de la naturaleza.

n_2 (With) 30. I think that human beings need not be subjugated to natural and supernatural forces that affect their lives, but neither should they ignore them. It is better to live in harmony with nature than to be subjugated to it or to attempt to master it.

Espanol

Yo creo que los seres humanos no deben someterse a las fuerzas naturales, pero tampoco deben desafiarlas. Es mucho mejor vivir en armonia con ellas que someterse a ellas o tratar de dominarlas.

n_3 (Sub) 31. I believe that man can't be blamed for his failures. There are so many things that can and do happen, and man can do almost nothing to prevent such failures. We have to learn to take the bad with the good.

Espanol

Yo no creo que deba culparse al homre por sus fracasos. Hay tantas cosas que ocurren o pueden ocurrir y que el hombre no puede evitar. Lo major es apreder a aceptar las cosas buenas y las malas.

n_2 (With) 32. I believe man can be responsible for his own failures, but natural and supernatural forces also play an important role. To live in harmony with nature is the right thing to do.

Espanol

Yo creo que el hombre en parte es responsable por sus fracasos, pero creo tambien que las fuerzas naturales juegan un papel importante. Lo mejor es vivir en paz y armonia con la naturaleza.

n_1 (Over) 33. Man was created by God, but it is his own effort that determines his own destiny. God helps those who help themselves.

Espanol

Yo creo que Dios creo al hombre, pero es el hombre quien determina su propio destino. Bien dice el refran, "ayudate que Dios te ayudara."

n_{3b} (Sub) 34. Man can never control the rain, winds, and other natural conditions and probably never will. There have always been good and bad years and if one is wise, he will take it as it comes and do the best he can.

Espanol

El hombre nunca podra controlar la lluvia, los vientos y otras condiciones o fuerzas de la naturaleza. Siempre hay anos buenos y malos y si uno es listo toma las cosas como vienen y hace lo mas que puedo.

n_1 (Over) 35. It is man's job to find ways to overcome weather and other conditions, just as he has overcome so many things. Some day man will succeed in mastering droughts and floods.

Espanol

El hombre debe encontrar los medios de controlar las condiciones del tiempo al igual que se ha impuesto a otras cosas. Algun dia el hombre podra dominar las sequias y las inundaciones.

n_2 (With) 36. The best thing to do is to live in harmony with the forces that control the rain, winds, and other natural conditions. To live in harmony with nature is the best way to avoid problems.

Espanol

Lo mejor es vivir en armonia con las fuerzas que controlan la lluvia, el viento y otras condiciones. Vivir en paz con la naturaleza es lo mejor para evitar problemas.

IV. ACTIVITY ORIENTATION

a_3 (Being) 37. I work as hard as the average, but I prefer to use my leisure time visiting with people, going on trips, or just talking with whoever is around.

Espanol

Yo trabajo tan fuerte como el hombre promedio, pero prefiero usar mi tiempo libre visitando mis familiares, amigos o paseando.

a_1 (Doing) 38. I like best of all to use my leisure time doing extra things in my house, business or farm. I am very happy when I am busy and getting a lot of things done. Time is money and to waste my time is to waste my money.

Espanol

Ante todo prefiero usar mi tiempo libre haciendo cosas extra en mi casa, negocio o finca. Me siento feliz cuando estoy ocupado y termino muchas de las cosas que tengo pendientes. El tiempo es dinero, y perder mi tiempo es botar dinero.

a_2 (B3e. in Bec.)

39. I work a little more than the average in doing some extra things in my home, farm or business. However, occasionally I like to enjoy visiting with people, to go on trips, or just to talk with some of my neighbors.

Espanol

Por lo regular yo trabajo un poco mas que el promedio haciendo cosas extras en mi casa, finca o negocio. Sin embargo, de vez en cuando me gusta gozar la vida visitando mis amigos, paseando o conversando con mis amigos.

a_3 (Being) 40. What I care about most is to be left alone to think and act in ways that best suit the way I really am. If I don't always get much done but can enjoy life as I go along, that is the best way.

Espanol

Lo que mas me importa es que me dejen solo para pensar y actuar en la forma que mas se ajuste a mi manera de ser. La vida es corta y hay que gozarla aunque no se obtengan muchos logros.

a_1 (Doing) 41. What I care about most is accomplishing things...getting things done just as well or better than other people do them. I like to see results and think they are worth working for.

Espanol

Lo que mas me importa es lograr mis metas y hacer las cosas tan bien o mejor que las otras personas. Me gusta ver los resultados de mis esfuerzos y creo vale la pena luchar por lo que uno quiere.

a_2 (Be. in Bec.)

42. Sometimes I like to be left alone to think and act in the ways that best suit how I really am and sometimes I like to accomplish things as well as other people. What I like best is to do both--do many of the things that I have to do, but have time left to enjoy life.

Espanol

A veces prefiero estar solo para pensar y hacer lo que quiera. Sin embargo a veces prefiero trabajar fuerte para lograr mis propositos. Aunque trabajo fuerte, me gusta tener mis ratos libres para gozar de la vida.

a_1 (Doing) 43. What I care most about is to teach my sons, when they are young, to work hard. To learn how to work hard for the accomplishment of their goals is the best insurance for a successful life.

Espanol

Lo que mas me interesa es ensenar a mis hijos, desde pequenos a trabajar fuerte por lo que desean. Trabajar fuerte por lo que se desea es el mejor seguro para el exito en la vida.

a_2 (Be. in Bec.)

44. In raising my children what I care most about is to bring them up in a way that they learn to work for what they want, but at the same time to enjoy life. To teach them to balance their play and work time is the best way to raise them.

Espanol

Para mis hijos lo que mas me interesa es ensenarles a trabajar fuerte por lo que desean, pero a la vez que aprendan a disfrutar o gozar la vida. Les enseno a mantener un balance entre el juego y el trabajo.

a_3 (Being) 45. In raising my children, what I care most about is to provide them all the happiness that I can. Children are children and while they are young they have to play and enjoy life, because later life will be hard for them.

Espanol

En la crianza de mis hijos lo que mas me importa es darles toda la felicidad que yo pueda. Los ninos son ninos y mientras estan en su ninez ellos tienen que gozar la vida porque cuando sean grandes la vida sera muy fuerte para ellos.

a_1 (Doing) 46. In my leisure time what I like best is to read about new things and to do some kind of productive work.

Espanol

En mi tiempo libre lo que mas me gusta es leer sobre cosas nuevas y hacer alguna clase de trabajo productivo.

a_3 (Being) 47. In my leisure time what I like most is to talk with my friends or to have some kind of fun. Life is so short that we have to enjoy it.

Espanol

En mi tiempo libre lo que mas me gusta es charlar con mis amigos o pasar un buen rato en cosas que no se relacionen con mi trabajo. La vida es muy corta y tenemos que gozarla.

a_2 (Be. in Bec.)

48. In my leisure time what I like best is to use some of my time learning or trying out new things and part of it having fun with my friends.

Espanol

En mi tiempo libre lo que mas me gusta es usar parte del mismo haciendo algun trabajo que me beneficie y parte del mismo gozando la vida--por ejemplo, dando chiste con mis amigos o vecinos.

APPENDIX E

Use of Instructional Media Questionnaire

CUESTIONARIO USO DE LOS MEDIOS INSTRUCCIONALES

Este cuestionario ha sido diseñado para proveer información en torno a la frecuencia en el uso de los medios instruccionales en el salón de clase. La Facultad del Recinto de Ciencias Médicas de la Universidad de Puerto Rico ha sido escogida para participar en este estudio. La información obtenida en el estudio será confidencial. Muchas gracias por su cooperación.

Por favor conteste las siguientes preguntas:

1. Nivel educativo alcanzado

   ____ Doctorado ____ Maestría ____ Bachillerato ____ Otro

   _____
   (Favor especificar)

2. Rango Académico

   ____ Catedrático ____ Catedrático Asociado ____ Catedrático Auxiliar

   ____ Instructor ____ Conferenciante ____ Otro _____
   (Favor especificar)

3. Facultad a la cual pertenece _____

4. Total de años de experiencia enseñando incluyendo nivel elemental y secundario.
   _____

5. ¿Cuántos cursos ha enseñado usted durante este semestre académico? _____

6. Edad _____

7. Sexo _____

8. ¿Ha tomado usted entrenamiento o curso en educación audiovisual?

   Sí _____ No _____

9. ¿Ha desarrollado alguna producción audiovisual? _____
   Si su contestación es afirmativa, favor especificar.

   _____

   _____

10. ¿Ha tomado usted algún entrenamiento o curso sobre la instrucción asistida por computadora?

    Sí _____ No _____

11. A continuación encontrará una lista de material y/o equipo audiovisual. Indique cuantas veces ha usado cada uno de ellos durante este semestre académico dibujando un círculo alrededor del número seleccionado en la escala.

Láminas	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 o más
Películas de movimiento	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 o más
Modelos	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 o más
Vistas fijas (diapositivas)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 o más
Filminas	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 o más
Proyector Opaco	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 o más
Proyector vertical (transparecencias)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 o más
Grabadora	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 o más
Televisión Educativa (videograbadoras)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 o más
Gráficas	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 o más
Diagramas	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 o más
Especímenes	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 o más
Computadoras (Microcomputadora)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 o más

12. Indique cuán frecuentemente usted ha usado la computadora y/o microcomputadora para algún propósito personal (Ejemplo: investigación, simulación, etc. Circule el número en la escala que este de acuerdo con su mejor criterio.

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 o más

FREQUENCY OF MEDIA USE QUESTIONNAIRE

This questionnaire is designed to provide information about the frequency of use of instructional media in the classroom. The faculty of Medical Science campus of the University of Puerto Rico is being contacted in order to assist with this study. The information obtained from the study will be kept strictly confidential.

Please answer the following questions:

1. Highest degree level earned

   _____Doctoral
   _____Masters
   _____Bachelors
   _____Other Please specify_____

2. Faculty Rank

   ____Professor ____Instructor
   ____Associate ____Lecturer
   ____Assistant ____Other _____
   Please Specify

3. School Associated With_____

4. Total number of years of teaching including any elementary or secondary experience. _____

5. How many courses have you taught during this academic semester? _____

6. Age _____

7. Sex _____

8. Have you ever taken training or courses in audiovisual education?

   ____ Yes _____ No

9. Have you done any audiovisual production? _____

If your answer is affirmative, please specify.

_____

_____

10. Have you ever taken a course in computer assisting instruction?

_____ Yes _____ No

11. Included here is a list of audio-visual materials and/or equipment. How many times would you say you used them during this academic semester? Please circle the number in the scale that agrees with your best judgment.

flat pictures	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 or more
sound motion films	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 or more
models	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 or more
slides	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 or more
filmstrips	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 or more
opaque projection	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 or more
overhead projection (transparencies)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 or more
tape recorder	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 or more
educational TV (video-cassettes)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 or more
graphs	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 or more
diagrams	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 or more
specimens	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 or more
computers	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 or more

12. Indicate how frequently you have used computers during this semester for personal purpose (for example for research). Please circle the number in the scale that agrees with your best judgment:

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 or more

APPENDIX F

Consent Forms

THE RELATIONSHIP BERWEEN VALUE ORIENTATIONS
AND THE PERCEPTION OF MEDIA UTILIZATION IN
THE CLASSROOM BY UNIVERSITY PROFESSORS

CONSENT FORM

The study in which I have been asked to participate has the purpose to investigate the relationship berween value orientations and the use of instructional media in the classroom by university professors.

In this study I will answer two questionnaires. In the Value Orientation Instrument I will rank order some opinion cards. In the Use of Instructional Media Questionnaire I will indicate the frequency I have used the media during this academic semester, also I will rank the factors that inhibit the professor in using the instructional media in the classroom.

I understand that the participation in this study is on a voluntary basis and that I may withdraw from it at any time. I understand that I will not receive any payment for my participation in the investigation.

My identity will be kept strictly confidential and my name will not be used in any publication or references on the matter.

I understand that in the event of physical or mental injury resulting from this research study, no financial compensation is available, but I will receive medical treatment free of charge at the University Hospital or at any other hospital designated by the Chancellor of the Medical Science Campus of The University of Puerto Rico.

_____ _____

Professor's signature Date

LA RELACION ENTRE LA ORIENTACION DE VALORES Y LA PERCEPCION DE LA UTILIZACION DE LOS MEDIOS INSTRUCCIONALES EN EL SALON DE CLASE POR PROFESORES UNIVERSITARIOS

El estudio en el cual se me ha pedido que participe tiene como propósito investigar la relación entre la orientación de valores y el uso de los medios instruccionales en el salón de clase por profesores universitatios.

En este estudio contestaré dos cuestionarios. En el instrumento de Orientacion de Valores, categorizaré unas tarjetas de opiniones. En el cuestionario del Uso de los Medios Instruccionales indicaré la frecuencia con que he usado los medios durante este semestre académico y además categorizaré los factores que inhiben al profesor ha usar los medios instruccionales en el salón de clase.

Entiendo que mi participación en este estudio es voluntaria y que podré retirarme del mismo en cualquier momento. Entiendo que no recibiré remuneración por participar en la investigación.

Mi identidad se mantendrá en estricta confidencialidad y no se usará en ninguna publicación o referencia sobre el particular. Entiendo que puedo hacer libremente preguntas concernientes a este estudio.

Entiendo que en caso de que yo sufra algún daño físico o mental por haber participado como voluntario en este estudio, no recibiré compensación económica, pero sí tratamiento médico sin costo alguno en el Hospital Universitario o en cualquier otro hospital que designe el Rector del Recinto de Ciencias Médicas de la Universidad de Puerto Rico.

_____ _____

Firma del profesor Fecha

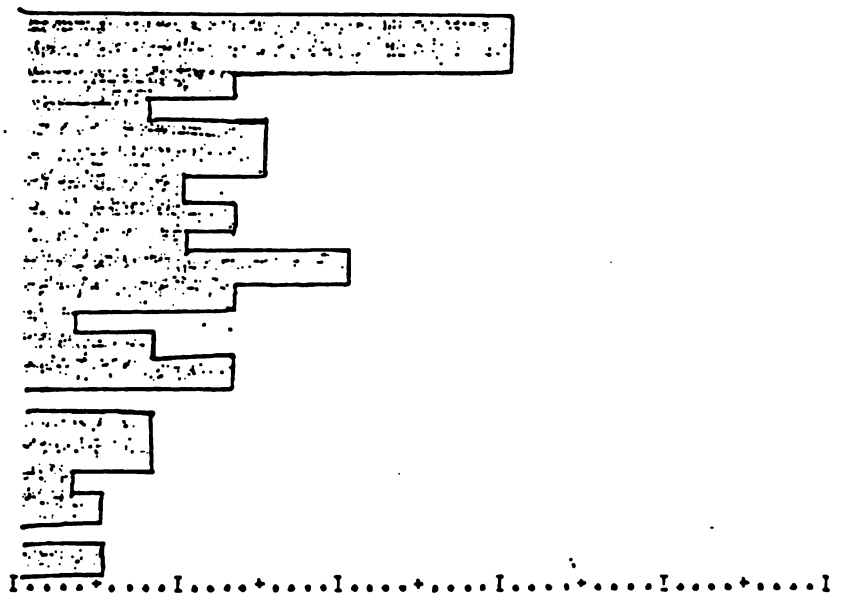
APPENDIX G

Frequencies and Histograms

VC VERY COMMON MEDIA SCORE

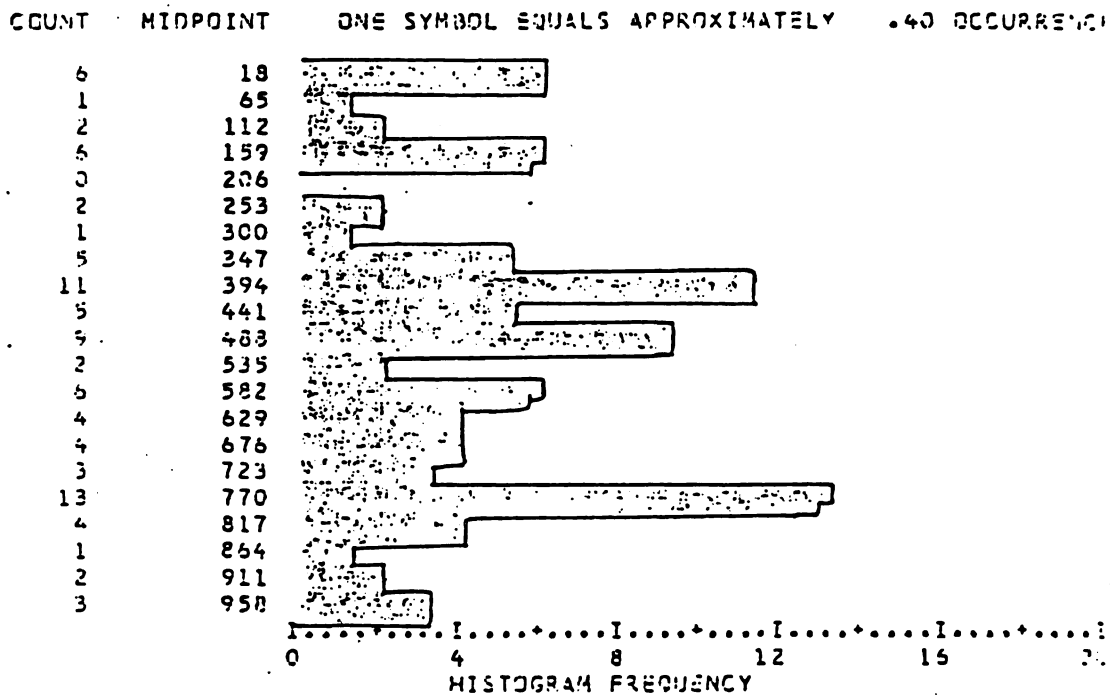
VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
0	6	7	7	228	1	1	43	514	1	1	79
14	2	2	9	242	1	1	44	571	2	2	81
28	4	4	13	257	4	4	49	600	1	1	82
42	1	1	14	285	1	1	50	628	1	1	83
57	7	8	22	300	2	2	52	642	4	4	88
61	1	1	23	314	1	1	53	714	1	1	89
71	2	2	26	342	1	1	54	728	2	2	91
85	1	1	27	357	4	4	59	757	1	1	92
100	2	2	29	371	2	2	61	758	1	1	93
114	1	1	30	400	2	2	63	785	1	1	94
117	1	1	31	428	5	6	69	828	1	1	95
128	1	1	32	442	2	2	71	857	2	2	98
157	2	2	34	457	1	1	72	957	1	1	99
171	1	1	36	471	1	1	73	971	1	1	100
185	1	1	37	485	1	1	74				
214	5	6	42	500	3	3	78				

COUNT	MIDPOINT	ONE SYMBOL EQUALS APPROXIMATELY .40 OCCURRENCES
12	16	
12	63	
5	110	
3	157	
6	204	
5	251	
4	298	
5	345	
4	392	
6	439	
5	486	
1	533	
3	580	
5	627	
0	674	
3	721	
3	768	
1	815	
2	862	
0	909	
2	956	



C COMMON MEDIA SCORE

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
0	1	1	1	375	9	10	36	700	1	1	72
25	5	6	7	400	2	2	38	725	2	2	74
50	1	1	8	425	3	3	41	750	13	14	89
100	1	1	9	450	2	2	43	800	2	2	91
125	1	1	10	475	3	3	47	825	2	2	93
150	2	2	12	500	6	7	53	850	1	1	94
175	4	4	17	525	1	1	54	900	1	1	96
250	1	1	18	550	1	1	56	925	1	1	97
275	1	1	19	575	2	2	58	950	2	2	99
300	1	1	20	600	4	4	62	975	1	1	100
325	2	2	22	625	4	4	67				
350	3	3	26	675	4	4	71				



MEAN	502.500	STD DEV	252.906	MINIMUM	.000
MAXIMUM	975.000				

VALID CASES 90 MISSING CASES 0

LC LESS COMMON MEDIA SCORE

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
0	42	47	47	225	1	1	80	700	1	1	92
50	8	9	56	250	5	6	86	750	5	6	98
100	5	6	61	400	3	3	89	850	2	2	100
150	8	9	70	450	1	1	90				
200	8	9	79	600	1	1	91				

COUNT	MIDPOINT	ONE SYMBOL EQUALS APPROXIMATELY 1.00 OCCURRENCE
42	15	
8	56	
5	97	
8	138	
0	179	
9	220	
5	261	
0	302	
0	343	
3	384	
0	425	
1	466	
0	507	
0	548	
1	589	
0	630	
0	671	
1	712	
5	753	
0	794	
2	835	

I....+....I....+....I....+....I....+....I....+....I....+....I
0 10 20 30 40 50

HISTOGRAM FREQUENCY

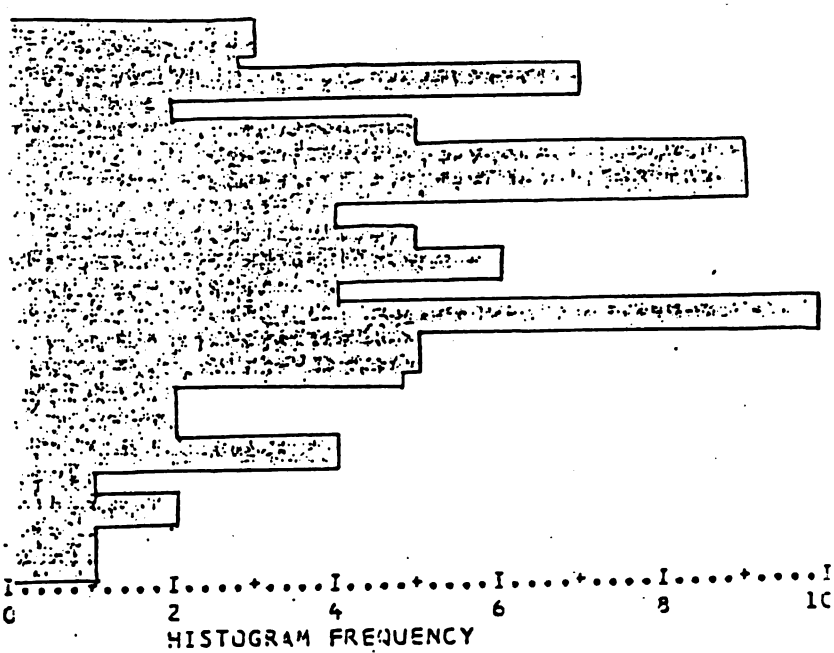
MEAN 150.833 STD DEV 229.204 MINIMUM .000
MAXIMUM 850.000

VALID CASES 90 MISSING CASES 0

TM TOTAL MEDIA SCORE

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
15	1	1	1	253	4	4	37	500	3	3	78
23	2	2	3	261	1	1	38	515	1	1	79
53	1	1	4	269	2	2	40	523	1	1	80
61	1	1	6	276	2	2	42	530	2	2	82
76	1	1	7	307	2	2	44	546	1	1	83
92	2	2	9	323	2	2	47	553	2	2	86
107	2	2	11	338	1	1	48	576	1	1	87
115	2	2	13	346	3	3	51	579	1	1	88
123	1	1	14	353	1	1	52	615	1	1	89
146	1	1	16	369	2	2	54	623	1	1	90
153	1	1	17	376	1	1	56	646	1	1	91
169	2	2	19	384	3	3	59	653	2	2	93
194	2	2	21	415	1	1	60	669	1	1	94
200	1	1	22	423	1	1	61	715	1	1	96
207	1	1	23	430	2	2	63	753	2	2	98
215	1	1	24	461	4	4	68	792	1	1	99
223	2	2	27	469	3	3	71	836	1	1	100
230	3	3	30	476	1	1	72				
238	2	2	32	484	2	2	74				

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY .20 OCCURRENC



MEAN 359.611 STD DEV 195.669 MINIMUM 15.000
MAXIMUM 836.000

VALID CASES 90 MISSING CASES 0

APPENDIX H

Letters

23 de octubre de 1985

Dr. Ramón Claudio
Decano de Asuntos Académicos
Recinto de Ciencias Médicas

Estimado Dr. Claudio:

Soy una estudiante del nivel doctoral de la Universidad del Estado de Michigan. Mi área de especialización es Desarrollo de Sistemas Educativos. En estos momentos estoy en la etapa final del doctorado la cual conlleva la realización de una investigación.

El tema que voy a investigar es la relación entre la orientación de valores y el uso de los medios instruccionales en el salón de clase por profesores universitarios. Me gustaría poder llevar a cabo este estudio en el Recinto de Ciencias Médicas de la Universidad de Puerto Rico, ya que es uno de los recintos del sistema universitario donde mas avances en el campo de la tecnología educativa se han realizado.

Quisiera concertar una cita con usted para cambiar impresiones sobre el tema y estudiar la posibilidad de poder realizar el estudio en el Recinto de Ciencias Médicas.

Le estoy incluyendo un resumen de la propuesta de tesis.

Atentamente,

Cynthia Lucena

Cynthia Lucena
708 F. Marchena
Fairview
Río Piedras, P.R. 00926

Tel. 755-2853

English Translation

October 23, 1985

Dr. Ramon Claudio
Dean of Academic Affairs
Medical Science Campus
Rio Piedras, P.R.

Dear Dr. Claudio:

I am a doctoral student from Michigan State University. My major area is Educational Systems Development. At this moment, I am in the final stage of my doctorate which consists of the realization of an investigation.

The topic I will be investigating is the Relationship between the Value Orientations and the Use of Media by University Professors. I would like to do this study in the Medical Sciences Campus of the University of Puerto Rico. Since this is one of the campus of the University system were more advances in the field of Educational Technology have been taking place.

I would like to make an appointment with you to explain to you the study and ask your permission to do the study in the Medical Science Campus.

I am enclosing a summary of the thesis proposal.

Sincerely,

Cynthia Lucena

UNIVERSIDAD DE PUERTO RICO, RECINTO DE CIENCIAS MEDICAS
UNIVERSITY OF PUERTO RICO, MEDICAL SCIENCES CAMPUS

Decanato de Asuntos Académicos
Office of the Dean for Academic Affairs

28 de enero de 1986

Sra. Cynthia Lucena
Fray Marchena #708
Fairview
Río Piedras, PR 00926

Estimada señora Lucena:

Le hemos autorizado para hacer el estudio sobre la Relación Entre la Orientación de Valores y el Uso de los Medios Instruccionales en el salón de clases por Profesores universitarios.

Cordialmente,

Eddie Aguilú Semidey
Decano Auxiliar para
Desarrollo Académico

/moo
EAS11 013

English Translation

January 28, 1986

Mrs. Cynthia Lucena
708 Fray Marchena St.
Fairview
Rio Piedras, PR 00126

Dear Mrs. Lucena:

We have authorized you to do in the study of the Relation Between Value Orientations and the Use of Instructional Media in the Classroom by University Professors.

Cordially,

Eddi Aguilu Semidey
Auxiliar Dean for
Academic Development

Dr. Enrique Vélez García
Presidente
Comité de Derechos Humanos (IRB)
Recinto de Ciencias Médicas
Río Piedras, P. R. 00936

Estimado Dr. Vélez García:

Soy una estudiante del nivel doctoral de la Universidad Estatal de Michigan. Mi área de especialización es Desarrollo de Sistemas Educativos. En estos momentos estoy en la etapa final del doctorado la cual conlleva la realización de una investigación.

El tema que estoy investigando es la relación entre la orientación de valores y el uso de los medios instruccionales en el salón de clase por profesores universitarios. Solicité se me permitiese hacer ésta investigación en el Recinto de Ciencias Médicas, permiso que me fue otorgado.

Estoy sometiendo al Comité de Recursos Humanos los documentos requeridos para solicitar autorización para realizar el estudio con los profesores del Recinto. Los documentos que incluyo adjunto son los siguientes: propuesta de tesis, resumen de propuesta, cuestionarios, hojas de consentimiento, copia de carta al Dr. Ramón Claudio y copia de carta dirigida a la facultad del Recinto.

Muchas gracias por la cooperación que pueda brindarme al respecto.

Cordialmente,

Cynthia Lucena

Cynthia Lucena
708 Fray Marchena
Fair View
Río Piedras, P. R. 00926

English Translation

Dr. Enrique Velez Garcia
President
Committee for the Protection of Human Rights
Medical Sciences Campus

Dear Dr. Velez:

I am a doctoral student at Michigan State University. My major field is Educational Systems Development. At this moment, I am in the last stage of the doctoral program which is the realization of an investigation.

The topic I am investigating is the Relationship Between Value Orientatins and the Use of Instructional Media in the Classroom by University Professors. I asked permission to do the investigation in the Medical Sciences Campus. The permission was granted.

I am submitting to the Committee of the Protection of Human Rights required documents for requesting permission for the realization of the study with the professors of the campus. The documents that I am enclosing are the following: thesis proposal, summary of proposal, questionnaires, consent forms, copy of the letter sent to Dr. Ramon Claudio and letter sent to the faculty of the campus.

Thank you very much for the cooperation that you could give me.

Cordially,

Cynthia Lucena

UNIVERSITY OF PUERTO RICO, MEDICAL SCIENCES CAMPUS G.P.O. BOX 5067 SAN JUAN, PUERTO RICO 00936-TEL. 753-5353

OFFICE OF THE CHANCELLOR

COMMITTEE FOR THE PROTECTION OF HUMAN RIGHTS(IRB)

TO : Cynthia Lucena
Principal Investigator
College of Education
Michigan State University

FROM : José Vázquez Calzada, Ph.D.
Acting President
Institutional Review Board
Medical Sciences Campus

DATE : April 20, 1986

SUBJECT : The Relationship between Value Orientations and the Perception of Media Utilization in the Classroom by University Professors

This is in reference to the above mentioned protocol, submitted by you to the Institutional Review Board (IRB) of the Medical Sciences Campus. This protocol was revised at the meeting held on April 17, 1986.

It is a pleasure to inform you that this protocol was approved.

iav/

INIVERSIDAD DE PUERTO RICO, RECINTO DE CIENCIAS MEDICAS G.P.O. BOX 5067 SAN JUAN, PUERTO RICO 00936—TEL. 758-2525

DECANATO DE ASUNTOS ACADEMICOS

Hemos autorizado a la estudiante graduada Cynthia Lucena, a realizar un estudio sobre el uso de los medios instruccionales en el salón de clases. Los resultados de éste estarán disponibles a todos los Decanatos. Entendemos que el estudio será de gran utilidad para orientar las acciones del Decanato de Asuntos Académicos, y poder servir mejor a la comunidad académica.

Usted ha sido seleccionada, por medio de un muestreo aleatorio de la facultad del Recinto, para participar en el estudio. La señora Lucena se pondrá en contacto con usted para solicitar su cooperación y coordinar una fecha de la reunión para administrar los instrumentos. Confío que pueda usted participar. Estimamos que la contestación de los dos instrumentos le tomará alrededor de 45 minutos.

Le damos las gracias anticipadas por la cooperación que usted pueda darnos para lograr el éxito de este estudio.

Cordialmente,

Amalia Martínez Picó, M.D., F.A.C.C.
Decana de Asuntos Académicos

English translation of letter sent to the professors selected in the sample

We have authorized the graduate student Cynthia Lucena to realize a study about the use of instructional media in the classroom. The results of the study will be of great utility to all the Deanships. We understand that the study will be of a great utility for the orientation of the actions of the Deanship of Academic Affairs, in order to serve better the academic community.

You have been selected by means of a random sample procedures of the faculty of the Campus, to participate in the study. Mrs. Lucena will get in contact with you to ask for your cooperation and coordinate a date were the instruments will be administered. I hope you will be able to participate. We estimate that the answering to the instruments will take you around 45 minutes.

Giving you anticipating thanks for the cooperation you could give for the success of the study.

Cordially,

Amalia Martinez Pico, M.D.
FACC
Dean of Academic Affairs

July 23, 1986

Dr. Amalia Martinez Pico
Dean of Academic Affairs
Medical Science Campus
University of Puerto Rico

Dear Dr. Martinez Pico:

Last month I finished collecting the data for the investigation that I am realizing in the Medical Sciences Campus. The data analysis could be done in a micro-computer statistical package. The Office of Educational Development have indicated that they have the statistical package I will be needing.

I would like to ask for your permission to use one of the micro-computers for the analysis of the data of the study.

Thank you for the cooperation you could give me.

Sincerely,

Cynthia Lucena

UNIVERSIDAD DE PUERTO RICO
RECINTO DE CIENCIAS MEDICAS
DECANATO DE ASUNTOS ACADEMICOS
APARTADO 5067 CORREO GENERAL, SAN JUAN, PUERTO RICO 00936 ••• TELEFONO 758-2525 EXT. 1717

29 de julio de 1986.

Sra. Cynthia Lucena
c/d División de
Desarrollo Educativo
Decanato de Asuntos Académicos
Recinto de Ciencias Médicas

Estimada señora Lucena:

Saludos.

Acuso recibo de su carta del 23 de julio de 1986, en la que solicita usted autorización para utilizar un programa estadístico de correlaciones para analizar los datos de su estudio en una microrordenadora de la oficina de Desarollo Educativo.

He dado instrucciones a la profesora Amelia Q. Seijo, Directora del Centro IAC, para que le preste la ayuda requerida.

¡Exito en su investigación!

Cordialmente,

Amalia Martínez Pico, MD, FACC
Decana

AMP/NP/np

July 29, 1986

Mrs. Cynthia Lucena
c/o Educational Development Division
Deanship of Academic Affairs
Medical Sciences Campus

Dear. Mrs. Lucena:

Salute

Acknowledgement of receipt of your letter of July 23, 1986, in the one you are requesting authorization for the utilization of a statistic program for the analysis of the data of your study in a micro-computer of the Office of Educational Development.

I have given instructions to Professor Amelia Q. Seijo, Director of the Center IAC, to give you the requested help.

Success in your investigation!

Cordially,

Amalia Martinez Pico, M.D., FACC

April 20, 1987

TO WHOM IT MAY CONCERN

I hereby certify that Mrs. Cynthia Lucena has my permission to quote me from my doctoral dissertation in her doctoral thesis, on the condition that acknowledgement is made.

Cordially,

Dr. Otis Oliver Padilla, Ph. D.
1672 Asomante St.
Summit Hills,
Río Piedras, P. R.

The quotes were made from the dissertation: The Role of Value and Channel Orientation in the Diffusion of New Ideas and Practices: A Puerto Rican Dairy Farmer Study.

September 1, 1986

TO WHOM IT MAY CONCERN

I hereby certify that Mrs. Cynthia Lucena has my permission to use in her Doctoral Dissertation the value instrument used by this author in his Doctoral Thesis.She also has the authorization to modify any part of the instrument to improve its confiability and validity.

Cordially,

Dr. Otis Oliver Padilla, Ph.D.
Asomante 1672, Summit Hills
Río Piedras, Puerto Rico
Tel. 792-6724

The value instrument was used in the Dissertation - The Role of Values and Channel Orientations in the Diffusion of New Ideas and Practices- A Puerto Rican Dairy Farmers Study.

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