THE EFFECTIVENESS OF THE CONCERNS-BASED ADOPTION MODEL IN IMPLEMENTING A DRUG PREVENTION PROGRAM

By

D. LARK GAMEY

A THESIS

submitted to
The Faculty of Graduate Studies
The University of Manitoba
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ABSTRACT [1]

This study identified and compared the effects of staff development designed according to the Concerns - Based Adoption Model, on attitudes and behaviours of teachers, with the results of staff development designed according to the Traditional Model. A pre/post research design with a non-equivalent control group was used to examine the results of staff development in support of the innovation *Tuning In To Health* with 40 elementary-school teachers in the Winnipeg area. The first experimental group participated in 2 three-hour inservice sessions designed using concerns - based information about the innovation *Tuning In To Health*. The second experimental group participated in 2 three-hour inservice sessions designed using preadoptive information about the innovation that had been suggested by the Alcoholism Foundation of Manitoba. The instruments used in this study included the Stages of Concern Questionnaire, the Open-Ended Statement of Concern, the Levels of Use and Innovation Configuration Interviews. Significantly more teachers became users of the innovation following the CBAM interventions than following the Traditional interventions. Teachers expressed a reduction in informational and personal concerns, two of the three self concerns, following the CBAM interventions; whereas teachers did not express a reduction in any of the self concerns following the Traditional interventions. Furthermore, the users expressed significantly more change in concerns than nonusers. The overall conclusion of this study is two - fold. The tools for obtaining and coding the information employed by the CBAM are readily available and can be utilized with a moderate outlay of money and staff time. Secondly, the CBAM does provide a means of increasing the effectiveness of implementation efforts.

[1] The research herein described was conducted under contract to the Alcoholism Foundation of Manitoba. The opinions expressed are those of the author and do not necessarily reflect the position or policy of the Alcoholism Foundation of Manitoba, and no endorsement by the Alcoholism Foundation of Manitoba should be inferred.

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CHAPTER I

INTRODUCTION

This study focused on the implementation of innovations into the school curricula. Generally, the purpose was to investigate the effectiveness of the Concerns-Based Adoption Model in managing the change process in the context of curriculum in the public school system. Specifically, the study involved the implementation of the innovation *Tuning In To Health: Alcohol and Other Drug Decisions*, the drug prevention component of the Manitoba Health Education Curriculum, in elementary schools in the Winnipeg area. The study was concerned with the design and execution of staff development interventions in support of the innovation.

THE PROBLEM

New and supposedly better educational programs and resources are continually being developed in an attempt to keep pace with the constantly accelerating changes of our complex society. Unfortunately, this proliferation of educational innovations has not always been followed by the expected changes in educational practice (Goodlad and Klein, 1970; Gross, Giacquinta and Berstein, 1971; Williams, W. and Elmore, R.F. 1976). Considering the vast amounts of money and staff time that are expended on curriculum development projects, the inability to change educational practice in

desirable directions is a serious problem.

If, as many educators believe, and as Berman and McLaughlin (1978) state, "Improved student outcomes cannot be attained in the long run without teacher change,..." (p.5) then the problem is serious indeed. If societal, economic and technological change is inevitable, and if the present rate of change continues, then it becomes imperative that educators devise means to anticipate such change, to plan for it and to provide means of using change as an integral part of striving for school improvement. Inasmuch as "the teacher serves as the individual at the school level who has the most direct contact with students and is the staff person who most often will be required to acquire and implement changes, it is the teacher who will be most apt to influence the form and outcome of whatever improvement occurs" (Courter and Ward, 1983, p.189). Research on school improvement during the past decade supports this view, indicating that the teacher is the "catalyst" (Gross et al., 1971) or the "pivotal force" (Leithwood and Regan, 1974; Lieberman and Miller, 1979) or the "bottom line" (Schiffer, 1978) in the change process.

Why have so many promising innovations failed to achieve intended goals? Examples of the many factors that have been blamed for the paucity of real educational change include inappropriate or inadequate innovations (Hansen, 1974), the inaccessability of resource material, and teacher or learner characteristics (Gross et al., 1971). On the

other hand, recent research suggests that firsthand information about the degree of implementation is critical in explaining why certain innovations fail to produce the expected outcomes (Hall and Loucks, 1977; Hall, Wallace and Dossett, 1973; Loucks and Pratt, 1979). However, in many of the change models and studies (Fullan and Pomfret, 1977; Havelock, 1973; Rogers and Shoemaker, 1971) little attention has been given to the complex process following the decision to implement an innovation. If, as Goodlad and Klein (1970) report, the novel features of the innovation "have been blunted on the school and classroom door" (p. 97), then interpreting outcome and consequence data without systematic documentation of the innovation in use will be subjective and inadequate at best. Inasmuch as recent research has identified implementation variables as having important implications for analysis and interpretation of outcome data, this study was directed at the description and measurement of these variables.

RATIONALE

Many experimental and evaluation studies concerned with implementation variables repeatedly identify the following four factors as having an impact on the inability to change educational practice in desirable directions. These factors are:

1. the conceptualization of change as an act rather than a process (Berman and McLaughlin, 1974; Fullan and

Pomfret, 1977; Hall and Loucks, 1978b);

2. inadequate attention paid to staff concerns relative to the innovation and staff development (Berman and McLaughlin, 1978; Fullan and Pomfret, 1977; Goodlad, 1975; Leithwood, Holmes and Montgomery, 1979);

3. the lack of recognition of the importance and effect of the ecology of the school in the change process (Berman and McLaughlin, 1978; Fullan and Pomfret, 1977; Goodlad, 1975; Leithwood et al., 1979); and

4. the lack of clarity regarding the nature, scope and expectation of the innovation (Berman and McLaughlin, 1978; Fullan and Pomfret, 1977; Gross et al., 1971) .

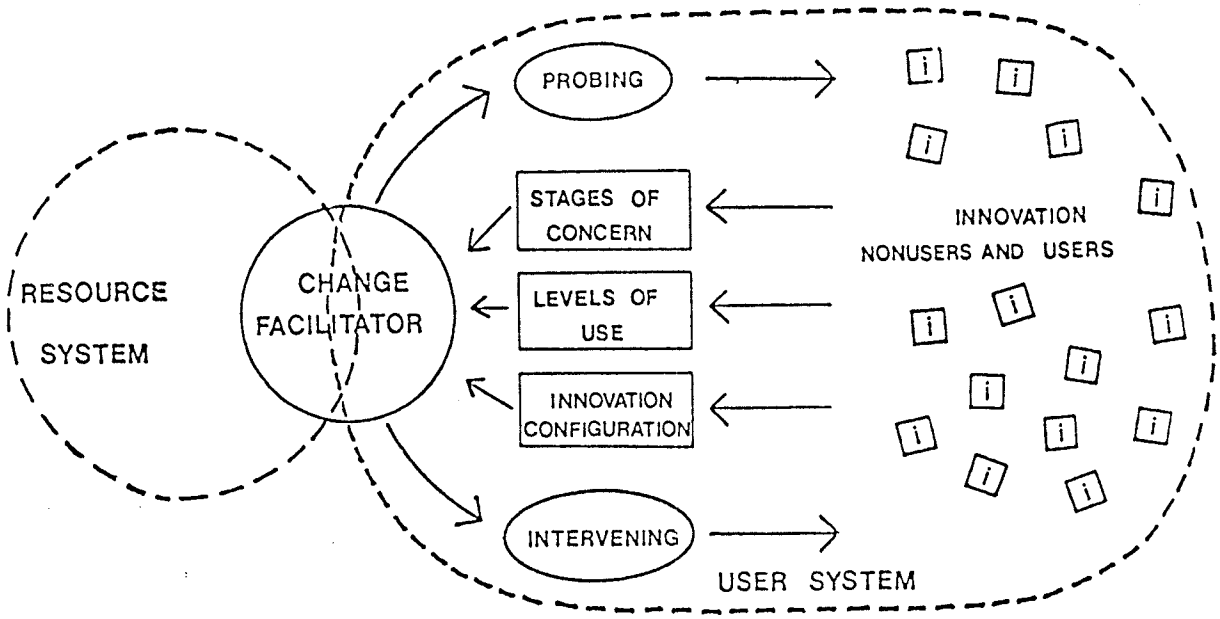
The research data confirm that "what happens during implementation can make or break even carefully planned and generally accepted projects" (Fullan in Common, 1979). Clearly there is need for a model that can utilize these findings to assist individuals involved in implementing educational innovations.

One promising model that has been designed to represent the complex process entailed when educational institutions and the individuals in them become involved in implementing educational innovations is the Concerns-Based Adoption Model developed by Hall et al. (1973) of the Research and Development Center for Teacher Education at the University of Texas. Three key variables within this model serve as diagnostic tools for developing a clearer focus on what is happening with individual teachers who are the clients of

change facilitators and the frontline uses of educational innovations. The diagram presented in Figure 1 is one representation of the Concerns-Based Adoption Model (CBAM).

Figure 1. The Concerns-Based Adoption Model.

From *Measuring Innovation Configurations: Procedures and Applications* (p.9) by S. Heck, S.M. Stiegelbaur, G.E. Hall and S.F. Loucks, 1981, Austin: Universiy of Texas, Research and Development Center for Teacher Education. Copyright 1981 by the CBAM Project, Research and Development Center for Teacher Education, University of Texas. Reprinted by permission.



"All the dimensions and various interactions proposed in the figure are meant to acknowledge that change is a process and that facilitating change entails continuous and systematic interactions" (Heck, Stiegelbauer, Hall and Loucks, 1981, p.8). Furthermore, by using information

provided by the key dimensions of CBAM, change facilitators can have access to specific concerns which users and potential users have in relation to the innovation as well as systematically document operational descriptions of the innovation. Although the ecology of the larger organizational unit of adoption beyond the teacher is recognized as having an effect on educational practice it is addressed only indirectly by this model.

The Concerns-Based Adoption Model is a conceptual structure which links the activities of three systems: a User System, a Resource System and a Change Facilitator System, in a diagnostic prescriptive manner to facilitate implementation of educational innovations. The basis for this linkage is provided by three key variables: 1) User Stages of Concern about the Innovation, 2) Levels of Use of the Innovation and 3) Innovation Configurations. "In combination, these three variables provide the change facilitator with the diagnostic tools and frame of reference to design and conduct concerns-based inservice teacher training and manage the change process" (Hall, 1978, p.5).

The User System of the CBAM is characterized by specific attitudes and behaviours relative to a particular innovation which are reflected in the Stages of Concern about the Innovation (SoC) and Levels of Use of the Innovation (LoU) respectively. The various forms the innovation has taken within the User System as a result of user adaptation of the innovation to local circumstances are described in terms of

the Innovation Configuration (IC). The Change Facilitator's role is to probe the User System to determine and monitor user and innovation characteristics, then link the User System with a Resource System via planned intervention. User characteristics are identified by the Stages of Concern Questionnaire, the Open-Ended Statement of Concern and the Levels of Use Interview. The characteristics of the innovation are identified through the Innovation Configuration Interview. The Change Facilitator uses the data gleaned from each of these measurements to design and execute an appropriate intervention.

Preliminary studies using the planned interventions suggested by the CBAM have had promising results (Hall and Loucks, 1978b; Loucks and Pratt, 1979). An application of this model in a Manitoba study affirmed that the use of a curriculum innovation can be predictably influenced by using concerns-based staff development (Leary, 1983). With one exception, all the teachers in this project demonstrated more acceptable operational definitions of the Manitoba Provincial K-6 Science Curriculum, the innovation in question, as a result of teacher inservicing based on data collected about the users and the innovation.

Unlike the CBAM, which employs information about the ongoing nature of the change process, the model traditionally used for designing implementation strategies has concentrated on preadoptive data. In the traditional orientation, implementation of the innovation is assumed

once the decision to adopt has been made, hence subsequent information about either the innovation or the individuals involved is not considered. In short, the CBAM focuses on the interaction between the people and the innovation whereas the Traditional Model focuses primarily on preadoptive information about the innovation or the task at hand. The Manitoba Department of Education is currently using the Traditional Model to design the implementation strategy for the new Health Education Curriculum.

This research project was designed to describe and measure the results of concerns-based staff development in implementing a school-based drug prevention program. Hall and Loucks (1978b), Leary (1983), and Loucks and Pratt (1979) present findings to support the premise that it is possible to favourably influence the use of educational innovations by designing staff development interventions according to the concepts and tenets of the CBAM. Up to this study no attempt has been made to compare these efforts with more traditional approaches to staff development. Inasmuch as it has been shown that the traditional perspective for managing change has been largely ineffective (Fullan and Pomfret, 1977; Goodlad and Klein, 1970; Gross et al., 1971; Havelock, 1973) and that it continues to be unchallenged as an implementation strategy, the research project outlined here attempted to compare results of the Traditional Preadoptive Model with results of the Concerns-Based Adoption Model.

THE PURPOSE

The purpose of this study was to investigate the effectiveness of the Concerns-Based Adoption Model in facilitating implementation of educational innovations. The study investigated the results of staff development interventions, designed according to the CBAM, on attitudes and behaviors of teachers and compared these results with those of staff development interventions designed according to the Traditional Model. Although any curricular innovation would have been acceptable for the purpose of this study, the innovation *Tuning In To Health: Alcohol and Other Drug Decisions* was chosen. An overview for *Tuning In To Health* is provided in Appendix A.

The study tested a number of hypotheses that stemmed from two fundamental questions. These questions were:

(1) Can staff development that has been designed according to the concepts and tenets of the CBAM influence users of educational innovations in desirable directions? and

(2) Can staff development designed according to the key dimensions of the CBAM have a greater influence on users of educational innovations than staff development designed using the Traditional Model focused by preadoptive information?

HYPOTHESES

Three major hypotheses arose directly from the first

question and are concerned only with the CBAM. The second question gave rise to three other hypotheses which focus on the comparison between the CBAM and the Traditional Model. Specifically, the following hypotheses were tested:

1) Teachers will express a reduction in self concerns and an increase in task concerns about *Tuning In To Health*, as measured by the Stages of Concern Questionnaire, following staff development focused by the CBAM data.

2) Teachers will report higher Levels of Use of *Tuning In To Health*, as measured by the Levels of Use Interview, as a result of staff development focused by the CBAM data.

3) Teachers will describe more component variations within the scope of *Tuning In To Health*, as measured by the Innovation Configuration Interview, following staff development focused by the CBAM data.

4) Teachers participating in the CBAM module will express a greater reduction in self concerns and a greater increase in task concerns about *Tuning In To Health*, as measured by the Stages of concern Questionnaire, than teachers participating in the Traditional module.

5) Teachers participating in the CBAM module will report higher Levels of Use of *Tuning In To Health*, as measured by the Levels of Use Interview, than teachers participating in the Traditional module.

6) Teachers participating in the CBAM module will describe more component variations within the scope of *Tuning In To Health*, as measured by the Innovation

Configuration Interview, than teachers participating in the Traditional module.

RESEARCH DESIGN

This study utilized a pre/post research design with a non - equivalent control group to examine the results of concerns - based staff development. The 40 elementary - school teachers, who volunteered to participate in this study, were divided into three groups; two experimental groups and one control group. Both experimental groups were provided with two three-hour inservice sessions. No inservice sessions were made available to the control group. The content of the inservice sessions received by the first experimental group was designed using concerns-based data relative to the innovation *Tuning In To Health*. The second experimental group received inservice sessions in which the content was designed according to suggestions developed by the Alcoholism Foundation of Manitoba.

Level of Use and Innovation Configuration data were collected from each of the experimental groups at the beginning of the study, prior to any staff development intervention and a second time at the end of the study. Stages of Concern data were collected from the control and experimental groups on three separate occasions; prior to the first intervention, midpoint between the first and second intervention and after the second intervention. The data were analysed using descriptive and statistical

techniques.

DEFINITION OF TERMS

The following terms are used in this study with these meanings:

CHANGE FACILITATOR: Change facilitator refers to the person(s) who has some informal or formal responsibility to assist teachers (i.e. front-line innovation users) in developing more effective innovation use. Change facilitators can be administrators, such as principals and superintendents, or experts in the area of the innovation, such as curriculum specialists and consultants.

CONCERNS: "The term concerns is used to represent a composite description of the various motivations, perceptions, attitudes, feelings and mental gyrations experienced by a person in relation to an innovation." (Hall, 1979, p.203).

IMPLEMENTATION: "Implementation is the process of putting into practise an idea, program, or set of activities which is new to the people attempting to bring about the change. The emphasis is on what actually changes in practise." (Fullan, 1983, p.216).

INNOVATION: "The concept of innovation means any process or product that is new to a potential user." (Hall, 1979, p.203).

INNOVATION CONFIGURATION (IC): "Innovation configurations are the operational patterns of the innovation that result from selection and use of different innovation component variations." (Hall and Loucks, 1978a, p.9).

LEVELS of USE of the INNOVATION (LoU): The concept of Levels of Use of the Innovation is an eight-level hierarchical scale used to describe the knowledge, skill and behavioural aspects of the change of individuals.

STAFF DEVELOPMENT INTERVENTION: "Is an action or event or a set of actions or events that influence use of an innovation" (Hall, Zigarami and Hord, 1979, p.10).

STAGES of CONCERN (SoC): The concept of Stages of Concern about the Innovation is a seven - stage developmental heirarchy used to describe the perceptions, feelings and motivations of innovations users and nonusers.

LIMITATIONS

The generalizability of the results of this study is limited by the use of volunteer participants, urban teachers, small sample size and a restricted sample. Given that change is a process, the interventions and the time frame of the study may not have been sufficient to demonstrate any changes in the variables of interest. In addition, the writer's dual role as a developer of the innovation and researcher may have influenced the teachers,

reactions to the innovation. Finally, the use of instruments to measure Stages of Concern and Levels of Use, which are integral to the Concerns - Based Adoption Model, with all subjects may have contaminated the results of the comparison group.

SUMMARY

This chapter has presented an introduction to the study. The introduction is comprised of a brief discussion of the problem of unexpected outcomes evidenced during curriculum implementation, a statement of the specific research questions and resulting hypotheses, a brief description of the research design, a list of definitions and the limitations of the study.

The next chapter presents a review of the literature related to change in the context of educational innovations and discusses the CBAM as one model with potential for facilitating the change process. Chapter Three details the procedures used in the collection and treatment of the data. Chapter Four presents the findings of the study and Chapter Five constitutes a discussion of the conclusions and implications of the study.

CHAPTER 2

LITERATURE REVIEW

In this chapter, a review of literature related to curriculum change along with research evidence pertaining to specific implementation efforts are presented. In order to provide a deeper understanding of the nature of curriculum implementation the review focuses on four factors believed to influence the process of change and considers one model with potential for facilitating the change process. The chapter discussion is organized under the headings, Factors Affecting Implementation and Facilitating Implementation, respectively.

FACTORS AFFECTING IMPLEMENTATION

Research studies concerned with educational innovations indicate that although change has occurred, the results have been neither spectacular nor pervasive. Much of this research has focused on why so many promising innovations have not resulted in expected outcomes. As previously stated, at least four factors for the discrepancy between expected and actual outcomes are suggested consistently in the change research literature. In review these factors are:

1. the conceptualization of change as an act rather than a process (Berman and McLaughlin, 1974; Fullan and

Pomfret, 1977; Hall and Loucks, 1978);

2. inadequate attention paid to staff concerns relative to the innovation and staff development (Berman and McLaughlin, 1978; Fullan and Pomfret, 1977; Goodlad, 1975; Leithwood, Holmes and Montgomery, 1979);

3. the lack of recognition of the importance and effect of the ecology of the school in the change process (Berman and McLaughlin, 1978; Fullan and Pomfret, 1977; Goodlad, 1975; Leithwood Holmes and Montgomery, 1979); and

4. the lack of clarity regarding the nature, scope and expectation of the innovation (Berman and McLaughlin, 1978; Fullan and Pomfret, 1977; Gross, Giacquinta and Berstein, 1971) .

In short, the literature suggests that the major components affecting the implementation of educational innovations are 1) the conceptualization of change, 2) the characteristics of the people involved in the change, 3) the physical and social characteristics of the environment in which the change takes place and 4) the nature of the task as expressed by the innovation. McNergney is one analyst who has organized and discussed three of these factors in interactive terms. Extending Lewin's earlier work (1935), McNergney suggests that "a teacher's behaviour (B) is a function of the person (P) who serves as teacher, the environment (E) the teacher is exposed to, and the task (T) in which the teacher engages; or B=(f)P,E,T" (1980, p.235). By so grouping these variables, implementation outcomes can

be viewed in terms of teacher behaviour.

The purpose of the following section is to help clarify the problem of incongruence between curricular intentions and curricular outcomes during the process of implementation by reviewing literature in the context of the formula B=(f)P,E,T. The formula suggestd by McNergney has a major limitation inasmuch as it does not address how various conceptualizations of change alter the contribution each of the stated variables can make. Nevertheless, in full knowledge of this limitation, McNergney's formula can be used to point out the inadequacy of conceptualizing the variables as unrelated one to another. In addition, it will be shown how the concepualization of change affects implementation efforts by the differential attention given to each of these variables.

PEOPLE

Invariably what is required during the implementation of educational innovations is a change in the individual responsible for operationalizing the innovation (Sarason, 1971). Insomuch as teachers are the individuals most often required to perform this task (Couter and Ward, 1983), the extent to which the change effort has been a success or failure can be discussed in terms of the teacher.

Viewed in the context of curriculum implementation the teacher becomes the learner, and as an adult learner, brings special characteristics to the learning situation. General

principles for facilitating adult learning as summarized by Knowles (1978) include:

> 1. Adults are motivated to learn as they experience needs and interests that learning will satisfy; therefore, these needs and interests are appropriate starting points for organizing adult learning activities.
> 2. Adult orientation to learning is life-centered; therefore, the appropriate units for organizing adult learning are life situations not subjects.
> 3. Experience is the richest resource for adult learning; therefore the core methodology of adult education is the analysis of experience.
> 4. Adults have a deep need to be self-directing; therefore the role of the teacher is to engage in a process of mutual inquiry rather than to transmit knowledge and then evaluate their conformity to it.
> 5. Individual differences among people increase with age; therefore, adult education must make optimal provision for differences in style, time, place, and pace of learning. (p.31)

In addition to general adult learning characteristics, insights into adult development are also helpful to those planning and providing staff development. Generally, the various views of adult development can be grouped into two categories: the developmental *age* theories and the developmental *stage* theories (Chickering in Bents and

Howey, 1981). The developmental age theories identify "chronological age as the major variable in the search for characteristics associated with particular periods in the lives of adults" (Bents and Howey, 1981, p.27). The developmental stage theorists on the other hand, focus on "the distinct or qualitative differences in the structure of thinking at various points in development that are not necessarily age-related" (Bents and Howey, 1981, p.14).

Knowledge of adult learning characteristics and age/stage theories help in explaining the characteristics of adults as they approach a given situation, but they shed little light on the result of their interaction within specific contexts. Based on her work with preservice and inservice teachers Francis Fuller (1969) hypothesized that irrespective of age or experience individuals' interaction with an innovation are developmental in nature and are related to the concerns individuals have regarding the innovation. Her proposed developmental conceptualization of the concerns of teachers has been documented and expanded into the Concerns-Based Adoption Model (Hall et al., 1973).

In summary, individuals involved in change bring particular adult learning characteristics and specific age/stage characteristics to the innovative context that are useful in planning staff development interventions. However, "taking into account the developmental differences and learning styles of adults is not sufficient for effective inservice programs .... It is imperative that the other

contextual variables as well as the interaction among them and the teacher be more systematically considered in planning and providing staff development" (Bents and Howey, 1981, p.34). In other words, an individual's reaction to or interaction with an innovation can not be described adequately based on preadoptive information alone.

ENVIRONMENT

Many authors agree that there is little research on the environment beyond the individual involved in the change process. In their search for characteristics associated with effective change facillitators, Rutherford, Hord, Hulling and Hall (1983) found that "virtually all of the leadership models [discussed in the literature on leadership] consider the situation to be of critical importance yet very little research or attention has been directed to the situation" (p.23). One exception, a study of federally funded programs designed to introduce and spread educational innovations in public schools is useful in differentiating among the various components of the environment. This four-year, two-phase study, conducted by the Rand Corporation between July 1973 to April 1977 included 293 and 100 projects respectively.

In summarizing the Rand findings, Berman and McLaughlin (1978) report that the implementation phase was highly dependent on "good working relationships among teachers", "supportive principals" and "effective project

directors" whereas only the principals' support was critical for the continuation of the project beyond its initial stages. Furthermore, school characteristics such as "the academic, ethnic, economic makeup of the student population, school size, and stability of the staff and the school's experience with other innovations" (p. 32) did not strongly affect project outcomes whereas teacher attributes significantly affected project outcomes. While teachers' sense of efficacy had positive effects on implementation outcomes, years of teaching did not. "The longer the teacher had taught the less likely the innovation was to be implemented and have its desired effects" (p.32). This phenomena was explained in terms of the individual's perception of the work place and his or her sense of efficacy in it. The work place generally did not allow individuals to satisfy more than low level needs.

This is consistent with Goodlad's conclusion that schools did not have in place the means or processes by which teachers "might have some reasonable prospect of self renewal" (1975, p.71), so that individuals in schools could satisfy their higher level needs in the educational setting. Fullan and Pomfret (1977) concluded that an environment which did not promote "personal interaction and contacts, in-service training and other forms of people-based support" (p.391) was not conducive to implementation. In the context of the classroom as user system, Leithwood et al. (1979), emphasized the maintenance of an environment in which the

teacher sustained self-esteem.

Environmental components such as time, space and resources can be manipulated, given favorable economic and political conditons. Other environmental components related to school climate and culture are not so easily influenced. If, as Berman and McLaughlin conclude, "none of the 'background' or structural characteristics strongly affected any of the project outcome or continuation measures" (p.32) then the Rand Study adds another twist to the axiom "You can't get something for nothing". Efforts must address the specific area where the change is desired.

Curricular implementation aims to stimulate personal change. Teachers, however, are not only individual practitioner but are also members of school staffs and therefore cannot be trained independently from their environment, then reintroduced to that environment (Schiffer, 1979). This is true particularly, if the innovation is to result in some organizational adaptation in the role definition, behavior or relationship of staff members. It may also be the case that other role players, within the environment, indirectly affected by the innovation have a significant impact upon the quality of the environment of change (Leithwood et al., 1979). The heuristic, adaptive and social nature of change exists in a human environment: thus the implementation efforts must be related to the particular setting of participants. (McLaughlin and Marsh, 1979).

In summary, the belief that implementation outcomes are situationally influenced is supported by research and theory. The environment, as a variable in the process of change, has a dual nature: physical characteristics, which can be readily manipulated and social characteristics, which are more difficult to influence. The literature strongly suggests that it is the characteristics of the individual players and the relationships those players have with one another that is most important to the successful implementation and spread of educational innovations.

TASK

Major implementation studies concur that the specific nature of the innovation must be clear. In their review of curriculum research Fullan and Pomfret (1977) found that two characteristics of the innovation stood out as being related to implementation. "These are the *explicitness or plans for explicitness* associated with the innovation and the *complexity or degree and difficulty of change* required by the innovation" (p.368).

Explicitness or clarity of the innovation to be implemented appears to be one of the major problems in the change process. In their study of planned educational change, Gross et al. (1971) found that the majority of teachers were unable to identify the essential features of the innovation they were using. Others (Berman and McLaughlin, 1977; Charters and Pellegrin, 1973), who have

studied the process of educational change, also have documented problems concerning explicitness. Clarity, is not enough; the innovation must be understood and then deemed as having value in the context of the user system (Leithwood et al., 1979; Hall, 1979).

Concerning complexity, Fullan warns that there is danger in striving only for clarity since "very simple and insignificant changes can be very clear while more difficult and worthwhile ones may not be amenable to easy clarification" (1982, p.58). Whereas complexity creates problems for implementation, it may signal more positive results. The Rand studies concluded that the more complex the change required, the less confused with conventional behaviour it became; with a resulting positive effect upon implementation (Berman and McLaughlin, 1978). They also noted that deeper change requirements seemed to draw on the professional pride of teachers and again had a positive effect on implementaion.

In summary, the explicitness and the complexity of the innovation have a direct relationship with implementation of the innovation. This clarity often does not emerge until implementation is underway. That is, the explicitness evolves as a result of the application in a specific context.

CONCEPTUALIZATION OF CHANGE

The previous discussion of this review discussed educational change in terms of the people involved, the environment of change and the task as defined by the innovation. The remainder of the discussion concerning factors affecting implementation will focus on the conceptualization of change implicitly or explicitly assumed by the models and theories prevalent throughout the change literature. The central aim of this discussion is to illustrate how the perspective one has of the change process affects implementation efforts by serving as an interpretive framework.

The concept of perspective is conceived as a world view or way of seeing a situation rather than a rigid set of facts and findings. Perspectives "result from an acceptance of normative constraints about what is rational and acceptable. They limit the very language and concepts employed in discussions and thereby give a certain value slant " (House, 1981, p.19). Allison (1971) argues "what we see and judge to be important ... depends not only on the evidence but also on the 'conceptual lenses' through which we look at the evidence" (p.2). In terms of educational innovations the impact that either the people, the environment or the task can contribute to specific change efforts is dependent on how change itself is conceptualized.

A look at the problem of implementation presented in the literature reveals a collection of conflicting and

contradictory theories. According to Elmore (1978) "this diversity of theory is a sure sign that knowledge in the field is 'soft'" (p.187). That is to say that a coherent body of empirical knowledge concerning the conditions influencing the implementation of educational innovations does not exist. It is not surprising that a number of different perspectives also exist.

Elmore (1978) proposes four organizational models of change which he brings to bear on the implementation problem. They are the systems management model, the bureaucratic process model, the organizational development model and the conflict and bargaining model. He uses each of these models to "explain why certain features of the implementation process are more important than others and to predict the consequences of certain administrative actions for the success or failure of implementation efforts" (p.189). Elmore does not argue for the adoption of a model, rather he takes the position that each model offers a legitimate analytical perspective which helps to distinguish among different kinds of problems. Furthermore, he suggests that "certain kinds of problems are more amenable to solutions using one perspective or another" (p.223).

Other prominent and frequently cited works providing views of implementation include those espoused by Chin and Benne (1969); Havelock (1971; 1973). The former classified the approaches to change into the rational-empirical, normative-re-educative and power-coercive models; whereas

the change models articulated by the latter included the social interaction model, the research, development and diffusion model and the problem-solver model.

Although any number of perspectives on innovation may exist, House (1981) believes that three basic perspectives; the technological, the political, and the cultural, account for the vast majority of studies that have been conducted on knowledge utilization processes relative to the improvement of educational practise. In a critical review of research on educational change and knowledge use in education, House (1981) suggests the following underlying principles or assumptions for these three perspectives:

> Underlying the technological perspective is the image of production. Concepts like input-output, flow diagrams, and specifications of tasks are commonly employed. Innovation is conceived as a relatively mechanistic process. The social relationships are based on the technological necessity. The concern is economic and the primary value that of efficiency.
>
> Underlying the political perspective is the image of negotiation. Concepts such as power, authority, and competing interests are employed. Social relationships are conceived as voluntary and as resting on contractual arrangements. Individual and group interests are conceived as often in conflict. Distribution of resources in a legitimate and acceptable manner is important. The concern is

political, and a primary value is the legitimacy of the authority system.

> Underlying the cultural perspective is the image of community. People are bound to one another through shared meanings resting on shared values. Social relationships are traditional. Integrity of the culture is a primary value....Although relationships within a culture may be binding and obligatory, relationships across cultures are relativistic. (p. 18-19)

The existence of three main perspectives or classifications of implementation is supported by the observations made by Fullan and Pomfret (1977) in their review of curriculum and instruction implementation research. Their classifications included fidelity studies, in which conformity to the original innovation is at issue; mutual adaptation studies, which focus on how the innovation has been changed in the implementation; and process studies, which focus on the implementation process itself. These three classifications reflect parallel views of change to those seen from the perspectives suggested by House (1981); technological, political and cultural perspectives, respectively.

Technological Perspective

Viewed from within the technological perspective, teaching is a technique that can be analyzed by subdividing it into its components and improved by systematically

developing better teaching forms. Innovations are conceived as a "bag of tricks" or "how to's" that can be learned through formal means. Investigations are conducted with psychometric instruments such as attitude scales or scaled questionnaires.

The research, development and diffusion (R, D & D) paradigm proposed by Havelock (1971) epitomizes this perspective. New knowledge acquired through research served as the basis for a solution that was built during the development stage. This innovation was introduced to practitioners during the diffusion stage. Implementation was considered complete once the decision to adopt was made.

The focus is on "the innovation itself, on its characteristics and component parts, on how to produce and introduce it" (House, 1978, p.28). The teachers involved and the environment of change are considered to have little impact on the final outcome.

Political Perspective

The political perspective acknowledges legitimate differences in the interests of groups involved in school change efforts. Negotiation and compromise thus become important concepts. The focus shifts from the innovation to the innovation in context. Not only is the task important but how the people react to the innovation in a particular environment is another important variable to consider. Investigations are conducted primarily with semistructured

questionnaires and interviews.

The political perspective is evident in the Rand studies model in that successful implementation is viewed as mutual adaptation. Berman and McLaughlin (1978) state that "effective implementation strategies promoted mutual adaptation, the process by which the project is adapted to the reality of its institutional setting, and the teachers and the school officials adapt their practices in response to the project" (p.28).

Cultural Perspective

"The cultural perspective assumes a more fragmented society, more value consensus within groups, and less consensus among social groups, so that separate groups must be regarded as subcultures" (House, 1978, p.30). The possibilities for misunderstanding are enormous since two subcultures may not understand one another and there may not be a common procedure for reaching agreement. Anthropological methods of investigation are used to focus the attention on the process. How the innovation is interpreted and relationships disturbed is more important than the characteristics of either the people, task or the environment.

Some innovation theorists, such as Goodlad (1975) do not propose the selection of a particular innovation for school improvement; rather, they promote a process to be developed and refined over time by the school unit. In this

perspective, there is nobody on the outside trying to do something to someone on the inside.

Perspectives of Change and Implementation

As previously stated, the perspectives serve as an interpretive framework. They suggest what evidence is relevant and what factors determine events. In this way each perspective produces different explanations and different policies. The concept of differing perspectives offers an explanation why implementation efforts have focussed, in varying degrees, on the people, the task and the environment, the major components of implementation discussed in this review.

Considering the modest empirical support concerning conditions influencing the implementation of educational innovations it seems unwise to plan change efforts solely from one perspective. By designing educational innovations from only one perspective, factors implicit in other perspectives are disregarded. In a pluralistic society it seems sensible to support all legitimate points of view. If, as Elmore (1978) suggests, each perspective helps to distinguish and solve differing kinds of problems, then considering implementation efforts from more than one perspective would be legitimate and beneficial.

FACILITATING IMPLEMENTATION

Few change strategies focus on the complex, interactive nature of implementation "because few 'handles' exist ... that enable 'managers' of change ... to determine what is actually happening" (Loucks and Hall, 1977, p.18). Most of the mechanisms that do exist are predominately technological in origin. These tools and strategies focus solely on the innovation thus ignoring contextual relationships between the people in the enviroment of change and the task of educational innovation. Unexpected outcomes are also ignored.

As previously mentioned, the Concerns-Based Adoption Model (CBAM) is one approach that permits change facilitators to translate many of the complex interactions of curriculum implementation into concrete data. This translation is possible for at least two reasons. Firstly, the CBAM enables change facilitators to focus on implementation from several perspectives. Secondly, valid and reliable tools have been developed for the major dimensions of the CBAM that enable change facilitators to record information about components of implementation.

The model itself has grown out of the Research, Development and Diffusion paradigm. The focus is not limited to the task prior to implementation, as in the technological approach, but expanded to include the people involved and the task in context and thus suggests a political perspective. The cultural perspective is evident

in the list of assumptions that follow in the next section describing CBAM in detail.

The factors, people, environment and task expressed in the formula, B=(f)P,E,T, suggested by McNergney (1980), are acknowledged in varying degrees by the CBAM. The characteristics of the people involved in curriculum implementation and the specific task of the innovation are addressed directly through the Stages of Concern Questionnaire, the Open-Ended Statement of Concern and the Levels of Use and Innovation Configuration Interviews. Environmental conditions beyond the teacher which affect innovation implementation are addressed indirectly through the assumptions of the model itself. In that the ecology of the environment beyond the teacher is not sufficiently analysed within the context of the CBAM, this model has a major shortcoming. Nevertheless, in full knowledge of this shortcoming, the CBAM does provide a practical means of facilitating the change process within the context of curriculum implementation by providing valuable diagnostic information about the individuals involved and the innovation of interest.

CONCERNS-BASED ADOPTION MODEL

The Concerns-Based Adoption Model has been influenced by the change research, especially that of Frances Fuller and articluated out of field experience with various innovations (Hall et al., 1973). Seven basic assumptions

underlie the model's perspective on innovation adoption. These assumptions emphasize that change is a highly personal experience, thus interventions must focus on the feelings and behaviours of teachers toward the innovation of interest. As stated by Rutherford et al. (1983), these assumptions are:

> First of these is the belief that change is a process, not an event; therefore change requires time, energy, and resources to support it as it unfolds [political perspective]. Second, change is accomplished by individuals first, then institutions. When the persons in an organization have changed, then it can be said that the organization is changed [cultural perspective]. Third, change is a highly personal experience, which is congruent with the attention on the individual as the unit of analysis in this model. Individuals change at different rates and in different ways [political and cultural perspective]. Fourth, change entails developmental growth in both feelings and skills in using new programs, thus individuals change in two important ways over the course of a change experience [technological perspective]. Fifth, interventions should be targeted for the individual rather than the innovation. The feelings and skills of the individuals should be taken into account when designing actions to support the change process, in addition to consideration of implementing the

innovation [political perspective]. Sixth, the change facilitator needs to be adaptive to the differing needs of differing individuals and to the changing needs of the individuals over time [political perspective]. Last, the change facilitator needs to consider the systematic nature of the organization when interventions are made. That is, activities targeted or made in one area of the system may well have unanticipated effects in another [political and cultural perspectives]. p.64

CBAM speaks to the process of the innovation adoption through lenses that combine some elements from each of he three basic perspectives espoused by House (1981). In the CBAM, innovation adoption is viewed as a process which individuals move in ways and at rates different from other teachers. According to the CBAM, innovation adopters develop along two important dimensions as they implement an innovation: (1) in the kinds of concerns they have about the innovation and (2) in their skill and sophistication in the use of the innovation. It is proposed that with assessment information about concerns and use, managers of change can be more effective in facilitating innovation adoption.

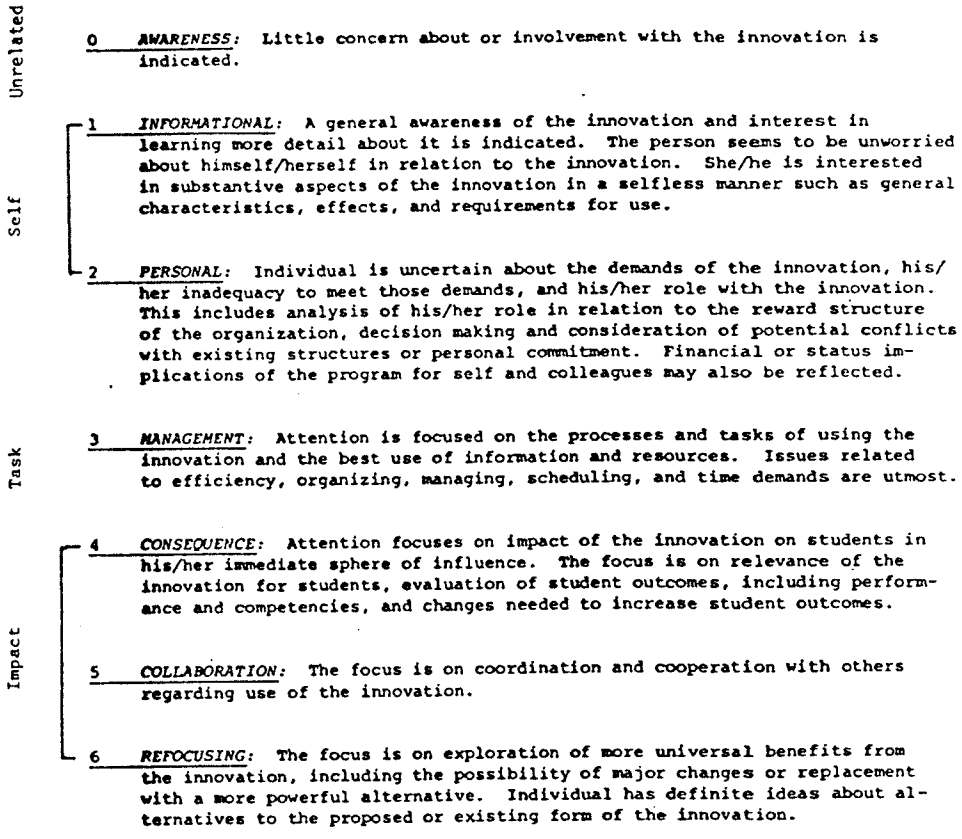
Stages of Concern about the Innovation

The concept of concerns which grew out of work by Frances Fuller (1969) focuses upon the affective dimension experienced by a person in relation to a particular

innovation. Stages of Concern About the Innovation (SoC) (Hall and Rutherford, 1976) describes the kinds of concerns which the individuals may experience across time, related to the innovation (see Figure 2).

Figure 2. Stages of Concern About the Innovation

From *Measuring Stages of Concern About the Innovation: A Manual for the Use of the SoC Questionnaire* (p.7) by G.E. Hall, A.A. George and W.L. Rutherford, 1977, Austin: University of Texas, Research and Development Center for Teacher Education. Reprinted by permission.



Earlier stages in the model are characterized by disinterest in the innovation or by concerns that are informational, but impersonal in nature. As teachers move

along the developmental continuum, concerns become more personal in that individuals become more concerned with the implications of their roles in adapting the innovation. As person - oriented concerns are resolved, attention is focused on specific tasks or processes involved in actually incorporating the innovation into the setting. Later concerns focus on the overall impact of the innovation on the students and the educational process. In short, there is a developmental progression from unrelated concerns to those that relate to self, the task and finally to the more general impact of an innovation.

Individuals do not have concerns at a single stage but have a conglomeration of concerns. Although concerns at each stage exist, concerns at one or two stages are relatively intense. Hord and Loucks (1980) state that "individuals experience a variety of concerns at any point in time. The degree of intensity of different concerns about the innovation will vary depending on the individuals' knowledge and experience" (p.9).

Levels of Use of the Innovation

A second concept which provides a basis for designing personally relevant staff development is Level of Use. This dimension of the CBAM focuses on describing the behaviours of those involved with the innovation and "does not at all focus on attitudinal motivation, or other affective aspects of the user" (Hall, Loucks, Rutherford and Newlove, 1975,

p.52). The eight distinct levels of use that have been identified to describe how performance changes as the individual becomes more familiar with an innovation and more skillful in using it are shown in Figure 3. These levels range from lack of knowing that the innovation exists to an active sophisticated and highly effective use of it and further to active searching for a superseding innovation" (Hall, Hord and Griffin, 1980 p.52).

Figure 3. Levels of Use of the Innovation

From *The LoU Chart: A Framework for Analyzing Innovation Adoption*. Copyright 1975 by the CBAM Project, Research and Development Center for Teacher Education. University of Texas Reprinted by permission.

0 NONUSE: State in which the user has little or no knowledge of the innovation, no involvement with the innovation, and is doing nothing toward becoming involved.

I ORIENTATION: State in which the user has recently acquired or is acquiring information about the innovation and/or has recently explored or is exploring its value orientation and its demands upon user and user system.

II PREPARATION: State in which the user is preparing for first use of the innovation.

III MECHANICAL USE: State in which the user focuses most effort on the short-term, day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet user needs than client needs. The user is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often resulting in disjointed and superficial use.

IVA ROUTINE: State in which use of the innovation is stabilized. Few if any changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use or its consequences.

IVB REFINEMENT: State in which the user varies the use of the innovation to increase the impact on clients within immediate sphere of influence. Variations are based on knowledge of both short- and long-term consequences for clients.

V INTEGRATION: State in which the user is combining own efforts to use the innovation with related activities of colleagues to achieve a collective impact on clients within their common sphere of influence.

VI RENEWAL: State in which the user reevaluates the quality of use of the innovation, seeks major modifications of or alternatives to present innovation to achieve increased impact on clients, examines new developments in the field, and explores new goals for self and the system.

In general, individuals begin with "nonuse" of the innovation, then move to "orienting" themselves to the innovation and preparing for first use. Usually they begin to use an innovation at a "mechanical" level, i.e., planning is short-term and organization and co-ordination of the innovation are disjointed. As experience increases, users move into a "routine" pattern of use. Users may "refine" their use of the innovation, "integrate" their refinements with others or "renew" their use through another innovation (Hall et al. 1980)

Innovation Description and Configuration

Another concept deemed important to understanding what constitutes personally relevant staff development focuses on the innovation itself. Staff developers are aware that individuals change in the implementation process; innovations also change. "Innovation Configurations are the various forms of an innovation that result when users 'adapt' it for their own use in their particular situations. As an innovation is disseminated and the developers model is translated into practise in different classrooms, one or more of the components of the innovation may be modified to fit local needs" (Hord and Loucks, 1980, p.17). The combined list of all innovation configurations, ranging from outside the intended progrem to ideal practises is known as the Innovation Description.

CBAM Research

Given that the CBAM, suggested by Hall et al. (1973) is relatively new, research efforts have concentrated on developing measures and accumulating empirical verification for the Stages of Concern and Levels of Use, the main dimensions of the model. These early works included innovations such as teaming, individualized instruction in reading and mathematics and a science curriculum and involved both classroom teachers and college and university professors. These studies support the existence of a seven developmental stages of concern that begin with a classic nonuser concerns profile and progress through several user concerns profiles that move through a developmental progression (Hall, 1975). Furthermore, the eight Levels of Use have been found in practise although a clear linear relationship through to an integrated Level of Use has not been observed (Hall, 1975).

George and Rutherford (1978) describe a two-year study in which 146 teachers and 117 professors, ranging from no experience to 5 years or more, were observed on their implementation of team teaching in the public school and instructional modules at universities, respectively. This study did not include any systematically planned interventions promoting the use of the innovations. The findings support the claims of the CBAM. George and Rutherford (1978) found that:

Before beginning use of an innovation, individuals have

greatest concern for informational and personal needs and very little concern about the impact of the innovation on the students. After use has begun, there is a drastic change in concerns. Stage 0, 1, and 2 (Awareness, Informational and Personal) concerns become much less prominent and concerns in using the innovation move drastically upward. Stage 3 Concerns (management) are also high during the early period of use. p.29.

This study not only supports the existence of the stages of concern and levels of use but suggests that there is "a predictive relationship between them. The data indicate that change in use is anticipated by a change in concerns" (George and Rutherford, 1978, p.29).

Other studies went beyond verification in that they included specific interventions based on understanding teachers' concerns and how they change over time. One such study is described by Loucks and Hall (1979). Findings of this implementation effort, which involved the revision of the science curriculum from grade 3-6 in 80 elementary schools, support the earlier work of George and Rutherford (1978). Furthermore, Loucks and Hall (1979) found that teacher self concerns changed significantly as a result of the intervention whereas task and impact concerns were less affected. As a result of this study Loucks and Hall (1979) suggest that:

If the innovation is appropriate and if the change

facilitators are effective and there is organizational support, institutionalization [Level IV Routine] may occur with a relatively simple innovation....However, if the innovation is complex ... or if the change is poorly managed, institutionalization may take three to five years, or may never be achieved. (p.26)

Another study (Leary, 1983), directed at a science curriculum, found that with one exception all teachers demonstrated more acceptable operational demonstrations of the innovation as a result of the planned interventions based on the CBAM.

SUMMARY

The problem of incongruence between the intentions and the outcomes of educational innovations was explored by reviewing four recurring themes prevalent in the change research literature. McNergney's formula, B=(f)P,E,T, provided the structure in which to discuss three of the four themes. The fourth theme, conceptualization of change, organized around three basic perspectives, illustrated how change efforts vary in the attention given to each of the first three variables. An overview of the CBAM was presented in the second half of this chapter. The overview contained a synopsis of the three key variables that serve as diagnostic tools within the CBAM and research findings to support the premise that the use of the CBAM shows promise results for facilitating curriculum implementation.

CHAPTER 3

METHOD

This chapter describes the procedures used for the collection and treatment of the data. The design, the sample, the description of the instruments used, the steps used to collect the data and the procedures used to analyse the data are presented in sequence.

This study investigated two issues. First it addressed the issue of whether, during the course of participating in concerns - based staff development, teachers experienced a change in attitudes and/or behaviors toward the school - based drug prevention program entitled *Tuning In To Health*. Secondly, the research was conducted to compare these results with those of the Traditional Model for facilitating the implementation of educational innovations.

DESIGN

A pre/post research design with a non - equivalent control group was used to examine the effectiveness of concerns - based staff development in facilitating implementation of educational innovations (see Figure 4). Subjects were divided among two experimental groups and one control group. All subjects were teachers who volunteered to participate in this study. The treatments provided for these teachers included only those activities which would be

expected as part of the introduction of any innovation.

Figure 4. Research design.

GROUP	MEAS. 1	TREAT.	MEAS. 2	TREAT.	MEAS. 3
CBAM	SoC LoU IC	3 hr. CBAM MOD 1	SoC	3 hr. CBAM MOD 2	Soc LoU IC
TRAD	SoC LoU IC	3 hr. TRAD MOD 1	SoC	3 hr. TRAD MOD 2	SoC LoU IC
CNRL	SoC		SoC		SoC

Both experimental groups were provided with a treatment consisting of 2 three-hour inservice sessions. The first treatment, hereafter called the CBAM Modules, and the second treatment, hereafter called the Traditional Modules were delivered by the researcher to Experimental Group 1 and 2 respectively.

Three types of evaluation: a Likert rating scale questionnaire, an open-ended statement and a focused interview were used in an attempt to identify changes in attitudes and behaviors toward the innovation *Tuning In To Health*. On three separate occasions the Stages of Concern About the Innovation Questionnaire and the Open - Ended Statement of Concern About the Innovation were used to collect attitudinal information from all participants. There was concern that repeated administration of the questionnaire within a relatively short period might

contribute to observed changes in concern, therefore a control group was set up. Inasmuch as changes in teachers' behaviour toward the innovation were expected to take more time than changes in teachers' feelings about the innovation, the interviews used to collect information about behaviour were collected from the experimental groups at the beginning and the end of the study. These data were collected from only the experimental groups.

THE SAMPLE

Of specific interest to this study were those teachers in elementary schools, employed by school divisions in the Winnipeg area, willing to implement the optional unit in the Health Education Curriculum that recommends the use of the innovation *Tuning In To Health*. Criteria were established in an attempt to create a homogeneous sample that had not, nor would not participate in other inservice interventions regarding *Tuning In To Health* during the time frame of this study. Only those teachers who met the criteria were included. These criteria specified that teachers:

a) make a commitment to use *Tuning In To Health* in the 1983-1984 school program,

b) were not involved with the materials during the pilot phase of *Tuning In To Health*, and

c) would not be exposed to the materials during the training of *Tuning In To Health* Inservice Leaders.

To obtain the sample, a letter was sent from the

Alcoholism Foundation of Manitoba to school principals inviting teachers of grades 4, 5 and 6 to participate (see Appendix E). In an attempt to obtain a larger sample, a follow-up memo was sent to all those principals who had not replied to the original letter of invitation (see Appendix F). Thirty-seven respondents met the aforestated criteria.

To reduce the possibility of contamination between the two treatments, assignment to the two experimental groups was made by school rather than by individual. Schools were paired according to the number of respondents and at the toss of a coin, randomly assigned to one of two treatment groups. Following this procedure, there were 17 teachers in Experimental Group 1 whereas Experimental Group 2 consisted of 20 teachers. Prior to the collection of any data two schools reduced the number of their participating teachers from 6 to 2 and from 6 to 1 respectively. A third school withdrew from the study completely. The resulting group composition was as follows: Experimental Group 1, receiving the CBAM Modules, consisted of 10 teachers whereas Experimental Group 2, receiving the Traditional Modules, was made up of 17 teachers.

A control group was established by recruiting additional teachers from the schools participating in the study. There were 13 teachers in the control group.

Inasmuch as the study was concerned with human subjects ethical approval was sought and given by the Faculty of Education Ethics Committee (see Appendix G). Remuneration,

up to 35 dollars per teacher per half-day, was paid to the school division or the school to cover the cost of substitutes required.

TREATMENT

The treatment given to the CBAM and Traditional Groups consisted of 2 three - hour inservice sessions. The CBAM Modules were designed using concerns, use and innovation data relative to the innovation *Tuning In To Health*. Inasmuch as these data identified specific information about the innovation and the participants, the CBAM Modules were both task and people-oriented (see Appendix B). The Traditional Modules were designed using suggestions supplied by the Alcoholism Foundation of Manitoba (AFM), the developing agency for the innovation *Tuning In To Health*. Traditional Module 1 followed the suggested inservice agenda for *Tuning In To Health* Leaders (see Appendix C). To provide the Traditional Group with the same amount of inservice time as the CBAM Group and thus avoid a possible "Hawthorne Effect", a session focusing on pharmacology pertaining to *Tuning In To Health* was designed as Traditional Module 2. The Traditional Modules were primarily task oriented in that both modules focused on content and background knowledge and no personal information about the participants was considered when the modules were developed (see Appendix D).

The first modules provided for the CBAM and Traditional

Groups were similar in content but differed in two important aspects. Teachers participating in the CBAM Module were given the opportunity to gain information specific to the content of the entire package of *Tuning In To Health*, whereas the teachers participating in the Traditional Module had an opportunity to become acquainted with only one grade level. Inasmuch as the initial LoU Interview with the CBAM Goup revealed that with one exception all the teachers had not made the required commitment to use the innovation, Cbam Module 1 was designed to provide an opportunity for teachers to indicate their intentions regarding *Tuning In To Health*.

The primary focus of the second modules provided for the CBAM and Traditional Groups differed in that the CBAM Module 2 was designed to reduce concerns related to time whereas Traditional Module 2 was designed to give teachers background information to supplement *Tuning In To Health*.

INSTRUMENTS

All the procedures and instruments used in data collection for this study have been developed by the CBAM project of the Research and Development Center for Teacher Education at the University of Texas in Austin. As previously stated, the types of evaluation used in this study included a Likert rating questionnaire, an open-ended statement and a focussed interview. Specifically, the instruments were the Stages of Concern About the Innovation

Questionnaire, the Open-ended Statement of Concern About the Innovation and the Level of Use and the Innovation Configuration Interviews respectively.

STAGES OF CONCERN QUESTIONNAIRE

The Stages of Concern About the Innovation Questionnaire (SoCQ) consists of 35 items, each designed to reflect concerns relevant to one of seven stages of concern (see Appendix H). Respondents rate the degree to which each item describes their feelings using an eight-point Likert scale ranging from irrelevant to very true of me now. There are 5 items for each stage of concern. Results of the SoCQ are coded and synthesized into a concerns profile with some stages being relatively intense and other stages having lower intensities.

The SoCQ was developed over two and a half years of cross-sectional and longitudinal studies that investigated the concerns of individuals involved with implementing various innovations. In a one-week test-retest study, Hall, George and Rutherford (1979) found the following:

> Stage score correlations ranged from .65 to .86 with four of the seven correlations being above .80 [see Table 1]. Estimates of internal consistency (alpha coeffients) range from .64 to .83 with six of the seven cofficients being above .70 [see Table 2]. A series of validity studies was conducted, all of which provided

increased confidence that the SoC Questionnaire measures the hypothesized Stages of Concern (p.20).

Table 1

Test-retest correlations on the Stages of Concern Questionnare, N = 132

From *Measuring Stages of Concern About the Innovation: A Manual for the Use of the SoC Questionnaire* by G. E. Hall, A. A. George and W.L. Rutherford, 1979, p.11. Copyright 1979 by the CBAM Project, Research and Development Center for Teacher Education, University of Texas. Printed by permission.

Stage	0	1	2	3	4	5	6
Pearson-r	.65	.86	.82	.81	.76	.84	.71

Table 2

Coefficients of internal reliability for the stages of Concern Questionnaire, N = 830

From *Measuring Stages of Concern About the Innovation: A Manual for the Use of the SoC Questionnaire* by G. E. Hall, A. A. George and W. L. Rutherford, 1979, p.11. Copyright 1979 by the CBAM Project, the Research and Development Center for Teacher Education, University of Texas. Printed by permission.

Stage	0	1	2	3	4	5	6
Alphas	.64	.78	.83	.75	.76	.82	.71

As specified in hypotheses 1 and 4, this study is primarily concerned with changes in self and task concerns (SoC 0 - SoC 3). Inasmuch as the reliability of self

concern SoC 0 was found to be .65 and .64 (see Tables 1 & 2), claims about this stage of concern must be interpreted accordingly.

OPEN-ENDED STATEMENT OF CONCERN

In this instrument individuals are asked to describe their concerns on a piece of paper that has stated at the top: "When you think about [the innovation], what are you concerned about?" [see Appendix I]. Individuals' responses were analysed and coded according to the seven stages of concern. Inasmuch as the Open-ended Statement of Concern "is not sufficiently vigorous for psychometric application" (Newlove and Hall, 1976, p. 2) it was used to obtain qualitative data for planning the CBAM Modules. In addition, the results of this instrument were used to support the findings of the SoCQ.

LEVEL OF USE INTERVIEW

The Level of Use (LoU) Interview and the procedures for its use have been described by Heck, Steigelbauer, Hall and Loucks (1981). This interview takes the form of an open - ended conversation which includes specific questions and follow - up probes (see Appendix J). Interviews were conducted over the telephone. The interviews were taped and rated by a trained interviewer. To be distinguished as a user for the purposes of this study the following criteria

were used:

1. individuals must have a copy of *Tuning In To Health*

2. individuals must teach drug education using a unit from *Tuning In To Health* in some sequential fashion rather than by random selection of activities.

3. individuals must schedule drug education for at least 1-30 minute class per cycle for 4 cycles. Teachers meeting these criteria would be at Level III as measured by the Level of Use Interview.

INNOVATION CONFIGURATION INTERVIEW

The procedures for the Innovation Configuration (IC) Interview have been described by Loucks, Newlove and Hall (1976). The IC Interview was conducted simultaneously with the LoU Interview. The Innovation Configuration Checklist (Appendix K) was used to identify the various forms or configurations the innovation had taken within the user system.

DATA COLLECTION

The Time/Task Line represented in Figure 5 outlines the specific steps taken during this study. Research participants and group composition were confirmed by mid - January, 1984. A total of 40 teachers participated in the study. Following the assignment of group membership,

inservice dates were confirmed with the school principals. Data collection began early in February of the same year.

Figure 5: Time-task line.

Nov. 83 - Jan. 84	Recruit Sample
Jan 84	Assign Participants to Groups Confirm Inservice Dates
Feb. - Mar. 84	Collect Measure 1 (Soc, LoU & IC Data) Anaylyse Data from CBAM Group Design CBAM Module 1 Obtain Inservice Guidelines from AFM Design Traditional Module 1 Deliver Inservices (Treatment 1)
April - May 84	Collect Measure 2 (SoC Data) Analyse DATA from CBAM Group Design CBAM and Traditional Modules 2 Deliver Inservices
June 84	Collect Measure 2 (SoC, LoU & IC Data)
Aug. 84 - Mar. 85	Analyse Data Write Report

The first SoCQ was mailed to all participants. In addition the the Open-Ended Statement of Concern was sent to participants in both experimental groups. In order to use the information provided by the SoCQ and the Open-ended statement of Concern to plan the first CBAM module the forms completed by the CBAM Group were collected personally by the researcher. On the other hand, the data provided by the Traditional Group and the Control Group were not required for planning purposes and therefore were returned via a stamped self-addressed envelope to the researcher. All concerns data was received from the CBAM Group and the

Control Group whereas the Traditional Group had a return rate of 94.1 %.

Levels of Use and Innovation Configuration data were also collected from the two experimental groups early February. These interviews and those conducted later in the study were conducted over the telephone by a trained interviewer independent of the researcher.

In an attempt to keep the treatments as pure as possible the researcher did not examine the data from the participants in the Traditional Group until after all staff development interventions were complete.

Using the SoCQ, LoU and IC data collected from the CBAM Group, the first CBAM Module was designed. The Traditional Module was designed using the guidelines that had been developed by the AFM for the *Tuning In To Health* Inservice Leaders. The first of the 2 three - hour sessions for the CBAM Group and the Traditional Group were given by the researcher on February 23, 1984 and March 2, 1984 respectively.

The SoCQs and the Open - Ended Statements of Concern were mailed to teachers in the experimenal groups a second time at the end of March. The SoCQ was also mailed to teachers in the Control Group. All forms were returned by mail in stamped self - addressed envelopes. The Traditional Group dropped to 82.35 % whereas both the CBAM Group and the Control Group remained at 100 % return. The data received from the CBAM Group was analysed and used to focus the

second CBAM Module. The second of the three-hour sessions for the CBAM Group was scheduled for May 30, 1984. Attendance dropped to 70%. The Traditional Group received their second session on April 30, 1984. Attendance dropped to 76.47%

In June, the SoCQs and the Open-Ended Statements of Concern were mailed to teachers of the experimental groups a third and final time. Teachers in the control group also received the SoCQs. Completed forms were returned by mail in stamped self-addressed envelopes. Per cent returns were 60 %, 88.23% and 53.4 % for the CBAM, Traditional and the Control Groups, respectively. Interviews were conducted with participants of the two experimental groups to collect LoU and IC data.

Data from all three groups were analysed during the fall and early winter.

DATA ANALYSIS

To determine whether teachers experienced a change in attitudes and/or behavior toward *Tuning In To Health* as a function of the planned intervention, both descriptive and statistical techniques were used to analyze the results of the Stages of Concern Questionnare, the Level of Use and Innovation Configuration interviews.

Descriptive procedures included a presentation and discussion of group profiles or plot graphs of the concerns data. Group SoC Stage Profiles for the CBAM, the

Traditional and the Control Groups as well as profiles for those teachers identified as users and those identified as nonusers were created by the computer software program *Program SOC* made available courtesy of the Research and Development Center for Teacher Education at the University of Texas. This program uses percentile scores. A second set of graphs, illustrating the changes in concern of each group, were created using group mean scores. Group mean scores for the first four stages of concern were plotted creating a profile for the Awareness, Informational, Personal and Management Concerns respectively. The *Program SOC* also provided the number of teachers that had their highest concern at each stage. These data were also presented in percentages.

To present the results of the SoCQ a 3 x 3 design was used for descriptive purposes whereas a 2 x 3 design was used for inferential purposes. This action was taken because the researcher believed that the validity of the responses on SoCQ 3 was suspect. Analysis of variance was used to examine the degree of change in concerns about the innovation as a function of concerns-based staff development and to compare the change in concerns experienced by each of the experimental groups. Chi square analysis was calculated on the results of the Levels of Use and Innovation Configuration Interviews. Analysis of variance also used to evaluate post hoc observations of the Concerns and use data.

SUMMARY

The procedures used in the course of this study, including both those used for the collection and treatment of the data, have been presented in this chapter. The information was organized under the headings Design, The Sample, Instruments, Data Collection and Data Analysis respectively. The specific findings of the study are presented in the Chapter Four whereas the conclusions and implications of these results are discussed in Chapter Five.

CHAPTER 4

RESULTS

The results relating to the six hypotheses of this study are presented in this chapter. Data pertaining to hypotheses 1 and 4, 2 and 5, and 3 and 6 are organized under the headings Concerns, Use and Innovation Configurations respectively. Additional results are included under the heading Supplement to the Hypotheses. Descriptive and statistical techniques are used to describe the data.

Conclusions and implications based on this data will follow in the next chapter.

CONCERNS

It is believed that teachers involved with educational innovations express specific attitudes relative to the innovation in varying degrees of intensity (Hall and Loucks, 1978b). Individuals do not have concerns at a single stage but rather a conglomeration of concerns with one or two stages being relatively intense (Hall and George, 1978). Assumptions about this relationship between the innovation and teachers' concerns are stated in Hypotheses 1 and 4.

Hypothesis 1 is a reflection of previous research on the Concerns-Based Adoption Model (CBAM) in that it addresses the question of whether staff development designed according to the concepts and tenets of the CBAM can

influence users of educational innovations in desirable directions. The first hypothesis stated that:

1. Teachers will express a reduction in self concerns and an increase in task concerns about *Tuning In To Health* as measured by the Stages of Concern Questionnaire following staff development focused by the CBAM data.

Hypothesis 4 builds on the research data to date by questioning whether staff development designed according to the key dimensions of the CBAM has a greater influence on users of educational innovations than staff development designed using the Traditional Model focused by preadoptive information. Hypothesis 4 stated that:

4. Teachers participating in the CBAM Modules will express a greater reduction in self concerns and greater increase in task concerns about *Tuning In To Health*, as measured by the Stages of Concern Questionnaire, than teachers participating in the Traditional Modules.

The results of the Stages of Concern Questionnaire (SoCQ) are discussed using SoC Profiles, percentile scores and differences, and mean scores. In addition, one-way analysis of variance was calculated on the change scores for the self and task concerns.

Information for the SoC Profiles included in this chapter was synthesized from the profiles of the three groups at each testing period created by the computer software package *Program SOC*. The vertical axis of the SoC Profiles describes the relative intensity of each

concern in percentile scores. The seven stages of concern: awareness, informational, personal, management, consequence, collaboration and refocusing, are shown on the horizontal axis by the numbers 0 - 6.

The concerns expressed by the teachers in each of the three groups at the beginning of the study, prior to any staff development intervention are depicted in Figure 6. The percentile scores plotted in Figure 6 and the differences between each group's percentile score and the highest percentile score at each stage are given in the accompanying table (see Table 3). Generally there was little difference among the overall concerns expressed by the teachers in the CBAM, Traditional and Control Groups at the beginning of the study, although there was some difference in the intensity of concerns (see Figure 6). Teachers in all three groups had their highest concerns at Stage 0, 1, and 2 (self concerns), followed by concerns at Stage 3 (task concerns) and their lowest concerns at Stages 4, 5 and 6 (impact concerns). These profiles support the findings that when introduced to an innovation, individuals have their greatest concern for how they may be affected by the innovation and little concern about the impact of the innovation on the students (George and Rutherford, 1979; Loucks and Hall, 1979).

Figure 6: Concerns profiles on SoCQ 1.

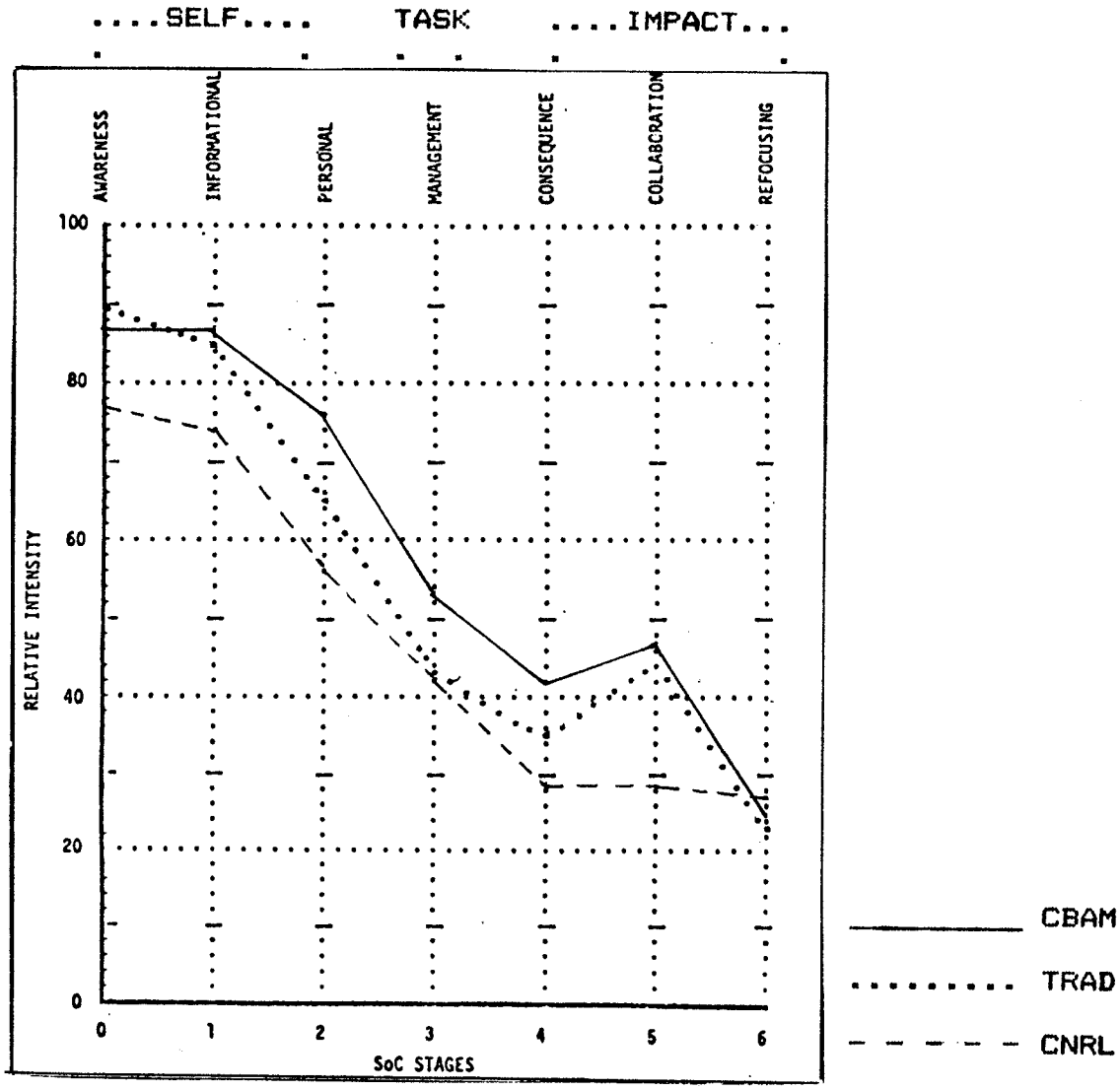


Table 3

Percentile scores and differences on SoCQ 1

	PERCENTILE SCORES							DIFFERENCES						
	0	1	2	3	4	5	6	0	1	2	3	4	5	6
CBAM	87	87	76	53	42	47	25	-2	0	0	0	0	0	-2
TRAD	89	85	65	43	35	44	23	0	-2	-11	-10	-7	-3	-4
CNRL	77	74	57	42	29	29	27	-12	-13	-19	-11	-13	-18	0

Previous research on the CBAM suggests that a spread in excess of 10 percentile points on any one concern to be a meaningful difference. Generally the relative intensity of the concerns expressed by the CBAM Group was similar to that expressed by the Traditional Group with the exception of higher SoC 2 and SoC 3 concerns (see Table 3). In relation to the Control Group, the CBAM Group expressed significantly more intense concerns at all stages with the exception of SoC 6. The difference ranged from 11 - 19 percentile points higher than those expressed by the Control Group (see Table 3). Similarly, the Traditional Group expressed relatively more intense concerns than the Control Group although fewer of them were significant (see Table 3). The reduced intensity of the concerns expressed by the Control Group may reflect the fact no staff development interventions concerning the innovation were scheduled for them during the time frame of this study: thus they were less concerned about implementing the innovation at the time of testing.

As previously described in the Methods Chapter, the CBAM and Traditional Groups each participated in 2 three - hour inservice sessions related to the innovation, *Tuning In To Health*. Concerns data relative to the innovation were collected from all three groups prior to the first intervention, mid-point between the first and second intervention and following the second intervention. The concerns expressed by the CBAM, Traditional and Control Groups on the repeated administration of the SoCQ are

depicted in Figure 7, 8, and 9 respectively. The percentile scores plotted in each of these figures and the differences at each stage of concern are given in the accompanying tables, Table 4, 5 and 6 respectively. Differences were calculated at each stage by subtracting the group percentile score from the highest percentile score at that stage. Positive numbers indicate an increase whereas negative numbers denote a decrease. The larger the number the greater the difference expressed between the groups.

Due to delays, the final SoCQs from the CBAM and Control Groups were collected in late June when the teachers were preparing for summer vacation. The Final SoCQs from the Traditional Group were collected mid May to early June. Although the response rate from the Traditional Group increased from 82.35% to 88.23%, the response rate from the CBAM and Control Groups dropped to 60% and 53.4% respectively. This was not consistent with earlier responses from these groups. The researcher suspected that end-of-term activity had biased the results as well as the response rate. Other educational researchers (Frary, McBee and Weber, 1985) have expressed similar concerns about results collected in June. Inasmuch as the validity of the scores on the third SoC Questionnaire was suspect, the data generated from this measure was not included in any of the statistical analysis. These data were included in the graphic presentation of the data.

Figure 7: Concerns profiles of the CBAM group.

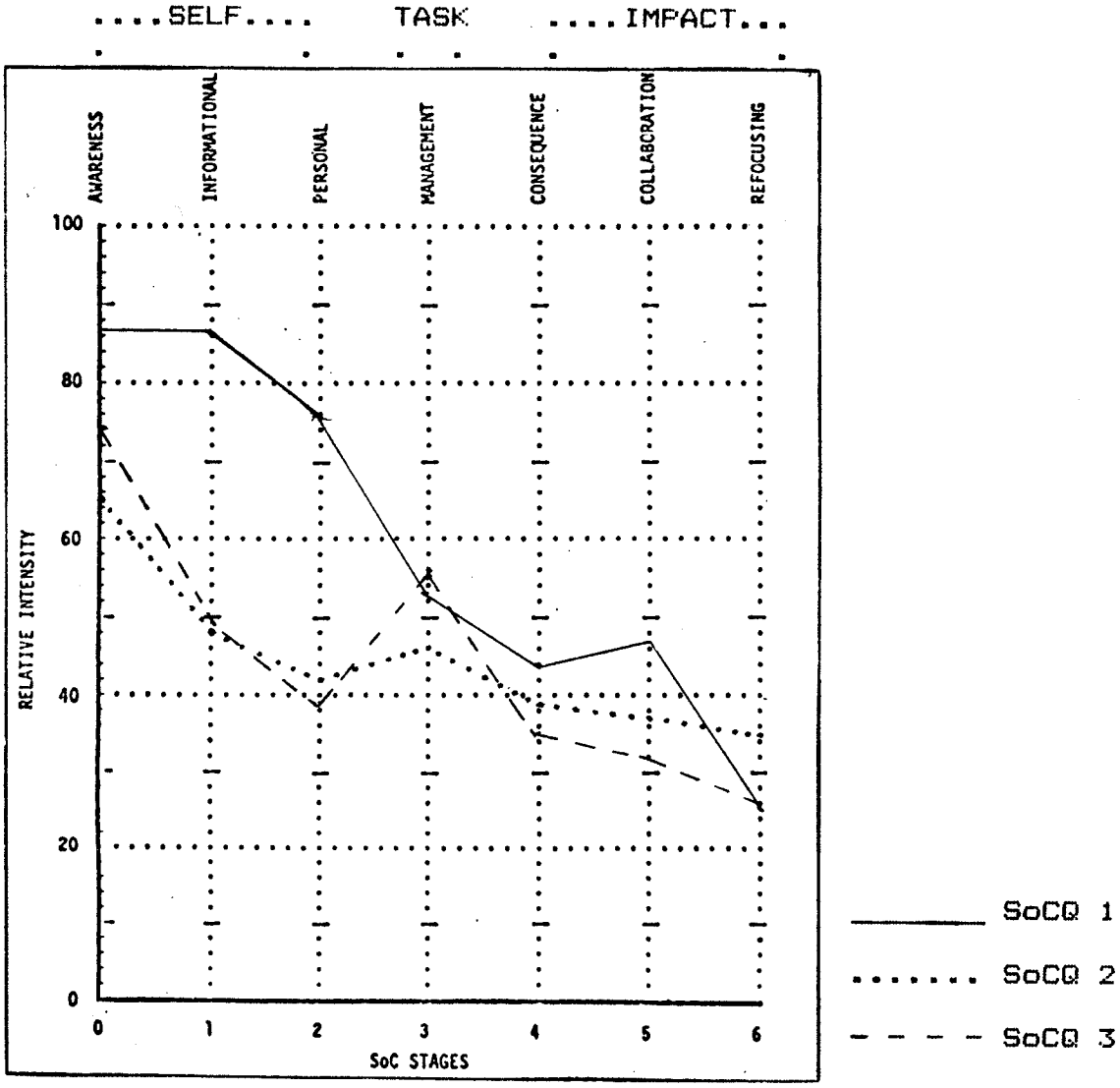


Table 4

Percentile scores and differences of the CBAM group.

	PERCENTILE SCORES							DIFFERENCES						
	0	1	2	3	4	5	6	0	1	2	3	4	5	6
SoCQ 1	87	87	76	53	42	47	25	0	0	0	0	0	0	0
SoCQ 2	65	48	42	46	39	37	35	-22	-39	-34	-7	-3	-10	-10
SoCQ 3	74	49	39	56	35	32	26	-13	-38	-37	+3	-7	-15	+1

Figure 8: Concerns profiles of the Traditional group.

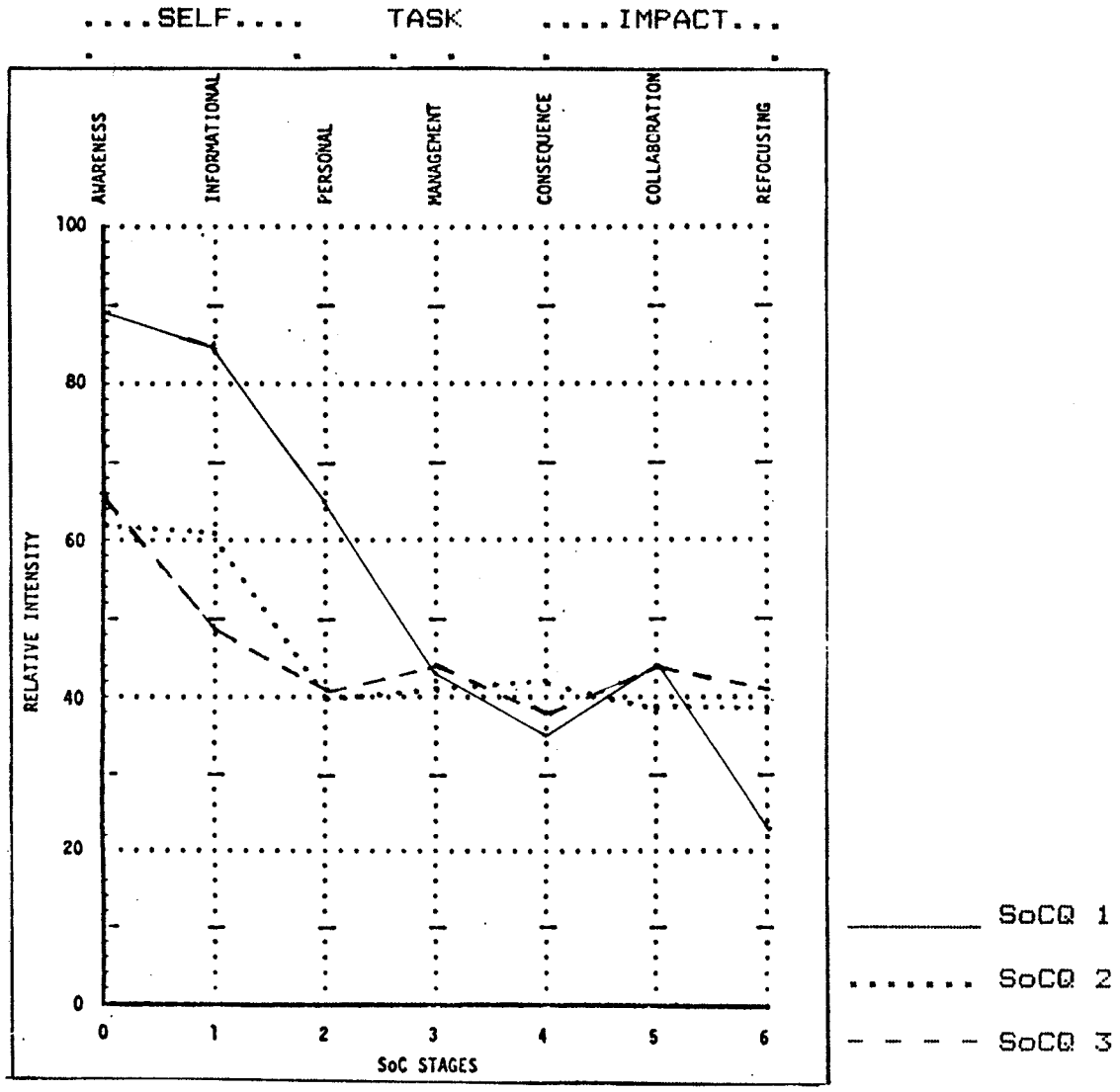


Table 5

Percentile scores and differences of the Traditional

	PERCENTILE SCORES							DIFFERENCES						
	0	1	2	3	4	5	6	0	1	2	3	4	5	6
SoCQ 1	89	85	65	43	35	44	23	0	0	0	0	0	0	0
SoCQ 2	62	61	40	41	42	39	39	-27	-24	-25	-2	+7	-5	+16
SoCQ 3	66	49	41	44	38	44	41	-23	-36	-24	+1	+3	0	+18

Figure 9: Concerns profiles of the Control group.

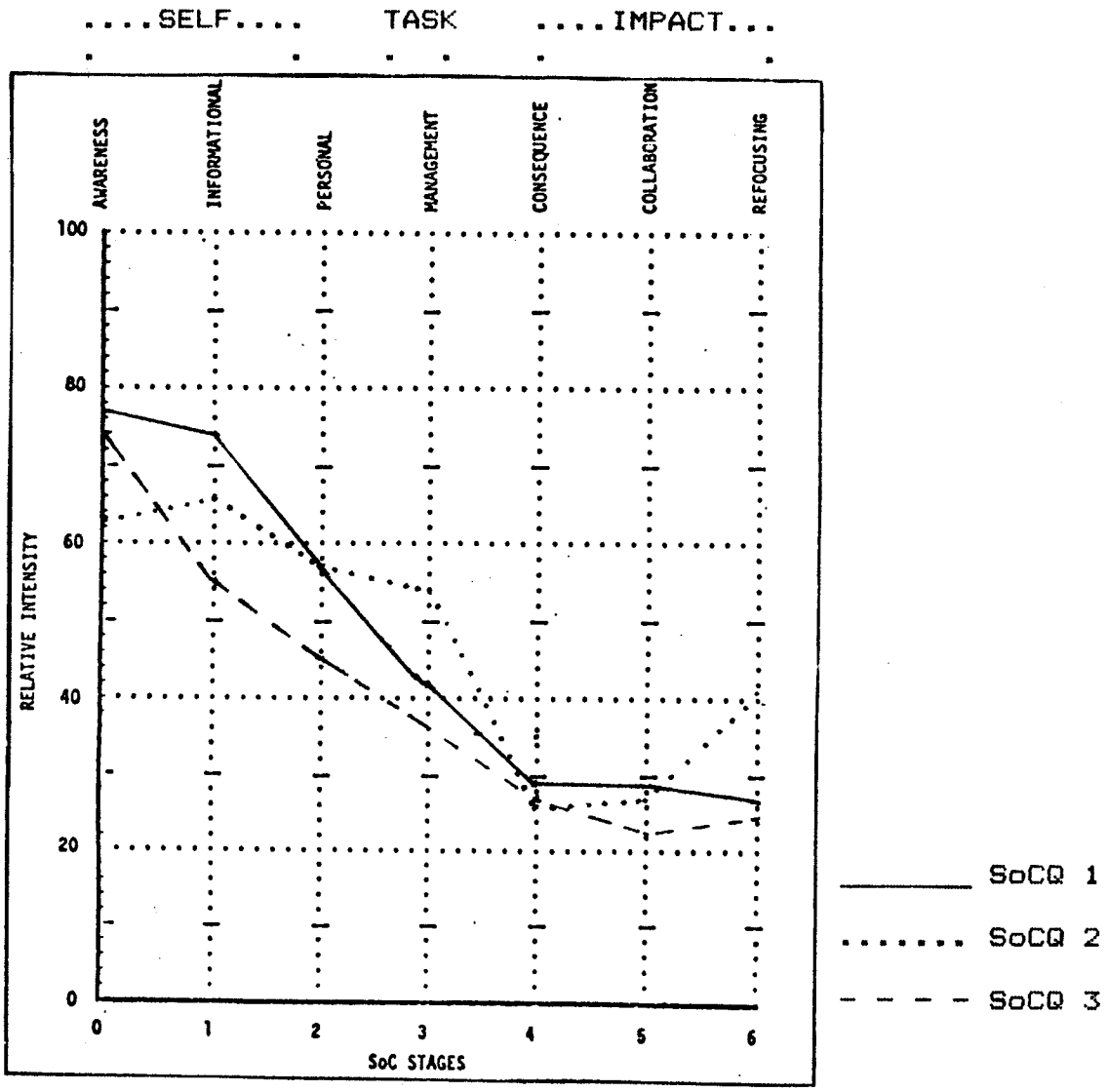


Table 6

Percentile scores and differences of the Control group.

	PERCENTILE SCORES							DIFFERENCES						
	0	1	2	3	4	5	6	0	1	2	3	4	5	6
SoCQ 1	77	74	57	42	29	29	27	0	0	0	0	0	0	0
SoCQ 2	63	66	57	54	26	27	41	-14	-8	0	+12	-3	-2	+14
SoCQ 3	74	55	46	35	27	23	25	-3	-19	-11	-7	-2	-6	-2

The SoC profile of the CBAM Group (see figure 7) indicates that change occurred in the teachers' self concerns (SoC 0, SoC 1 & SoC 2) but not in either the task (SoC 3) or impact concerns (SoC 4, SoC 5 & SoC 6). Similarly the SoC profile of the Traditional Group (see figure 8) indicates that self concerns were reduced and task concerns remained unchanged. There was an increase in refocusing concerns (one of the three impact concerns) which suggests that as teachers became more familiar with *Tuning In To Health* they were somewhat more interested in looking for yet another innovation to satisfy their needs. Figure 9 indicates that the least change overall was expressed by the Control Group.

It was hypothesized that self concerns (SoC 0, SoC 1 and SoC 2) would decrease and task concerns (SoC 3) would increase over time. Inasmuch as hypotheses 1 and 4 are interested in self and task concerns the following four figures and accompanying tables compare the group means of each group on awareness (SoC 0), informational (SoC 1), personal (SoC 2) and management (SoC 3) concerns respectively. The range of mean scores (0-35) is shown along the vertical axis of the graphs illustrated in Figures 10-13. The pre, mid and post tests are shown on the horizontal axis by the numbers 1, 2, and 3. Analysis of variance using raw scores was judged to be inappropriate due to the non - equivalent nature of the Control Group; thus change scores were used. As previously mentioned, the data

generated by the SoCQ 3 was not included for inferential purposes therefore only one set of change scores (SoCQ 1 - SoCQ 2) was calculated.

The change in intensity of awareness concerns (SoC 0) for each of the groups over the three test periods is depicted in Figure 10.

Figure 10. Changes in awareness concerns (SoC 0) as illustrated by group mean scores.

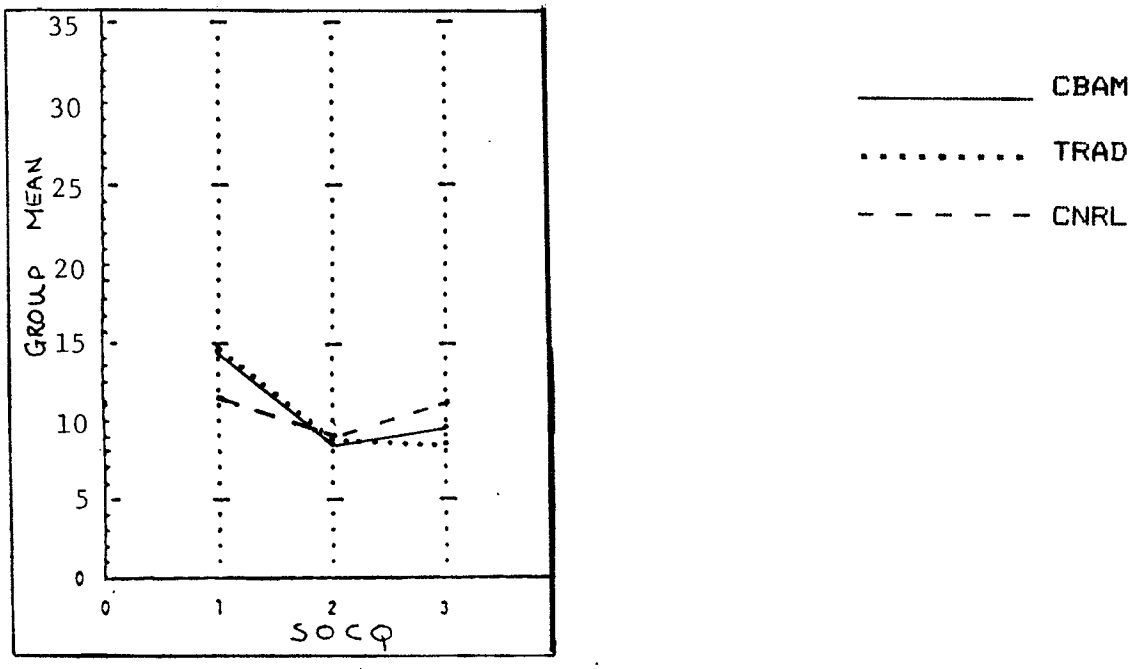


Table 7

Change scores for the awareness concern (SoC 0) between SoCQ 1 and SoCQ 2

GROUP	SoCQ 1	SoCQ 2	Change scores
CBAM	14.50	8.20	-6.30
TRAD	14.88	8.85	-6.03
CNRL	11.38	8.92	-2.46

Table 7 illustrates that the group mean scores on this subscale were smaller after the second administration of the SoC Questionnaire (SoCQ) than after the first SoCQ. Furthermore group mean scores suggest that the greatest reduction was expressed between SoCQ 1 and SoCQ 2 by the CBAM and Traditional Groups. To determine if the difference among the groups was statistically significant an analytical analysis using a one - way analysis of variance was calculated on the resulting change scores for the CBAM, Traditional and Control groups between SocQ 1 and SoCQ 2. The difference was found to be not significant (see Table 8).

Table 8

ANOVA summary of the changes in awareness concerns (SoC 0) between SoCQ 1 and SoCQ 2

	SS	DF	MS	F	
BETWEEN	43.57	2	21.79	$F = 0.04_{2,33}$	NS
ERROR	1595.18	33	48.34		

Changes in the intensity of the informational concerns (SoC 1) for the CBAM, Traditional and Control Groups over the three test periods is depicted in Figure 11.

Figure 11. Changes in informational concerns (SoC 1) illustrated by group mean scores.

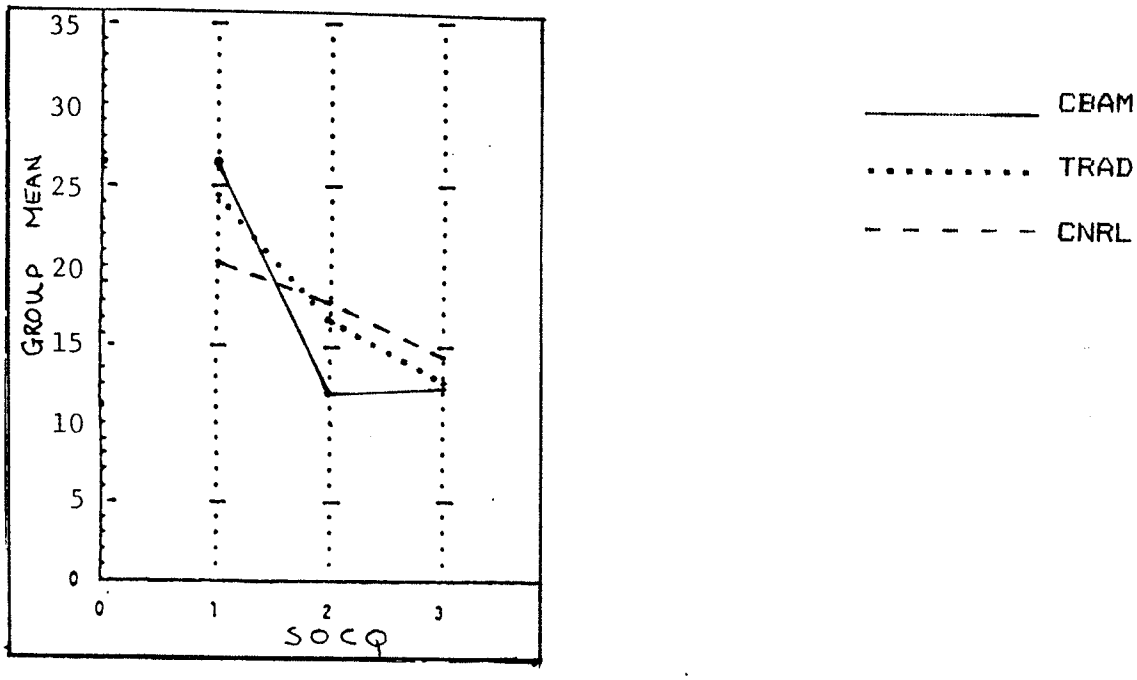


Table 9

Change scores for the informational concerns (SoC 1) between SoCQ 1 and SoCQ 2.

GROUP	SoCQ 1	SoCQ 2	Change Scores
CBAM	26.40	12.00	-14.40
TRAD	24.38	16.31	-8.07
CNRL	20.23	17.92	-2.31

Following staff development interventions both the CBAM and the Traditional Groups expressed fewer informational concerns about the innovation than the Control Group who did not participate in any staff development relative to the innovation. In relation to the Control Group, the reduction expressed by the Traditional Group was 8.07 : 2.31 or 3 1/2

times as great (see Table 9). Furthermore, Table 9 presents data that illustrates that the reduction expressed by the CBAM Group compared to the Control Group was 14.40 : 2.31 or nearly 7 times as great.

To determine if this difference was statistically significant change scores from SoCQ 1 to SoCQ 2 were calculated for each individual. An analytical analysis using a one-way analysis of variance was calculated on the resulting change scores for each group. The F value was found to be significant at .01 (see Table 10).

Table 10

ANOVA summary of the changes in informational concerns (SoC) between SoCQ 1 and SoCQ 2

	SS	DF	MS	F
BETWEEN	828.37	2	414.19	$F = 6.07_{2,33}, <.01$
ERROR	2252.38	33	68.25	

Post hoc comparisions were evaluated against a special critical value of F using the Scheffé test. Only the reduction expressed by the CBAM Group compared to the reduction expressed by the Control Group was sufficiently strong to exceed the critical $F_{.05\ 2,33} = 6.6$.

Changes in the intensity of personal concerns (SoC 2) for the CBAM, Traditional and Control Groups over the three test periods are depicted in Figure 12.

Figure 12. Changes in personal concerns (SoC 2) illustrated by group mean scores.

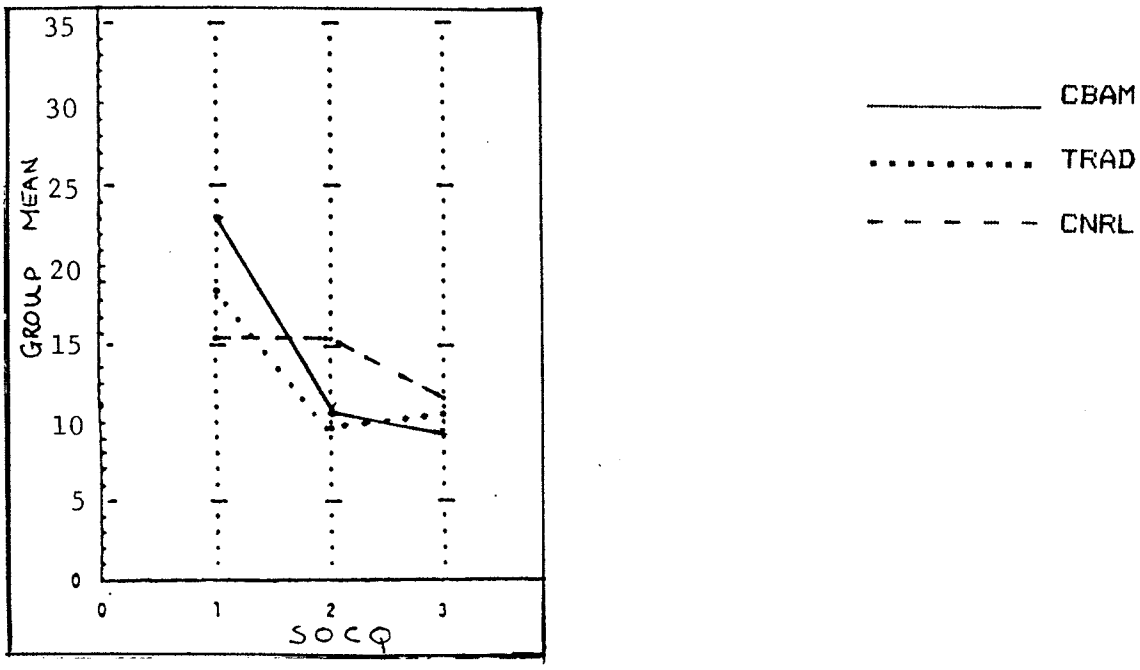


Table 11

Change scores for the personal concerns (SoC 2) between SoCQ 1 and SoCQ 2.

GROUP	SoCQ 1	SoCQ 2	Change Scores
CBAM	23.00	10.80	-12.20
TRAD	18.19	9.69	-8.50
CNRL	15.38	15.46	-0.08

Changes in personal concerns followed a pattern similar to that shown with informational concerns. The group mean of the CBAM Group was reduced from 23.00 to 10.80 or 12.20 (See Table 11) following the first intervention. The group mean of the Traditional Group was reduced by 8.5 (see Table 11). The Control Group who were not provided with any staff

development interventions expressed negligible change from SoCQ 1 to SoCQ 2 (see Table 11). An analytical analysis using a one - way analysis of variance was calculated on the change scores of the CBAM, Traditional and Control Groups. This difference was shown to be significant at .05 (see Table 12).

Table 12

ANOVA summary of the changes in personal concerns (SoC 2) between SoCQ 1 and SoCQ 2

	SS	DF	MS	F
BETWEEN	674.19	2	337.10	$F = 3.48_{2,33}$, <.05
ERROR	3192.78	33	96.75	

Post hoc comparisions were evaluated against a special critical value of F using the Scheffé test. Only the reduction expressed by the CBAM group compared to the reduction expressed by the Control Group was sufficiently strong to exceed the $F_{.05\ 2,33} = 6.6$.

The change in intensity of the management concerns (SoC 3) for the CBAM, Traditional and Control Groups over the three test periods is depicted in Figure 13. Both the CBAM and the Traditional Groups expressed a slight reduction in management concerns following staff development interventions rather than an increase as hypothesized. The Control Group expressed slightly higher management concerns

on the second SoCQ.

Figure 13. Changes in management concerns (SoC 3) illustrated by group mean scores.

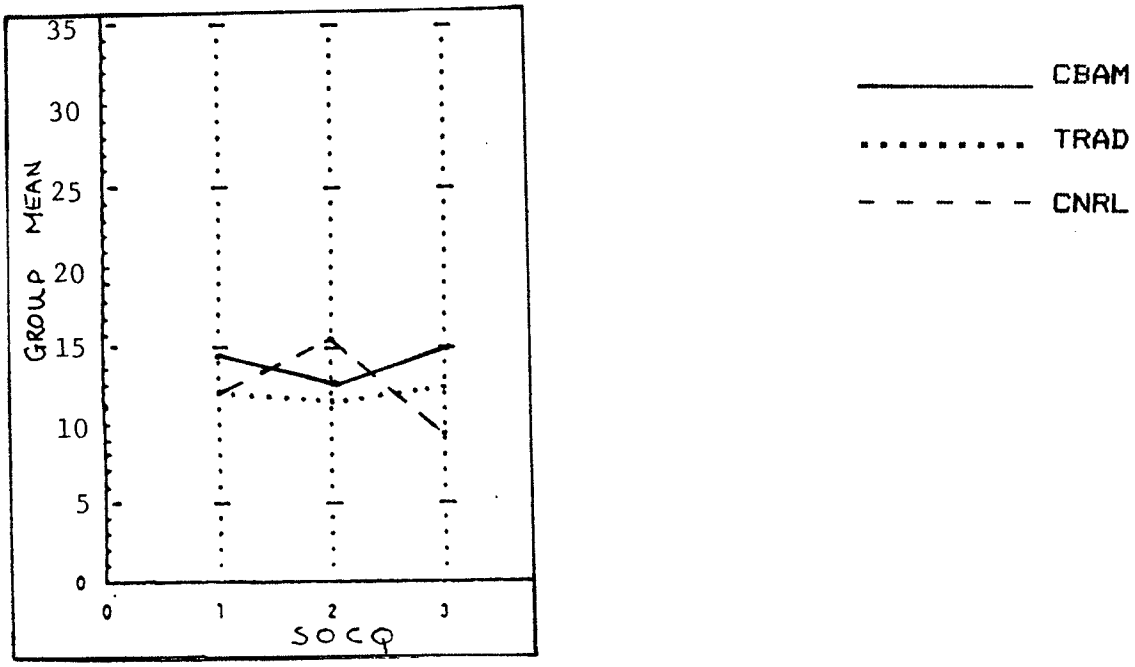


Table 13

Change scores for the management concerns (SoC 3) between SoCQ 1 and SoCQ 2.

GROUP	SoCQ 1	SoCQ 2	Change Scores
CBAM	14.10	12.70	-1.40
TRAD	12	11.54	-0.46
CNRL	12	15.62	+3.62

An analytical analysis using a one - way analysis of variance was calculated on the change scores of the CBAM, Traditional and Control Groups. This difference was found

to be not significant (see Table 14).

Table 14

ANOVA summary of the changes in management (SoC 3) between SoCQ 1 and SoCQ 2

	SS	DF	MS	F
BETWEEN	92	2	46	$F = 1.18_{2,33}$, NS
ERROR	1291	33	39.12	

SUMMARY

In review, it was hypothesized that self concerns (SoC 0, SoC 1 and SoC 2) would decrease and task concerns (SoC 3) would increase following concerns - based staff development interventions. Furthermore, it was hypothesized that implementation efforts designed to address the concerns teachers have about the innovation would be more effective than only using information about the innovation as a basis for staff development.

The concerns of teachers who were exposed to either the CBAM or the Traditional Modules changed more dramatically than the concerns of teachers who did not receive any inservice intervention. Although the hypotheses were stated with regards to both self and task concerns, the only significant change occurred with the self concerns. These findings are consistent with previous research that found self concerns changed significantly as a result of staff

development interventions whereas task and impact concerns were less affected (Hall and Loucks, 1979). With the exception of awareness concerns (SoC 0) only the CBAM Group expressed significantly fewer self concerns following staff development. This exception may be a function of the low (.65) test-retest correlations for this subscale as much as a failure to reduce awareness concerns.

These results do support the first portion of hypothesis 1 that stated a greater reduction in self concerns could be expected following concerns - based interventions. Inasmuch as the post hoc comparasions of the change in self concerns expressed by the CBAM Group compared with the change in self concerns expressed by the Traditional Group was not significant, this study does not support the first portion of hypothesis 4 as stated. It should be noted that the change in self concerns expressed by the CBAM Group compared with the Control Group was significant whereas the change in self concerns expressed by the Traditional Group compared to the Control Group was found to be not significant. Task concerns were not significantly increased; thus these findings do not support the second portion of either hypothesis 1 or 4.

USE

One indication of the success of implementation efforts is whether teachers actually use the innovation or not. It is believed that as individuals become more familiar with an innovation their behavior changes from familiarization with to increased sophistication in using the innovation. Hall et al. (1980) state that individuals begin with "nonuse" of the innovation, then move to "orienting" themselves to the innovation and preparing for first use. Usually they begin to use an innovation at a "mechanical" level where planning is short-term and organization and co-ordination of the innovation are disjointed. As experience increases, users move into a "routine" pattern of use. Users may "refine"their use of the innovation, "integrate" their refinements with others or "renew" their use through another innovation. Assumptions related to this relationship between the levels of use and the innovation *Tuning In To Health* in this study are stated in Hypothesis 2 and 5.

Hypothesis 2 is a reflection of previous research on the CBAM in that it addresses the question of whether staff development designed according to the concepts and tenets of the CBAM can influence users of educational innovations in desirable directions. In review the second hypothesis states that:

2. Teachers will report higher Levels of Use of *Tuning In To Health* as measured by the Levels of Use Interview following staff development focused by the CBAM data.

Hypothesis 5 builds on the research data to date by questioning whether staff development designed according to the key dimensions of the CBAM has a greater influence on users of educational innovations than staff development designed using the Traditional Model focused by preadoptive information. In review hypothesis 5 stated that:

5. Teachers participating in the CBAM Modules will report higher Levels of Use of *Tuning In To Health* as measured by the Levels of Use Interview than teachers participating in the Traditional Modules.

Distribution tables and chi square are used to discuss the results of the LoU Interviews in relation to Hypotheses 2 and 5. Eight distinct levels of use, ranging from LoU 0 - LoU VI, have been hypothesized (Hall et al., 1975) and verified (George and Rutherford, 1978). The names and typical behaviors indicative of each level of use are presented in Appendix L.

The percent distribution of teachers at each Level of Use as reported in the LoU Interviews before and after the two types of inservice interventions is shown in Table 14. Inasmuch as the criteria for participation in this study stipulated that teachers must be willing to implement the innovation during the current school year and participate in inservice training, the researcher expected all teachers to be classified at LoU II (preparation) prior to any inservice interventions. This was not the case. Table 15 shows that 90% of the CBAM group and 100% of the Traditional group were

initially classified at LoU I.

Table 15

Percent Distribution at Each Level of Use

Module	0	I	II	III	IVA	IVB	V	VI
CBAM								
PRE	0	90	10	0	0	0	0	0
POST	0	0	20	80	0	0	0	0
TRADITIONAL								
PRE	0	100	0	0	0	0	0	0
POST	0	0	61.5	38.4	0	0	0	0

With one exception, all teachers expressed reservation about implementing Tuning In To Health until after the first inservice indicating that they were still seeking information about the innovation and thus were classified as exhibiting behaviors indicative of LoU I (orientation). The one exception, in the CBAM group, was an individual who had obtained a copy of the innovation prior to the interview and made a decision to use the innovation in the classroom. Following the 2 three-hour inservice interventions 80% of the CBAM group moved to LoU III (mechanical use) whereas 38.4% of the Traditional group reported behavior typical of LoU III.

An analytical comparision using the chi square statistic was calculated (see Table 16).

Table 16

A comparison between the CBAM and Traditional inservice interventions.

GROUP		LEVELS OF USE							
		0	I	II	III	IVA	IVB	V	VI
CBAM PRE	EXP	0	4.78	2.39	2.83	0	0	0	0
	OBS	0	9	1	0	0	0	0	0
CBAM POST	EXP	0	4.78	2.39	2.83	0	0	0	0
	OBS	0	0	2	8	0	0	0	0
TRAD PRE	EXP	0	6.22	3.11	3.67	0	0	0	0
	OBS	0	13	0	0	0	0	0	0
TRAD POST	EXP	0	6.22	3.11	3.67	0	0	0	0
	OBS	0	0	8	5	0	0	0	0

The resulting chi square [χ^2 (6, N = 46) = 50.19, $p < .001$] indicates that some significant event other than chance is causing the results to spread out as they do. It can not be concluded whether the significance is within the treatment conditions pre to post or whether the the reason for the significance is due to differences between the CBAM and the Traditional Groups.

George and Rutherford (1978) state that "users of an innovation are at or above LoU III (Management), while nonusers are at or below LoU II (Preparation)" (p.12). When the original LoU data was collapsed to reflect George and Rutherford's generalization those teachers at Level I and II were classified as nonusers whereas those at Level III were

classified as users. At the outset of the study, one individual in the CBAM Group was classified as a user whereas the remaining teachers were classified as nonusers (see Table 17). At the conclusion of the study, the number of users had increased to 13, 8 in the CBAM Group and 5 in the Traditional Group (see Table 17).

Table 17

Classification of users and nonusers before and after staff development

GROUP	NONUSERS	USERS	N
PRE			
CBAM	9	1	10
TRAD	17	0	17*
POST			
CBAM	2	8	10
TRAD	8	5	13*

*1 teacher did not complete study due to maternity leave and 3 teachers were not available for final interview

As previously stated, the criteria set to determine minimum acceptable use (Level III) for this study were that teachers must:

A) have a copy of *Tuning In To Health*

B) teach drug education using a unit from *Tuning In To Health*

C) schedule drug education for at least 30 minutes per cycle for a minimum of 4 cycles

Following these criteria, the numbers of users and nonusers

are consistent with those in Table 17.

A statistical analysis using chi square was calculated on the number of users and nonusers in the Traditional and CBAM Groups at the outset of this study and a second time on the number of users and nonusers in each group following staff development interventions. The chi square on the pre measure [χ^2 (1, N = 23) = 1.39] was found to be not significant therefore it can be assumed that there were no real differences in terms of their use of the innovation between the two groups prior to staff development interventions. The post measure of chi square indicated that there were significant differences following the staff development interventions [χ^2 (1, N = 23) = 3.98, $p < .05$].

SUMMARY

In summary, it was hypothesized that higher Levels of Use would be reported following concerns - based interventions. Furthermore, it was hypothesized that implementation efforts designed according to the CBAM would result in higher Levels of Use than staff implementation efforts designed according to the Traditional Model. Inasmuch as the CBAM Group had fewer nonusers and more users than might be expected by chance following staff development this study offers evidence to support hypothesis 2. Furthermore the Traditional Group had more nonusers and fewer users than could be expected by chance therefore hypothesis 5 is supported.

INNOVATION CONFIGURATIONS

It is believed, that "as an innovation is disseminated and the developer's model is translated into practise in different classrooms, one or more of the components of the innovation may be modified to fit local needs" (Hord and Loucks, 1980, p.17). How the innovation has been translated into practise in the classroom can be systematically documented with the aid of the Innovation Configuration Checklist (Heck et al., 1981). Assumptions about the forms that the innovation would take following staff development interventions are stated in Hypotheses 3 and 6.

Hypothesis 3 is a reflection of previous research on the CBAM in that it addresses the question of whether staff development designed according to the concepts and tenets of the CBAM can influence users of educational innovations in desirable directions. In review the third hypothesis stated that:

3. teachers would describe more component variations within the scope of *Tuning In To Health* as measured by the Innovation Configuration Interview following staff development focused by CBAM data.

Hypothesis 6 builds on the research data to date by questioning whether staff development designed according to the key dimensions of the CBAM has a greater influence on users of educational innovations than staff devlopment designed using the Traditional Model focused by preadpotive information. In review Hypothesis 6 stated that:

6. Teachers participating in the CBAM Modules will describe more component variations within the scope of *Tuning In To Health* as measured by the Innovation Configuration Interview than teachers participating in the Traditional Modules.

The results of the Innovation Configuration Interviews were recorded on the Innovation Configuration Checklist (see Appendix K). For each of the 8 components included in the checklist there were several configurations or operational forms that teachers might describe as being indicative of their behaviour regarding *Tuning In To Health*. Not all configurations are considered acceptable definitions of the innovation in practise. These behaviours fall in the category outside the intended program. Teachers' descriptions of their use of *Tuning In To Health* prior to and following staff development are presented in Table 18. The circled numbers in the table represent any configuration classified as being within the intended innovation. Final use as reported by the LoU Interviews is also included in Table 18. The Innovation Configuration data illustrated that most of the component variations within the scope of the innovation described by teachers following staff development interventions were described by users although nonusers also described some component variations considered to be within the innovation. It should also be noted that without exception some of the behaviours described by the users were considered to be outside the scope of the

innovation.

Table 18

Innovation configuration descriptions described before and after staff development

PRE DESCRIPTIONS								POST DESCRIPTIONS								FINAL
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	USE
CBAM Group																
4	4	6	3	3	4	5	4	(1)	(2)	(3)	(1)	(1)	(2)	4	(3)	user
4	5	6	3	3	4	5	4	(1)	(3)	4	(1)	(2)	4	5	4	user
4	5	6	3	3	4	5	4	(1)	(1)	4	(2)	(2)	4	5	4	user
4	5	6	3	3	4	5	4	(1)	(1)	(2)	(2)	(2)	4	5	4	user
(1)	(2)	4	(1)	(1)	(2)	5	(1)	(3)	(3)	4	(1)	(1)	(3)	5	4	user
4	4	6	3	3	4	5	4	(1)	(3)	4	(1)	(2)	4	5	(3)	user
4	5	6	3	3	4	5	4	(1)	(3)	(2)	(1)	(2)	4	5	(3)	user
(1)	(3)	6	3	(1)	4	4	(2)	(1)	(3)	4	(1)	(1)	4	4	(2)	user
4	5	6	3	3	4	5	4	(2)	4	4	(2)	3	4	5	4	nonuser
4	5	6	3	3	4	5	4	4	5	6	3	3	4	5	4	nonuser
Traditional Group																
4	5	6	3	3	4	5	4	(1)	(3)	4	(1)	3	4	5	4	user
4	5	6	3	3	4	5	4	(1)	(3)	(3)	(1)	(2)	(3)	5	(2)	user
4	5	6	3	3	4	5	4	(1)	(1)	(2)	(1)	(2)	4	4	(3)	user
4	5	6	3	3	4	5	4	(1)	(1)	4	(1)	(1)	4	4	(2)	user
(1)	5	6	3	(1)	4	4	(2)	(1)	(1)	4	(2)	(1)	(3)	5	4	user
4	5	6	3	3	4	5	4	4	5	6	3	3	4	5	4	nonuser
4	5	6	3	3	4	5	4	4	5	6	3	3	4	5	4	nonuser
4	5	6	3	3	4	5	4	(1)	4	4	(2)	(2)	4	5	4	nonuser
4	5	6	3	3	4	5	4	4	5	6	3	3	4	5	4	nonuser
4	5	6	3	3	4	5	4	(1)	4	5	3	(1)	4	4	(2)	nonuser
4	5	6	3	3	4	5	4	(1)	4	4	(2)	(1)	4	5	4	nonuser
4	5	6	3	3	4	5	4	(1)	4	4	(2)	2	4	5	4	nonuser
4	5	6	3	3	4	5	4	(1)	(1)	6	3	(1)	4	5	4	nonuser
4	5	6	3	3	4	5	4	NO DATA								
4	5	6	3	3	4	5	4	NO DATA								
4	5	6	3	3	4	5	4	NO DATA								
4	5	6	3	3	4	5	4	MATERNITY LEAVE								

(#) Component Variation Within the Intended Innovation

The data presented in Table 18 revealed dramatic changes for all teachers from the pre to post Innovation Configuration Interview. There was an obvious shift from component variations outside the intended innovation to ones within the scope of the innovation as illustrated by the larger proportion of circled numbers in the post interview data (see Table 18). This is not surprising given that, with 3 exceptions, drug prevention education, was not being taught by any of the teachers prior to this study.

The data presented in Table 20 were tabulated and expressed as percentages of the total component variations expressed by each group. A comparison of the practises within the scope of the innovation before and after staff development are presented in Table 19.

Table 19

A comparison of the practises within the scope of the innovation expressed by the CBAM and Traditional Groups

	PERCENTAGES		
	PRE	POST	CHANGE
PRACTISES WITHIN INNOVATION			
CBAM	12.50	53.75	41.25
TRAD	2.88	39.42	36.54

Note.
Tabulated only on complete pre and post data.

Over half of the component variations expressed by the CBAM Group following the staff development interventions

were classified as being within the scope of the innovation compared to 39.42% expressed by the Traditional Group. The change pre to post was slightly greater (41.25% - 36.54%) for the CBAM Group compared to the Traditional Group. A chi square analysis comparing the final practises of the two groups proved to be not significant.

A chi square analysis on the distribution of component variations before and after staff development indicated that the CBAM Group expressed a statistically significant change [χ^2 (1, N = 80) = 30.72 $p < .001$]. These data support hypothesis 3. Furthermore, a chi square analysis on the pre to post distribution of component variations described by the Traditional Group were also statistically significant at the .001 level [χ^2 (1, N = 104) = 41.62]. Inasmuch as both the CBAM and the Traditional Groups expressed significantly more acceptable component variations following staff development this study does not support Hypothesis 6.

SUMMARY

In review, it was hypothesized that more acceptable operational forms of the innovation would be described following concerns - based staff development. Furthermore it was hypothesized that implementation efforts designed according to the CBAM would be more effective than the Traditional Model. Inasmuch as both the CBAM and the Traditional group expressed significantly more practises within the innovation following staff development

interventions, there was support for hypothesis 3 but not for hypothesis 6.

SUPPLEMENT TO THE HYPOTHESES

The results of this study show that more teachers became users of the innovation following staff development designed according to the CBAM than the Traditional Model. Knowing these results, it is interesting to consider whether the concerns of those teachers who became users differed from the concerns of those who remained nonusers. Using the computer software package *Program SOC* the SoCQ 1 and 2 data was rearranged to reflect the concerns expressed by those identified as users and nonusers by the final LoU Interview. The resulting Nonusers Group included 10 teachers, 2 and 8 teachers respectively, from the CBAM and the Traditional Groups: the resulting Users Group included 13 teachers, 8 and 5 teachers respectively, from the CBAM and Traditional Groups. No SoCQ data were included for the Control Group.

The concerns profile of the Nonusers Group is presented in Figure 14. The percentile scores plotted in Figure 14 and the differences between the percentile score and the highest percentile score at each stage are given in the accompanying table (see Table 20).

Figure 14: Concerns profile of nonusers.

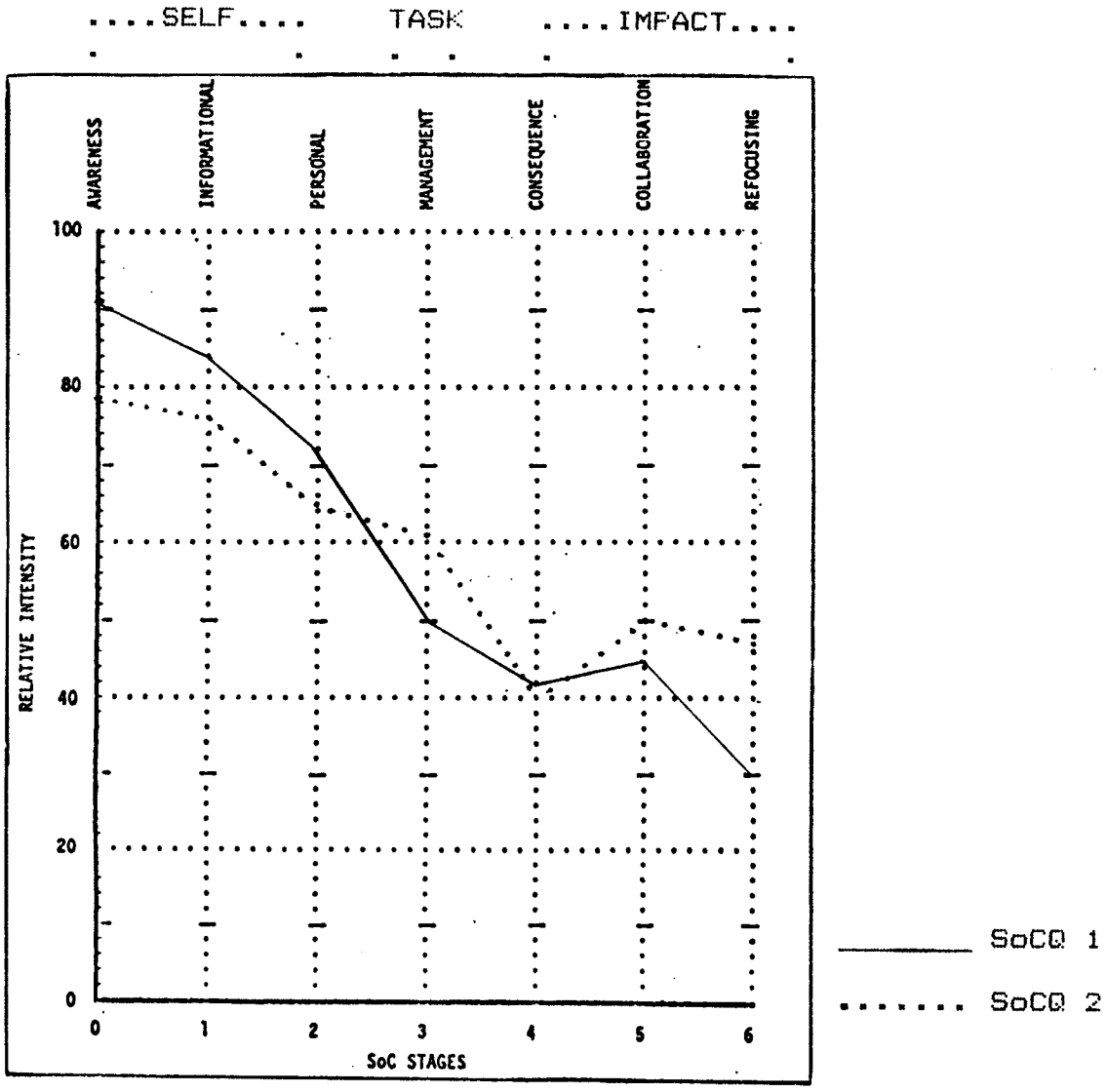


TABLE 20

Percentile scores and differences of nonusers

	PERCENTILE SCORES							DIFFERENCES						
	0	1	2	3	4	5	6	0	1	2	3	4	5	6
SOCQ 1	91	84	72	50	42	45	30	0	0	0	-9	0	-5	-17
SoCQ 2	79	76	65	61	40	50	47	-12	-8	-7	0	-2	0	0

The Nonusers' concerns' profile, illustrated in Figure 14, is very similar to the concerns profile of the Control group shown in Figure 9 in that there is little difference in the profile between SoCQ 1 and SoCQ 2. Given that 10 percentile point represents a meaningful difference, with the exception of awareness concerns (see Table 20), these results suggest that the self concerns of nonusers remained unchanged. The exception in SoC 0 may be a function of the low reliability (.65 and .64) for this subscale rather than evidence of a real change (see Tables 1 and 2). Nonusers also expressed an increase of 17 percentile points on the refocusing concern (SoC 6). This suggests that these teachers were interested in and were looking for some other means of meeting their needs.

The concerns profile of the users group is presented in Figure 15. The percentile scores and differences are given in the accompanying table (see Table 21). There is a marked difference between Figure 14 and 15. The Users Group expressed a definite reduction in all of the self concerns following the staff development intervention whereas the Nonuser Group did not. These results support literature that states that high intensity self concerns must be resolved if teachers are to become users of innovations (Hall and George, 1979).

Figure 15: Concerns profile of users.

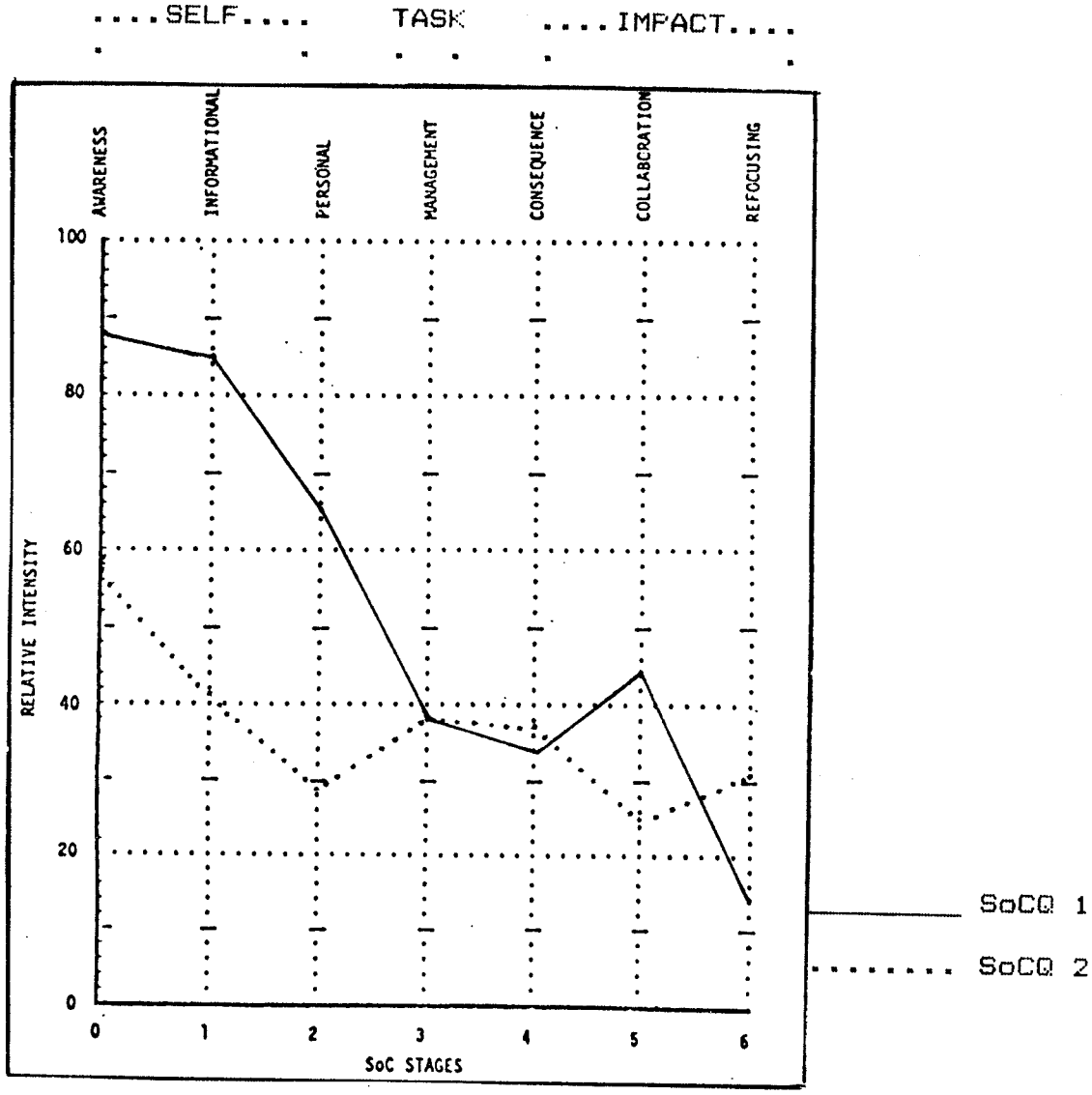


TABLE 21

Percentile scores and differences of users

	PERCENTILE SCORES							DIFFERENCES						
	0	1	2	3	4	5	6	0	1	2	3	4	5	6
SOCQ 1	88	85	65	38	34	44	14	0	0	0	0	-3	0	-17
SoCQ 2	57	41	29	38	37	25	31	-31	-44	-34	0	0	-19	0

An 8 x 2 analysis of variance was calculated on the raw scores for self and task concerns expressed by the Nonusers Group and the Users Group on the SoCQ 1 and SoCQ 2. It was possible to use raw scores rather than change scores because none of the users or nonusers originated from the non - equivalent Control Group. The summary presented in Table 22 indicate that the difference between the users and nonusers (rows) as well as the difference between SoCQ 1 and SoCQ 2 (columns) were statistically significant.

Table 22

ANOVA summary of self and task concerns of nonusers and users.

	SS	DF	MS	F
ROWS	861.64	1	861.64	$F_{1,164} = 22.54^*$
COLUMNS	4293.95	7	613.42	$F_{7,164} = 16.05^*$
INTERACTION	540.55	7	77.22	$F_{7,164} = 2.02$ NS
ERROR	6270.51	164	38.23	

* P<.01

SUMMARY

Inasmuch as the self concerns of users were reduced by more than 30 percentile points whereas the self concerns of nonusers were reduced by 12 percentile points or less it suggests that self concerns must be reduced before teachers

are able or willing to begin using an innovation. These results support a main premise of the CBAM that states that high intensity concerns must be resolved in order for an innovation to be put into use.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to determine the effectiveness of the Concerns-Based Adoption Model (CBAM) in facilitating implementation of educational innovations. To achieve this purpose, a comparison was made of the effects of staff development interventions, designed according to the CBAM and Traditional Model, on attitudes and behaviours of teachers. This chapter will synthesize the results of these investigations and provide some recommendations related to the CBAM. In addition, some suggestions for future research in this area will be made.

SUMMARY OF RESULTS

This study began by discussing the problem of the discrepancy between intended and actual outcomes of curriculum implementation efforts. The inability to change educational practise in desirable directions was explained in terms of four recurring themes prevalent in the change literature. These themes included: 1) conceptualizatin of change, 2) the characteristics of the people involved in the change, 3) the physical and social characteristics of the environment in which the change takes place, and 4) the nature of the task as expressed by the innovation. It was evident from the literature that the conceptualization or

perspective of change serves as an interpretive framework for structuring actions and policies. Depending on the perspective of change held by the change agent, the remaining three variables, people, environment and task may receive differential treatment during implementation efforts. The CBAM was considered to be a more effective model, because it addresses these variables through lenses that combine several perspectives. Thus the following questions were asked:

1. Can staff development that has been designed according to the concepts and tenets of the CBAM influence users of educational innovations in desirable ways? and

2. Can staff development designed according to the key dimensions of the CBAM have a greater influence on users of educational innovations than staff development designed according to the Traditional Model focussed by preadoptive information?

The results of this study showed that:

1. Teachers expressed a significant reduction in informational and personal concerns, two of the three self concerns, following staff development designed according to the CBAM. Post hoc comparisons using the Scheffe Test found this change to be significant at .05.

2. Teachers did not express a significant reduction in any of the self concerns following staff development designed according to the Traditional Model.

3. Teachers did not express a significant increase in task

concerns following staff development designed according to either the CBAM or the Traditional Model.

4. Significantly more teachers became users of the innovation following the CBAM interventions than following the Traditional interventions. This comparison of users and nonusers in the CBAM and Traditional Groups was significant at .05 using chi square analysis.

5. Teachers expressed significantly more practises within the scope of the innovation following both CBAM and Traditional designed staff development. The change, for both CBAM and Traditional Groups, from practises outside to practises within the scope of the innovation was significant at .001, using chi square analysis.

6. Users expressed significant change in concerns compared to the nonusers. This difference was significant at .01 using analysis of variance.

CONCLUSIONS

This study found that concerns - based staff development resulted in reduced self concerns and increased use of the innovation. Thus the Concerns - Based Adoption Model does provide a means of increasing the effectiveness of implementation efforts. In that tools for obtaining and coding the information employed by the CBAM are readily available and can be utilized with a moderate outlay in cost and staff time, it would be reasonable to conclude that implementation efforts in support of an innovation be

designed according to the CBAM.

DISCUSSION

In the common Traditional Model, for curriculum implementation efforts, the change agent presents information about the innovation. The literature is filled with examples to testify that this approach does not yield the desired results. The CBAM offers an approach to implementation that previously has not been available in that it addresses both the people involved and the innovation in context. Implementation efforts using the planned interventions suggested by the CBAM have had promising results.

Generally, the results of this study serve to support and supplement current research regarding the CBAM. The SoC data recorded prior to staff development supports the findings that when introduced to an innovation, individuals have their greatest concern for how they may be affected by the innovation and little concern about the impact of the innovation on students (George and Rutherford, 1979: Loucks and Hall, 1979). Furthermore, this study found that self concerns were significantly reduced following the CBAM Modules but task concerns remained unchanged. These findings are also consistent with previous research that found self concerns changed significantly as a result of staff development wheras task and impact concerns were less easily affected (Hall and Loucks, 1979).

The results of this study regarding the LoU, another key dimension of the CBAM, support and supplement current research. Significantly more teachers were found to be users of the innovation following the CBAM interventions than the number of teacher who became users following the Traditional interventions.

Clearly, using the CBAM to design implementation efforts costs more, both in terms of money and staff time, than using the Traditional Model; but considering the cost of developing innovations it does not make sense to stop short of knowing the innovation is actually in use in the classroom. The cost of developing and field testing an innovation is enormous. It is inexcusable not to continue the process of delopment to include implementation, diffusion and finally, evaluation of the innovation's impact on students.

Once an innovation is ready for use, determining how much additional time and money to expend on staff development depends on the desired goals. Goals relating to the introduction and dissemination of innovations may be considered short term and less expensive compared to goals relating to the innovations' impact on student learning.

Change facilitators wishing to introduce an innovation may find the information provided by the SoCQ sufficient to design effective staff development interventions. The additional financial cost of the paper and postage over the Traditional Model would be marginal in that at least one

mailing to participants is the norm. Similarly, the additional preparation time required would be minimal. Teachers would be required to spent 15 - 20 minutes, several weeks prior to the planned inservice, and the software package *Program SOC* could be used to code and interpret the results.

In situations where the innovation has been in use for some time the change facilitators would need to know what the teachers were doing regarding the innovation to be able to plan strategies that could enhance teachers' use of the innovation. The Lou and IC Interviews would provide such information. The cost and time consumed by interviewing and transcribing the data is comparatively little in the overall developmental process of the innovation.

The cycle of curriculum development is not really complete until the innovation's impact on students is determined. Innovation Congiguration data is critical to ensure that the innovation has not been distorted in practise.

It is not likely that the problem of the discrepancy between intended and actual outcomes in educational practise will be rectified without the expenditure of considerable time, money and effort. The Concerns - Based Adoption Model offers strategies that assist change facilitators in overcoming this serious problem. Clear goals regarding the use of the innovation are essential to select the parts of the model that would be most beneficial and to justify the

additional costs beyond common practises.

PRACTICAL APPLICATIONS

The following recommendations have been formulated based on the results of this study while bearing in mind the limitations discussed previously:

1. Structure staff development according to the CBAM as it demonstates greater effectiveness in producing users of the innovation than the common Traditional Model.

2. Design staff development based on the feelings teachers have about the innovation as it enables the change agent to address concerns which may interfere with the adoption of the innovation.

3. Reduce self concerns that teachers have towards an innovation as teachers with high intensity self concerns are unable or unwilling to begin using an innovation.

4. Identify teachers' concerns about an innovation when teachers are anticipating staff development interventions or are actively involved with the innovation in question.

RESEARCH IMPLICATIONS

The following suggestions for further research are offered based upon the results of the study and the researcher's experience.

1. Further investigations that compare the CBAM with other models of curriculum implementation that focus

primarily on preadoptive information about the innovation would be a productive undertaking. If the results of this study are replicated, a strong argument will be made to use implementation efforts which continue beyond the introduction of innovations.

2. Investigation of the effectiveness of the CBAM using a group of teachers at Level of Use III or above would be useful to determine whether CBAM can increase (maximize) the use of an innovation that has been in practise for some time.

3. Replication of this study on other populations and with larger samples would add to the generalizability of the benifits of the CBAM.

4. Investigation to substantiate the relationship between teachers' level of use and student learning ultimately, would be the most benefical and fruitful to educators.

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APPENDIX A

TUNING IN TO HEALTH OVERVIEW

TUNING IN TO HEALTH OVERVIEW [1]

Tuning In To Health: Alcohol and Other Drug Decisions is a package on drug education for teachers at the primary and elementary school levels. (A junior high component is currently being developed.) The package provides detailed instructional materials which will enable teachers to assist their students in developing attitudes and behaviours that contribute to responsible decisions about drugs. Although *Tuning In To Health* is a complete package, it was designed to be taught as a unit of the *Manitoba Health Education Curriculum*.

Tuning In To Health was field tested by teachers in 26 schools in a variety of communities in Manitoba. The field test supports the package as a practical, comprehensive drug education program for elementary schools. Furthermore, the field test indicates that student responses to the material is positive and enthusiastic.

Since drug use is a sensitive topic and teachers may feel uneasy with drug education, *Tuning In To Health* provides detailed instructions on how to initiate and proceed with each lesson in order that students will progress towards achieving the intended outcomes of the program.

Initially, *Tuning In To Health* focuses on drug products know to young children such as hazardous products and medicines, then progressively develops into a more detailed and in - depth examination of non - medical mood - altering drugs. In the course of this process, *Tuning In To Health* provides opportunities for students to move from concrete experiences to more abstract ideas.

[1] From *Tuning In To Health: Alcohol and Other Drug Decisions* by L. Gamey, V. Paape, K. Hatcher, 1983, Winnipeg: (Preface) Alcoholism Foundation of Manitoba.

APPENDIX B

CBAM MODULES

TITLE: CBAM MODULE 1

TIME: 3 HOURS

OBJECTIVE: TO REDUCE SELF CONCERNS
(i.e. awareness, informational, personal)

TOPIC	INSTRUCTIONS	RESOURCES
Welcome/Ice Breaker	Complete individually & begin to circulate to find others with similar opinions	Handout #1 OPINIONS
Getting to know *Tuning In To Health*	Distribute packages Point out Spec's by referring to preface and intro pages to each unit	Middle Years Pkg. Overhead projector Overhead #1 Spec's
	Divide into 3 groups Assign each group a grade and ask them to complete a overview	Handout #2 Tith Spec's Chart paper Felt pens Masking tape
	Small groups report back to large group	
Tuning In To Health and you	Develop unit plan appropriate to your situation Individuals free to complete task in groups or individually	Unit planning Handout
Personal Commitment	Ask each individual for their decision regarding *Tuning In To Health*	

TITLE: CBAM MODULE 2

TIME: 3 HOURS

OBJECTIVE: TO REDUCE TASK CONCERNS
(especially those related to time)

TOPIC	INSTRUCTIONS	RESOURCES
Introduction	Thanks to all for completing forms Feedback indicates overwhelming concern for time	
Objectives	1) Identify minimum use criteria 2) Discuss ways to resolve some of the dilemmas described in the open-ended statements 3) share successful and unsuccessful practises	Flipchart Pens Chartpaper
Minimum Use Criteria	Define Innovation Configuration Divide into groups Regroup and discuss	Handout 1 Innovation Configuration Activity
Identified Dilemmas	Discuss in small groups Share with whole group	Handout 2 Case Studies
Personal Sharing	Opportunity for individuals to share personal experiences	

APPENDIX C

INSERVICE SUGGESTIONS

"SAMPLE FRAMEWORK" [1].

TUNING IN TO HEALTH

3-HOUR MODULE

TENTATIVE AGENDA

	TIME
1. INTRODUCTION	
A) Elementary Health Education Curriculum B) Tuning In To Health	15 min.
2. FACTS AND FALLACIES	
A) Basic pharmacology B) Quiz to participants and review	30 min.
3. UNIT PLANNING MINI-WORKSHOP	
A) Enables participants to become familiar with their TITH grade unit, with an emphasis on unit organization.	60 min.
BREAK	10 min.
4. METHODOLOGY	
A) examines classroom techniques for facilitation. B) participants complete "PROPER/IMPROPER USE" exercise from TITH. C) use Finn/O'Gorman readimg as background to information.	45 min.
5. CASE STUDIES A) participants examine issues related to TITH	25 min.
6. EVALUATION/QUESTIONS A) address any other concerns or questions not covered in the workshop.	10 min.
TOTAL: 3 hrs. 15 min.	

[1]-Suggested inservice agenda developed by the AFM for *Tuning In To Health* Inservice Leaders.

APPENDIX D

TRADITIONAL MODULES

TITLE: TRADITIONAL MODULE 1

TIME: 3 HOURS

OBJECTIVE: TO INFORM TEACHERS ABOUT *TUNING IN TO HEALTH*

TOPIC	INSTRUCTIONS	RESOURCES
Introduction	Provide brief background, developed in cooperatin with Dept. of Educ., fit with new health curriculum Health Curr. key concepts *Tuning In To Health* goals	Overhead projector Overhead 1 Overhead 2
Getting to know TITH	Note: Pharmacology expert not necessary Distribute handout 1 Complete individually Regroup & discuss	 Handout 1 Facts/Fallacy
Unit Planning	Develop unit plan appropriate to your situation Individuals free to complete task in groups or individually	Handout 2 Task Card Handout 3 Unit Planning
Methodology	Classroom techniques Divide into groups complete activity by reaching consensus Regroup & discuss - need to respect differences of opinion - ways to draw generalizations from specific situations	Handout 4 Proper Use

TITLE: TRADITIONAL MODULE 2

TIME: 3 HOURS

OBJECTIVE: TO PRESENT INFORMATION ABOUT COMMON MOOD-ALTERING DRUGS
TO PROMOTE CRITICAL ANALYSIS OF DRUG INFORMATION

TOPIC	INSTRUCTIONS	RESOURCES
Intro/Objectives	Thanks to all for completing forms Review objectives of session 1) Distinguish between facts & fallacies related to alcohol, marijuana & nicotine 2) Analyse various film presentations of drug information	Overhead projector Overhead 1
Fact/Fallacy Quiz	Distribute Handout 1 Complete individually	Handout 1 Fact/Fallacy
Routes & Risks	Explain rules Divide into 4 group Regroup & Discuss -what did they learn about specific drugs -what did they learn about the relt'ship between drug use & well-being -how could the game be used in the classroom	Game Routes & Risks (4) Dice (4) Flipchart Chartpaper Pen
Scare tactics/ Scarey information	Discuss differences Distribute Handout 2 View film 1 Discuss film breifly View film 2 Discussion	Handout 2 Scare/Scarey Film *EPIDEMIC* Film projector Film *Feminine Mistake*
Wind-up/Evaluation	Review responses to Fact/Fallacy Ask participants to evaluate session & suggest additional inservice topics	

APPENDIX E

RECRUITMENT LETTER

ALCOHOLISM FOUNDATION OF MANITOBA

Dear Principal,

We would like to inform you about a new drug prevention program and its unique position within the context of the Manitoba Health Education Curriculum. Tuning In To Health: Alcohol and Other Drug Decisions was developed by the Alcoholism Foundation of Manitoba (A.F.M.) and is included as an optional unit of the new health education curriculum. It consists of two packages: 1) Early Years for grades 2 and 3, and 2) Middle Years for grades 4, 5 and 6. Both packages contain detailed lesson plans to assist students in developing attitudes and behaviours that contribute to the safe use of drugs.

Whereas it is recognized by both the Department of Education and the A.F.M. that teachers will require specific inservice support for Tuning In To Health, the exact design and inservice content has not been determined. For this reason the A.F.M. will be conducting a small research study to determine an appropriate means of inservicing teachers which will facilitate the implementation of Tuning In To Health in the classroom.

Due to time constraints, the schools participating in this research study will not be expected to have had the half-day awareness session provided by the Department of Education on the entire scope of the health education curriculum nor to have taught the Emotional and Social Well-Being Unit of the health curriculum as recommended by the Department of Education. The advantage to the schools participating in the study would be the guarantee of inservicing early enough to permit the use of Tuning In To Health during the current school year. The advantage to the A.F.M. would be the opportunity to test out some inservice materials on a small scale prior to full implementation.

To qualify for the research project, schools must have teachers willing to:

1) Implement Tuning In To Health during the current school year,
2) Participate in no less than three and no more than six hours of inservice training sometime between mid-January and the end of March,
3) Provide both written and verbal feedback, and
4) Implement Tuning In To Health in at least one classroom at grades 4, 5 and 6.

1031 Portage Avenue, Winnipeg, Manitoba R3G 0R8 (204) 786-3831

We would like to introduce you to Lark Gamey who is on contract to the A.F.M. to conduct the research project. If your school is interested and able to comply with the above requirements, please contact Lark prior to December 2, 1983 by completing the attached form and returning it to Lark at the following address:

Lark Gamey
Alcoholism Foundation of Manitoba
1031 Portage Avenue
Winnipeg, Manitoba R3G 0R8
Telephone: 786-3831 or 477-4902

Your assistance in this project will help to ensure that effective inservicing be available for full implementation of Tuning In To Health.

Sincerely,

Denise Koss
Mark Stropie
Tuning In To Health Provincial Consultants

:lz

Dear Lark,

The Grades 4, 5 and 6 teachers of _____ would like
(name of school)

to participate in the Tuning In To Health research study being conducted by the Alcoholism Foundation of Manitoba. We, the undersigned, are willing to meet the following criteria:

1) Implement Tuning In To Health during the current school year,

2) Participate in at least three and no more than six hours of inservice training sometime between mid-January and the end of March, and

3) Provide both written and verbal feedback.

Grade 4 _____
(name(s) of teacher(s))

Grade 5 _____

Grade 6 _____

Please return by December 2, 1983 to:

Lark Gamey
Alcoholism Foundation of Manitoba
1031 Portage Avenue
Winnipeg, Manitoba
R3G 0R8

APPENDIX F

FOLLOW - UP MEMO

ALCOHOLISM FOUNDATION OF MANITOBA

TO: The PRINCIPAL

FROM: Lark Gamey

DATE: December 16, 1983

RE: Tuning In To Health Research Project

Opportunity does knock twice! You can still become involved in the Tuning In To Health Research Project. Although an adequate number of schools have indicated their willingness to participate, a larger number would be more desirable. If you are able to reconsider this request I would like to hear from you by mid January. This would enable inservicing to take place in February or early March, as planned.

A copy of the letter outlining the research requirements is attached in the event that the original copy has been misplaced.

Note that the advantage to the schools in the research project is the guarantee of inservicing in time to permit the implementation of Tuning In To Health during this school year. Given the recent interest shown by community groups concerning youth and problems related to drug use this may be a timely project for your area.

Copies of Tuning In To Health are available for preview on a request basis.

If you wish to be included in the Tuning In To Health Research Project or if you have any questions please contact me at 786-3831 or 477-4902 any time between now and the middle of January.

1031 Portage Avenue, Winnipeg, Manitoba R3G 0R8 (204) 786-3831

APPENDIX G

ETHICAL APPROVAL

THE UNIVERSITY OF MANITOBA FACULTY OF EDUCATION Winnipeg, Manitoba Canada R3T 2N2

March 27, 1984

Ms. Donna Lark Gamey
358 Waterloo Street
Winnipeg, Manitoba
R3N 0S7

Dear Ms. Gamey:

Attached please find the consent form signed on behalf of the Ethics Review Committee.

We wish you much success in your research.

[redacted]

Chairperson
Ethics Review Committee

Attachment.

OST/mlg

cc. Dr. B. Nelson

We, the undersigned, agree to abide by the ethical guidelines for human research adopted by the Board of Governors of the University of Manitoba and to carry out this project as described on this Ethics Review Form.

[redacted]

Principal Investigator Faculty Supervisor

For Ethics Committee Use:

[redacted]

Date: Mar. 26/84

APPENDIX H

STAGES OF CONCERN ABOUT THE INNOVATION QUESTIONNAIRE

CONCERNS QUESTIONNAIRE

NAME_____

LAST 4 DIGITS OF YOUR SOCIAL INSURANCE NUMBER_____

The purpose of this questionnaire is to determine what people who are using or thinking about using innovations are concerned about at various times during the innovation adoption process. The items were developed from typical responses of school and college teachers who range from no knowledge at all about various programs to many years of experience in using them. Therefore, a good part of the items on this questionnaire may appear to be of little relevance or irrelevant to you at this time. For the completely irrelevant items, please circle "0" on the scale. Other items will represent those concerns you do have, in varying degrees of intensity, and should be marked higher on the scale.

For example:

This statement is very true of me at this time 0 1 2 3 4 5 6 (7)

This statement is somewhat true of me now 0 1 2 3 (4) 5 6 7

This statement is not at all true of me at this time 0 (1) 2 3 4 5 6 7

This statement seems irrelevant to me (0) 1 2 3 4 5 6 7

Please respond to the items in terms of your present concerns, or how you feel about your involvement with *Tuning In To Health*. We do not hold to any one definition of this innovation, so please think of it in terms of your own perception of what it involves. Since this questionnaire is used for a variety of innovations, the name *Tuning In To Health* nevers appears. However, phrases such as "the innovation", "this approach" and "the new system" all refer to *Tuning In To Health*. Remember to respond to each item in terms of your present concerns about your involement or potential involvement with *Tuning In To Health*.

Thank you for taking time to complete this task.

A.2 SoC QUESTIONNAIRE ITEMS

0	1	2	3	4	5	6		7
Irrelevant	Not true of me now		Somewhat true of me now			Very true of me now		

1.	I am concerned about students' attitudes toward this innovation.	0	1	2	3	4	5	6	7
2.	I now know of some other approaches that might work better.	0	1	2	3	4	5	6	7
3.	I don't even know what the innovation is.	0	1	2	3	4	5	6	7
4.	I am concerned about not having enough time to organize myself each day.	0	1	2	3	4	5	6	7
5.	I would like to help other faculty in their use of the innovation.	0	1	2	3	4	5	6	7
6.	I have a very limited knowledge about the innovation.	0	1	2	3	4	5	6	7
7.	I would like to know the effect of reorganization on my professional status.	0	1	2	3	4	5	6	7
8.	I am concerned about conflict between my interests and my responsibilities.	0	1	2	3	4	5	6	7
9.	I am concerned about revising my use of the innovation.	0	1	2	3	4	5	6	7
10.	I would like to develop working relationships with both our faculty and outside faculty using this innovation.	0	1	2	3	4	5	6	7
11.	I am concerned about how the innovation affects students.	0	1	2	3	4	5	6	7
12.	I am not concerned about this innovation.	0	1	2	3	4	5	6	7
13.	I would like to know who will make the decisions in the new system.	0	1	2	3	4	5	6	7
14.	I would like to discuss the possibility of using the innovation.	0	1	2	3	4	5	6	7
15.	I would like to know what resources are available if we decide to adopt this innovation.	0	1	2	3	4	5	6	7
16.	I am concerned about my inability to manage all the innovation requires.	0	1	2	3	4	5	6	7
17.	I would like to know how my teaching or administration is supposed to change.	0	1	2	3	4	5	6	7
18.	I would like to familiarize other departments or persons with the progress of this new approach.	0	1	2	3	4	5	6	7

0	1	2	3	4	5	6	7
Irrelevant	Not true of me now		Somewhat true of me now			Very true of me now	

19.	I am concerned about evaluating my impact on students.	0	1	2	3	4	5	6	7
20.	I would like to revise the innovation's instructional approach.	0	1	2	3	4	5	6	7
21.	I am completely occupied with other things.	0	1	2	3	4	5	6	7
22.	I would like to modify our use of the innovation based on the experiences of our students.	0	1	2	3	4	5	6	7
23.	Although I don't know about this innovation, I am concerned about things in the area.	0	1	2	3	4	5	6	7
24.	I would like to excite my students about their part in this approach.	0	1	2	3	4	5	6	7
25.	I am concerned about time spent working with nonacademic problems related to this innovation.	0	1	2	3	4	5	6	7
26.	I would like to know what the use of the innovation will require in the immediate future.	0	1	2	3	4	5	6	7
27.	I would like to coordinate my effort with others to maximize the innovation's effects.	0	1	2	3	4	5	6	7
28.	I would like to have more information on time and energy commitments required by this innovation.	0	1	2	3	4	5	6	7
29.	I would like to know what other faculty are doing in this area.	0	1	2	3	4	5	6	7
30.	At this time, I am not interested in learning about this innovation.	0	1	2	3	4	5	6	7
31.	I would like to determine how to supplement, enhance, or replace the innovation.	0	1	2	3	4	5	6	7
32.	I would like to use feedback from students to change the program.	0	1	2	3	4	5	6	7
33.	I would like to know how my role will change when I am using the innovation.	0	1	2	3	4	5	6	7
34.	Coordination of tasks and people is taking too much of my time.	0	1	2	3	4	5	6	7
35.	I would like to know how this innovation is better than what we have now.	0	1	2	3	4	5	6	7

APPENDIX I

OPEN-ENDED STATEMENT OF CONCERN ABOUT THE INNOVATION

OPEN-ENDED STATEMENT OF CONCERN

NAME_____

LAST 4 DIGITS OF YOUR SOCIAL INSURANCE NUMBER_____

The purpose of the open-ended statement on the next page is to determine what people who are using or thinking about using innovations are concerned about at various times during the innovation adoption process.

Please respond in terms of <u>your present concerns</u>, or how you feel about your involvement with the innovation *Tuning In To Health*. We do not hold to any one definition of this innovation, so please think of it in terms of <u>your own perceptions</u> of what *Tuning In To Health* involves. Remember to respond in terms of <u>your present concerns</u> about your involvement or potential involvement with *Tuning In To Health*.

Thank you for taking time to complete this task.

RESPONSE SHEET

WHEN YOU THINK ABOUT *TUNING IN TO HEALTH*, WHAT ARE YOU CONCERNED ABOUT? (Do not say what you think others are concerned about, but only what concerns you now.) Please write in complete sentences, and please be frank.

(1)

Do not write in this space

(2)

(3)

Please place a check by the statement that concerns you most.

APPENDIX J

LEVELS OF USE INTERVIEW

Question	Purpose
Are you using the innovation?	To distinguish between users and nonusers; to break LoU 0-II from LoU III-VI.
IF YES	
What do you see as the strengths and weaknesses of the innovation in your situation? Have you made any attempt to do anything about the weaknesses?	To probe Assessing and Knowledge categories.
Are you currently looking for any information about the innovation? What kind? For what purpose?	To probe Acquiring Information category.
Do you ever talk with others about the innovation? What do you tell them?	To probe Sharing category.
What do you see as being the effects of the innovation? In what way have you determined this? Are you doing any evaluating, either formally or informally, of your use of the innovation? Have you received any feedback from students? What you have done with the information you get?	To probe Assessing category.
Have you made any changes recently in how you use the innovation? What? Why? How recently? Are you considering making any changes?	To distinguish between LoU III (user-oriented changes), LoU IV B (student-oriented changes) and LoU IV A (no or routine changes); to probe Status Reporting and Performing categories.
As you look ahead to later this year, what plans do you have in relation to your use of the innovation?	To probe Planning and Status Reporting categories.

Question	Purpose
Are you working with others (outside of anyone you may have worked with from the beginning) in your use of the innovation? Have you made any changes in your use of the innovation based on this coordination?	To separate LoU V from III, IV A and IV B. If a positive response is given, LoU V probes (below) are used.
Are you considering or planning to make major modifications or to replace the innovation at this time?	To separate LoU VI from III, IV A, IV B and V.
LoU V Probes	
How do you work together? How frequently?	
What do you see as the strengths and the weaknesses of this collaboration?	
Are you looking for any particular kind of information in relation to this collaboration?	
When you talk to others about your collaboration, what do you share with them?	
Have you done any formal or informal evaluation of how your collaboration is working?	
What plans do you have for this collaborative effort in the future?	

Question	Purpose
Are you working with others (outside of anyone you may have worked with from the beginning) in your use of the innovation? Have you made any changes in your use of the innovation based on this coordination?	To separate LoU V from III, IV A and IV B. If a positive response is given, LoU V probes (below) are used.
Are you considering or planning to make major modifications or to replace the innovation at this time?	To separate LoU VI from III, IV A, IV B and V.
LoU V Probes	
How do you work together? How frequently?	
What do you see as the strengths and the weaknesses of this collaboration?	
Are you looking for any particular kind of information in relation to this collaboration?	
When you talk to others about your collaboration, what do you share with them?	
Have you done any formal or informal evaluation of how your collaboration is working?	
What plans do you have for this collaborative effort in the future?	

Question	Purpose
Past Users	
Why did you stop using the innovation?	
Can you describe for me how you organized your use of the innovation, what problems you found, what its effects appeared to be on students?	
When you assess the innovation at this point in time, what do you see as the strengths and weaknesses for you?	

APPENDIX K

INNOVATION CONFIGURATION CHECKLIST

INNOVATION CONFIGURATION CHECKLIST: *TUNING IN TO HEALTH*

COMPONENT #1 SCHEDULE

IDEAL PRACTISES _____ (1) teaches drug education as a unit of Health curriculum

---

REALISTIC PRACTISES _____ (2) teaches drug education as a unit of larger curriculum other than Health
_____ (3) teaches drug education as a separate curriculum

OUTSIDE INTENDED PROGRAM _____ (4) does not teach drug education

COMPONENT #2 TIME

IDEAL PRACTISES _____ (1) 60-79 minutes per cycle for a minimum of 4 cycles

---

REALISTIC PRACTISES _____ (2) 45-59 minutes per cycle for a minimum of 4 cycles
_____ (3) 30-44 minutes per cycle for a minimum of 4 cycles

OUTSIDE INTENDED PROGRAM _____ (4) less than 30 minutes per cycle
_____ (5) no drug education taught

COMPONENT #3 SCOPE OF LESSONS USED

IDEAL PRACTISES _____ (1) uses all core lessons in the unit plus all the asterisk, extention and optional lessons provided
_____ (2) uses all core lessons plus some of the asterisk, and extension lessons

---

REALISTIC PRACTISES _____ (3) uses core lessons only

OUTSIDE INTENDED PROGRAM _____ (4) uses selected core lessons
_____ (5) uses lessons from other program
_____ (6) no lessons used

COMPONENT #4 LESSON SEQUENCE

IDEAL PRACTISES _____ (1) uses lessons in sequence as presented

---

REALISTIC PRACTISES _____ (2) uses lessons in a different sequence than presented

---

OUTSIDE INTENDED PROGRAM _____ (3) does not use any of the lesson plans

COMPONENT #5 RESOURCES

IDEAL PRACTISES _____ (1) uses a combination of resouces provided in the package, those recommended and/or additional resources not mentioned

---

REALISTIC PRACTISES _____ (2) uses resources provided in package only

---

OUTSIDE INTENDED PROGRAM _____ (3) no resources used

COMPONENT #6 REINFORCEMENT/EVALUATION SUGGESTIONS

IDEAL PRACTICES _____ (1) uses suggestions both to reinforce and to evaluate student outcomes

---

REALISTIC PRACTISES _____ (2) uses suggestions only to evaluate student outcomes
_____ (3) uses suggestions only to reinforce student outcomes

---

OUTSIDE INTENDED PROGRAM _____ (4) does not use any of the suggestions

COMPONENT #7 EVALUATION RECORDS

IDEAL PRACTISES _____ (1) uses a combination of checklists and anecdotal records

---

REALISTIC PRACTISES _____ (2) uses anecdotal records only
_____ (3) uses checklists only
_____ (4) uses other means

OUTSIDE INTENDED PROGRAM _____ (5) no records kept

COMPONENT #8 EVALUATION FREQUENCY

IDEAL PRACTISES _____ (1) evaluates student outcomes after every lesson
_____ (2) evaluates student outcomes after selected lessons in the unit

---

REALISTIC PRACTISES _____ (3) evaluates student outcomes at end of unit only

---

OUTSIDE INTENDED PROGRAM _____ (4) never evaluates student outcomes

APPENDIX L

LEVELS OF USE OF THE INNOVATION: TYPICAL BEHAVIOURS

LEVELS OF USE OF THE INNOVATION:
TYPICAL BEHAVIORS

LEVEL OF USE		BEHAVIORAL INDICES OF LEVEL
VI	RENEWAL	THE USER IS SEEKING MORE EFFECTIVE ALTERNATIVES TO THE ESTABLISHED USE OF THE INNOVATION.
V	INTEGRATION	THE USER IS MAKING DELIBERATE EFFORTS TO COORDINATE WITH OTHERS IN USING THE INNOVATION.
IV-B	REFINEMENT	THE USER IS MAKING CHANGES TO INCREASE OUTCOMES.
IV-A	ROUTINE	THE USER IS MAKING FEW OR NO CHANGES AND HAS AN ESTABLISHED PATTERN OF USE.
III	MECHANICAL USE	THE USER IS USING THE INNOVATION IN A POORLY COORDINATED MANNER AND IS MAKING USER-ORIENTED CHANGES.
II	PREPARATION	THE USER IS PREPARING TO USE THE INNOVATION.
I	ORIENTATION	THE USER IS SEEKING OUT INFORMATION ABOUT THE INNOVATION.
0	NON-USE	NO ACTION IS BEING TAKEN WITH RESPECT TO THE INNOVATION.