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ABSTRACT

A relationship exists between attitudes and some behaviors, and learners' attitudes are definitely influenced by mediated instruction. Attitudes can be defined and measured, using systematic processes such as self-reports, reports of others, sociometric procedures, or records. Researchers have examined the relationship between attitude positions and message design, so that a tentative set of guidelines for the relationship between these two variables could be proposed. Simonson (1979) suggested that favorable reactions toward instruction are developed by (1) using realistic, relevant, and technically stimulating media; (2) including new information; (3) presenting messages credibly; (4) involving learners in planning, production, or delivery of mediated instruction; (5) including guided post-instruction discussions and critiques; and (6) having learners experience purposeful, emotional involvement during instruction. A more definitive set of recommendations is needed. Media-attitude research has often had problems of definition, measurement, design, and follow-up. Future research requires attention to instrumentation, experimentation, media-aptitude-attitude interaction, and theory-based research. This paper includes 46 references. (LMM)

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THE IMPACT OF MEDIATED INSTRUCTION ON THE
FORMATION AND CHANGE OF ATTITUDES

by

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The Impact of Mediated Instruction on the Formation and Change of Attitudes

In 1931, Thurstone was able to demonstrate that attitudes can be changed with media. Two films depicting Chinese favorably or unfavorably were shown to groups of students. While this type of research would not be socially acceptable today, it was found that attitudes towards Chinese were changed in either a positive or negative direction, depending on the intent of the motion picture. Thurstone's initial efforts provided a foundation for a large number of research studies on the relationship between attitude formation and change and persuasive messages delivered by media. A review of over 200 of these studies by Simonson (1979c; 1980) are the basis for the discussion below.

This paper will discuss why attitude media research is important, will review the current state of the art of research in this area, will present the problems researchers in this area have encountered, and will make recommendations for future research needs.

Why Study Attitudes?

A critic of attitude research might ask several questions about the importance of this area of research.

Question #1 - What is an attitude?

#2 - Why should research on the relationship between attitude and media be conducted?

#3 - How are attitudes measured?

#4 - How are messages constructed so attitudes are influenced?

#1 - What is an attitude?

Attitude has been a difficult concept to adequately define, primarily because it has been defined by so many, but also because of its many lay uses and connotations. One of the earliest, and most widely accepted, definitions of attitude was proposed by Thomas and Znaniecki (1918). They defined attitude as:

A mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related (Thomas and Znaniecki, 1918).

In other words, while attitudes are latent and not directly observable in themselves, they do act to organize, or to provide direction to, actions and behaviors that are observable. Also, attitudes vary in direction, either positive or negative; in degree, the amount of positiveness or negativeness; and in intensity, the amount of commitment with which a position is held (Fleming and Levie, 1978).

Additionally, attitudes have three components: affective, cognitive, and behavioral (Zimbardo and Ebbeson, 1970). The affective component is said to consist of a person's evaluation of, liking of, or emotional response to some object or person. The cognitive component is conceptualized as a person's beliefs about, or factual knowledge of, the object or person. The behavioral component involves the person's overt behavior directed toward the object or person.

By applying these definitions and explanations researchers have attempted to evaluate the impact various instructional procedures have had on attitude formation and change.

#2 - Why media-attitude research?

Most educational endeavors, including research, are concerned with producing or evaluating human behavior. The improvement of achievement and the modification of unacceptable or discordant actions are examples of the type of behavioral outcomes that often concern educators. Research dealing with the media-attitude (M-A) relationship has often attempted to determine if there is an identifiable relationship between what a student likes or dislikes about the form in which a concept is presented and how much is learned. The media-attitude-achievement link appears to be present because:

1. A positive link between learner attitude toward content information and achievement has been identified by numerous researchers (Fenneman, 1973; Greenwald, 1965, 1966; Levy, 1973; Perry and Kopperman, 1973; Simonson, 1977; Simonson & Bullard, 1975)
2. A preference (affect) for mediated instruction by learners has been found in experiments conducted by several media researchers (for example, Dambrot, 1972; Redemsky, 1959).

While this positive link between attitude and achievement has been identified by some, most researchers have been reluctant to propose any cause and effect relationship between these two learner variables. The reason for the researcher to be concerned with attitude positions resulting from instruction should not be based primarily on the impact of attitude on achievement. Rather, the development of a more favorable attitude toward instruction or subject area is a desirable end in itself. Fleming and Levie (1978) have proposed several reasons why the instructional developer should be interested in the attitudes of students. First, most teachers would agree that there are cases when it is legitimate, and important, to urge learners to accept the truth of certain ideas. In

other words, to promote an attitudinal position. Second, as stated above, while the relationship between attitudes and learning is unclear it seems to be common sense that students are more likely to remember information, seek new ideas, and continue studying when they react favorably to an instructional method and certain content areas. Third, the educator should be made aware of procedures that are likely to influence attitudes in one direction or another so that bias can be reduced when inappropriate. Last, attitudes toward instruction felt by learners can tell the teacher a great deal about the impact of that instruction on the learning process. In other words, we need to assess the opinions of our students toward the learning activities we are subjecting them to, if for no other reason than to improve the quality of our procedures.

#3 - How attitudes are measured.

Since attitudes are defined as latent, and not observable in themselves, the researcher must identify some behavior that would seem to be representative of the attitude in question so that this behavior might be measured as an index of the attitude construct. This characteristic of attitude measurement is justifiably the most criticized limitation of this area of educational evaluation. However, without going into the question of the overall validity of attitude measurement, there are several generally recognized procedures used to determine an individual's, or group's attitude toward some object or person. It is those procedures that are described below.

Characteristics of Measurement

Before procedures for measuring attitudes are discussed, there are several characteristics of measurement, in general, that should be

considered in order to determine if an evaluation technique is an effective one. Good tests have these characteristics. They should:

- be valid -- the instrument must be appropriate for what needs to be measured;
- be reliable -- the measure should yield consistent results;
- be fairly simple to administer, explain, and understand -- generally, the measures that yield a single "score" of an attitude position epitomize the intent of this characteristic, although the single "score" may be deficient in meeting the intent of other characteristics of good measurement; and
- be replicable -- someone else should be able to use a measure on a different population, or in a different situation, to measure the same attitude.

Categories of Attitude Measurement

There are four categories, or approaches, for collecting attitude information. These approaches are:

- self-reports -- where the members of a group report directly about their own attitudes;
- reports of others -- where others report about the attitudes of a person or group;
- sociometric procedures -- where members of a group report about their attitudes toward one another; and
- records -- which are systematic accounts of regular occurrences, such as attendance reports, sign-in sheets, library check-out records, and inventories.

Within each of these categories there are strategies for measuring attitude-related behaviors. Most commonly, attitude measurement is

accomplished by one of the following techniques:

- questionnaires;
- rating scales;
- interviews;
- written reports;
- observations; or
- sociometrics

A specific strategy for attitude measurement should be chosen that is appropriate for the type of attitude construct of interest, the type of learners, and the situation being examined. (See Henerson, 1978, for specific details.)

Process for Attitude Measurement

Any attempt at measurement, including the evaluation of attitude, requires that a systematic process be followed. Such structured procedures do not guarantee an effective measurement, but they will increase the likelihood of this occurring. Generally, there are six steps to be followed during the attitude measurement process.

1. Identify the attitude construct to be measured.
2. Find an existing measure of the attitude construct.
3. Construct an attitude measure, if an existing measure is not available.
4. Pilot test the measure on a group similar to the one to be evaluated.
5. Obtain and approve reliability and validity data.
6. Revise the measure and use it. (See Simonson, 1979a, for a complete discussion of attitude measurement.)

#4 - How are attitudes changed by media?

Psychological researchers have proposed a number of theories of attitude change (Insko, 1967). While these theories provide general information about the attitude change process, they are not especially useful to the instructional developer who wants to design instruction that is intended to change attitudes, or to the researcher who wants to evaluate the impact of some media treatment on an attitude variable.

Based on a review of over 200 research studies dealing with attitude formation and change and instructional media, Simonson (1979b) was able to propose six guidelines that if included in the planning, production or use of instructional media would hypothetically contribute to the development of desired attitude outcomes in learners. These guidelines were an attempt to translate general theoretical information and specific research results into a series of procedures that could be reliably applied in the message design process.

These six guidelines, and a sample of the research studies that support them are: (Note: Refer to Simonson, 1979, for a more complete discussion).

Guideline #1: Learners react favorably to mediated instruction that is realistic, relevant to them, and technically stimulating. (Levonian, 1960; 1962; 1963; Seiler, 1971; Klapper, 1958; Croft, et al., 1969; Donaldson, 1976; Booth and Miller, 1974; Winn and Evertt, 1978; Ganschow, 1970)

Guideline #2: Learners are persuaded, and react favorably, when mediated instruction includes the presentation of new information about the topic. (Jouko, 1972; Knowlton

and Hawes, 1962; Peterson and Thurstone, 1933; Levonian, 1960, 1962, 1963)

Guideline #3: Learners are positively affected when persuasive messages are presented in as credible a manner as possible. (Kishler, 1950; Seiler, 1971; O'Brien, 1973)

Guideline #4: Learners who are involved in the planning, production, or delivery of mediated instruction are likely to react favorably to the instructional activity and to the message delivered. (Erickson, 1956; Coldevin, 1975; Simonson, 1977; Goldman, 1969)

Guideline #5: Learners who participate in guided post-instruction discussions and critiques are likely to develop favorable attitudes toward delivery method and content. (Allison, 1966; Fay, 1974; Domyahn, 1972)

Guideline #6: Learners who experience a purposeful emotional involvement or arousal during instruction are likely to change their attitudes in the direction advocated in the mediated message. (Janis and Feshbach, 1953; Rogers, 1973; Miller, 1969)

While these guidelines are derived from research studies that dealt with attitude formation and change, it is important to remember that the studies were conducted prior to the development of the guidelines. Post-hoc evaluation of each guideline and of groupings of guidelines has just begun (Kloock, Simonson and Cook, 1982; and Simonson, 1982; for example).

Problems in Media-Attitude Research

Although this discussion does not attempt an in-depth analysis of research and research design, there are four prevalent characteristics that often have marred M-A research.

Definitions

"Attitude," a difficult concept to define, has been used in such a broad, all-inclusive way that a single definition used by all attitude researchers is not possible. However, it is imperative for future research that whenever "attitude" is measured the experimenter define what is meant by that term in that research situation. This definition should be based on attitude literature and should be stated clearly for the research consumer. A common fault of the research was the failure to define "attitude".

Measurement

It has been said that an experimental treatment is only as good as the measure used to determine its success. The measures used in studies reported in much of the media-attitude literature often have been faulty. In more than 50% of the 200 studies reviewed by Simonson (1979c, 1980) no validation of the attitude measurement tool appeared to have been attempted. Fewer than 20% reported any descriptive information about their attitude tests. Most measures seemed to have been prepared locally and intended for use only once--in the specific study reported.

Design

Studies that were conducted prior to Campbell and Stanley's (1963) publication on research design can possibly be forgiven for not using generally accepted experimental procedures to test attitude hypotheses.

Of greater concern was the poor design and control procedures used in more recent studies. This problem was compounded by the fact that attitude measurement often was not of primary concern to many researchers, but rather was a post-hoc analysis that had peripheral importance and connection to the main purposes and design of the study. Attitude hypothesis testing should demand the same design rigor as the testing of any experimental question.

Follow-Up

Long-term follow-up of the results of treatments is almost nonexistent in M-A research. Many critics of attitude research consider attitudes transitory and attitude changes short-lived. While there is some evidence in the psychological literature on attitudes to refute that criticism, the long-term consequences of mediated instruction on learner attitude needs considerably more evaluation.

Future Research Needs

It often seems much easier to criticize the literature of our profession than to create or recommend. The observations listed above were based on an in-depth review of the M-A research. These trends seemed obvious and would have been obvious to any serious student of the M-A literature. It follows that these trends suggest needs for future research.

Instrumentation

Attitude measurement is difficult, but difficulty is a poor excuse for the use of haphazardly constructed and unvalidated measurement tools. Reliability of attitude scales can and should be determined before use.

Measures should be pilot tested, and this information, as well as all descriptive information concerning measurement instruments used to test M-A hypotheses, should be reported.

While attitude scales (Likert and Guttman, for example) probably will continue to be the most widely used measures of attitude, other methods of measuring attitude, such as galvanic skin response and heart and breathing rates, should continue to be explored.

Above all, the reader of M-A research results should be informed of the process used to obtain the data.

Experimentation

The carefully constructed and controlled experiment is certainly not the only method for M-A hypothesis testing, nor should it be. However, in the initial stages of exploration into the interaction between media and attitude this type of controlled study seems to provide the greatest generalizability and strongest foundation for future research and theory building.

Media-Attitude-Aptitude Interaction

The interaction between the variables that characterize a certain type of medium and the variables of learning in the affective domain seems to provide the most fertile ground for future research efforts. For example, one could attempt to determine whether the number and type of visual cues of a medium have any relationship to attitude change and formation for different age groups. Another effort might be directed toward developing a media hierarchy based on some variable of media, such as degree of abstraction of message, that could be used to predict attitude formation related to controversial topics.

This type of research would be in contrast to the more generally found,

but less generalizable, studies in which the attitude of a group of learners toward a specific lesson, as influenced by a category of media types, was evaluated.

Obviously, the analysis of the relationship between media characteristics and student learning styles when attitude change is the dependent variable of the research study is an important area for future research. ATI-attitude studies have not been reported in the literature in any great number and would seem to be worthy of future research effort.

Theory-Based Research

Much M-A research has been conducted in a theoretical vacuum. There seems to have been little or no attempt to relate attitude results obtained in experimental situations to any theoretical framework. In fact, many researchers failed to include any review of attitude research in the literature section of their studies. Much of the evaluation of attitude was post hoc and was of only tangential importance to the main objectives of the published study. It seems imperative that future M-A research efforts draw more carefully upon the literature on attitude change and on perception research for a theory base, until the body of credible data in the M-A area is large enough to begin formulating a theory base more directly related to the use of media in instruction.

Summary

Attitudes can be defined and measured. There seems to be a relationship between attitudes and some behaviors, and the attitudes of learners are definitely influenced by mediated instruction. In the literature there have been a sufficient number of studies reported that examined the

relationship between attitude positions and message design so that a tentative set of guidelines for the relationship between these two variables could be proposed. In the future, these guidelines require validation and revision so that a more definitive set of recommendations can be proposed. It may be that attitude formation and change is a unique consequence of mediated instruction. Only careful research by dedicated researchers can say for sure.

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