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The Anatomy of a Curricular Innovation
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THE ANATOMY OF A CURRICULAR INNOVATION THAT FAILED

By

Roxanne Sue Hultquist

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ABSTRACT

THE ANATOMY OF A CURRICULAR INNOVATION THAT FAILED

By

Roxanne Sue Hultquist

This study researches the implementation of a thinking skills program as a curricular innovation. The failure of the expected results in the researcher's own classroom, as well as in those of some of her colleagues, led to the abandonment of the innovation. In this study, the researcher sought to discover what were the causes for abandonment of the innovation.

Interpretive fieldwork research techniques were used including empirical assertions, quotes from fieldnotes, quotes from interviews, theoretical discussions and reports of the natural history of inquiry in the study.

It was found that causes for abandonment of this curricular innovation in some classrooms were the following:

1. It didn't meet teacher expectations.
2. The teachers believed that the students didn't "like" the program.
3. There was no major advocate available for the program.
4. The teachers felt no sense of ownership in the program.
5. The innovation was being used in a manner which differed from the intent of the developer.
6. There were too few incentives in the school culture to sustain its continued use.

The identification of these problems, and suggestions for curing them, can help the school district to plan in-service for more successful implementation of this curricular innovation and those which are adopted in the future.

TABLE OF CONTENTS

TABLE OF CONTENTS
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TABLE OF CONTENTS
(continued)

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LIST OF APPENDICES

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CHAPTER I
INTRODUCTION

Public schools have been under scrutiny to improve their programs in the United States for several years. Criticism stemming from poor standardized test scores and the rush of some students toward private schools have motivated most districts to explore ways of improving instruction.

However, curriculum innovation is a difficult task in many American schools. The de-centralized nature of many school districts; the independence of the individual classroom teacher; the political ramifications of an elected local school board and strong teachers' unions; the often short tenure of the superintendent; and the high cost of the implementation of new programs and waning tax bases are contingencies that impact on the degree to which these new programs will be successfully implemented. New instructional programs are enthusiastically adopted each year by school districts. Although some of these adoptions are informal, often the adoption process includes formal adoption procedures which involve needs assessments, grant writing and endless reports to boards of education or some other bureaucratic agency.

The Problem

Changes will have to be made if the public school can survive in America. The problem is that, given present school cultures, there is no guarantee that even promising innovations will be incorporated into classrooms. What needs to be changed in order for innovation to succeed? This question needs to be answered before any kind of meaningful school improvement can be initiated.

Some would argue that accountability is the issue, since test scores seem to be the primary demand of the public. However the area of accountability is often weak in educational institutions. Since the classroom teacher and the text drive the curriculum (Boyd, 1979; Shaver, Davis and Helburn, 1979) change occurs only when the

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classroom teacher is committed and empowered to implement the innovation. With declining enrollments comes declining tax bases and the first place to cut back is often in the area of school administrators. Even more apt to be cut are central administration curriculum consultants or other persons charged with staff development. Since schools are becoming more consolidated, the building administrator becomes more of a behavior manager and less of a principal teacher or curriculum leader. Teachers are often evaluated on their classroom control but are not held as accountable for updated curriculum development skills. This is not necessarily because the teacher refuses to accept change but rather because he/she is not trained for the change or perhaps not even apprised of it. Someone should introduce, explain, and evaluate the use of the innovation if true change is expected to be accomplished.

Studies of innovation show that using specific adoption and in-service guidelines can greatly enhance the success of curriculum innovations (Fullan & Pomfret, 1977; Frey, 1979; Loucks & Pratt, 1979; Fullan, 1990; Joyce & Showers,1988). However, limitations of money, time, and personal commitment often stand in the way of adopting the necessary procedures. Indeed, in some cases, what appears to be abandonment of an innovation is really a lack of adoption in the first place.

This study will narrate the history of a failed curricular innovation (CoRT I) as seen by a classroom teacher and report how it compares to and contrasts with events leading to the abandonment of other innovations (Marker, 1980).

Purpose and Significance of the Study

The purpose of this study is to identify reasons for lack of adoption or of abandonment after adoption of curricular innovation. Despite the fact that there is much discussion in the literature as to why new programs should be instituted, few studies have been undertaken to determine why programs are abandoned. Perhaps the reason for this phenomenon is that substantial evidence is usually needed for introducing a program (especially those funded by the

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Federal Government). In addition it is often difficult (given the lack of "top down" control of the United States educational system) to determine when or if a program has been abandoned.

This lack of abandonment literature was cited by Gerald Marker, Indiana University, in his 1980 study, "Why Schools Abandon 'New Social Studies' Materials". Marker found that information concerning innovation adoption was extensive, however, abandonment literature was sparse. Building on studies that identified characteristics which enhance innovation adoption (Rogers & Shoemaker,1971; Hahn, 1977; and Kissock & Falk, 1978), he identified the following factors (Marker, 1980) as being key in curriculum abandonment:

1. Characteristics of the Innovation
2. Characteristics of the Change Strategies
3. Characteristics of the School Culture

With the help of this suggested structure, the researcher attempted to determine if the failure of a curricular innovation in her own classroom was caused by the structural weakness of the innovation, by the manner in which it was introduced to staff members, or the culture of the school itself.

Limitations of the Study

The findings of this study are interpretive and qualitative and are not intended for generalizing to other populations. Limitations are therefore mostly an issue of design. First, the study was a small scale undertaking to discover reasons for the unexpected failure of a curriculum innovation in a specific classroom. For that reason there was no attempt to gather data on the use of the innovation in other districts other than in an informal way. Next, the data gathered from the researcher's district were not statistically significant. Because the population of the teachers involved in the use of the innovation was so small (41); there was no reason to use a sample. The entire population was polled. However, the response rate from the questionnaire was poor and so can be viewed only as a study of selected teachers' perceptions of an

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Definition of Terms

AGTP - Academically Gifted and Talented Program

Attributes - The inherent qualities of the innovation being considered for adoption. In Hahn's study, the attributes were identified from research of innovations in other disciplines and adapted to fit in with how innovations are introduced in the area of social studies education (Hahn, 1977).

Case study- A type of research where the focus of attention is directed toward a single case or a limited number of cases in which the process is personalized. It is concerned with everything that is significant in the history or development of the case. It emphasizes the longitudinal or genetic approach, showing development over a period of time (Best 1959).

Compatibility - The degree to which a curriculum innovation fits in with existing curriculum, the values of the adopters, or what is perceived as the needs required of a new program (Hahn, 1977).

Complexity - The degree to which a curriculum needs additional teacher training or is too difficult for students (Hahn, 1977). Complexity demands that users learn to perform in new ways (Fullan & Pomfret , 1977).

Collaborative relationships- Refers to new arrangements in the school culture which allow for teachers in groups to address school improvement in a mutual, cooperative way.

Collegial relationships- Refers to new arrangements in the school culture which allow for teacher development and improvement to be carried on in a way that by-passes the old evaluative, top-down methods.

Explicitness - The degree to which a curriculum innovation is unambiguous in its structure and procedures. If the explicitness is low it leads to user confusion and lack of clarity of purpose, this leads to frustration (Fullan & Pomfret, 1977).

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Fidelity - The degree to which implementation of an innovation relates, in actual use,to its intended or planned use (Fullan & Pomfret, 1977).

Hermeneutical- ..."An attempt to determine the original meaning of texts as intended by their authors" (Cherryholmes, 1991).

Implementation- A rather complicated process of infusing a curriculum innovation into a school system. It entails changing materials, changing cultural structures, changing roles and behavior, changing or adding to knowledge and understanding, and changing values (Fullan & Pomfret, 1977).

In-service - Training for teachers in an innovation. It should include the following: continuous interaction between consultant and practitioner, provision for unlearning as well as for learning and relearning, demonstration models, interaction between practitioners for feedback and solution of practical problems, and psychological reinforcement (Fullan & Pomfret, 1977).

Interpretive research - Investigation on meaning, highlighting the premise that human activity can be understood only when the meaning of the action to the actor is taken into account (Goetz & LeCompte, 1984).

Macro Sociopolitical Factors - The role of political agencies outside the adopting organization. These range from local school system boards, local government, and community agencies to national and federal organizations (Fullan & Pomfret, 1977).

Mutual adaptations - The complexities of the change process *vis-a - vis* how innovations become changed during the process of implementation (Fullan & Pomfret, 1977).

Naturalistic research - A concern for studying human life as it proceeds, unaffected by the scientist interested in studying it (Goetz & Le Compte, 1984).

Observability- The degree to which a curriculum innovation can show visible success (Hahn).

Organizational innovations- Changes having to do with organizational considerations such as materials and space, scheduling, and monitoring (Fullan & Pomfret, 1977).

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Peer Coaching- A collaborative activity whereby classroom teachers watch one another teach and give constructive help in improving. An alternative to traditional principal criticism and evaluation.

Phenomenology- ..."Permits the phenomenon under investigation to reveal itself as it is."(Cherryholmes, 1991).

Phenomenological research- Reality and value can be known only through human experience (Giorgi, 1971). "It focuses attention on interpretations that are offered by those being studied, the subjects or the research, and away from the interpretations offered by researchers, the subjects conducting the research." (Cherryholmes, 1991).

Relative Advantage - The term given to a proposed curriculum innovation as it relates to cost, reward, time needed, student interest, and learning effectiveness (Hahn, 1977).

Staff development- Not only re-education of staff by bringing in consultants from publishing companies or university professors to explain a new concept, but also a resocialization of the role of the teacher *vis-a- vis* the student (Patterson & Czajkowski, 1979). Not only a technical but also a political activity (Fullan, 1990).

Triability- The degree to which a curriculum can be tried and evaluated before undertaking a full-scale adoption (Hahn,1977).

Overview of the Study

This study was designed to depict the natural history of a particular curricular innovation failure experienced by the researcher. In narrating this natural history, the researcher found the standard dissertation format awkward in dealing with the more ethnographic style of the study. For that reason the structure of the study has been somewhat altered.

The first three chapters are fairly standard in their format. In Chapter I, the researcher identified the problem to be addressed,

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discussed the purpose of the research in regard to the school district which participated in the study, stated the significance of reporting the data, identified the limitations of the study, and defined the terms used in the research. The researcher examined the problem of why a highly regarded thinking skills program failed in her classroom. The answer to this problem can help the school district under study to analyze the need for implementation procedures for more successful use of the program. The Definition of Terms was designed to make clear information found in the Review of the Literature and the study itself. Chapter two deals with the review of the literature, and chapter three provides a description of the research methods used in the study.

In Chapter four, analysis of the data, however there is a departure from the more standard dissertation format in order to accommodate the narrative section necessary for the natural history of the study. The background section describes the general culture of the program into which the innovation was adopted. The narrative describes the researcher's use of the innovation, her high expectations and subsequent disenchantment. This narrative also includes the steps through which the researcher traveled in an effort to understand why the innovation failed in her classroom. These steps included expressing her own feelings and evaluation of happenings, and polling her students and her teacher/colleagues. It also included attending conferences and reading additional materials as well as interviewing school officials as to the intended use of the innovation. In the discussion segment, the researcher was able to compare the data she had gathered with characteristics of failed curricula identified by Marker (1980).

Chapter five summarizes the findings of the study and identifies their implications for curriculum development and research.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Following the recent attacks on the public school system in the United States, research on the subject of curriculum innovation has begun to increase. Many districts have rushed to adopt programs to improve their schools based on this research. However the adoption of an innovation in no way insures its use. A quote by Frey (Frey, 1979, page 208) sums up the situation :

In the basements and old file cabinets of many schools are the remnants of programs that once promised to teach Johnny to read, write, and process; the epitaph might read like this:

> Here lie the remains of many innovations,
> Training didn't cover all the situations,
> And when the materials lost their gloss,
> We counted another program loss.

Why do so many programs fail? The literature is replete with innovations that seem promising. In order to successfully introduce new programs, those responsible for their adoption may wish to analyze and use the steps suggested in the literature to insure that success (in-service training, continuous interaction between teachers and consultants, time for unlearning and relearning, demonstration models, resource support and feedback mechanisms - Fullan and Pomfret, 1977). It is not realistic to simply mandate the use of a program and expect the appropriate changes to occur in the classroom. Although this top-down approach may appear effective, to some educators, American school districts and teachers' unions take pride in their local control. In addition, the independence of the individual classroom teacher over curricular decisions makes new curriculum implementation difficult.

In order for local districts and teachers to accept a curriculum innovation, it is first necessary to convince both that change is needed. To do this, basic needs must be defined and the innovation put into the context of existing curricula. Also it is necessary that teachers adopt the innovation because they accept its premises and feel comfortable using it. They must also see that the innovation is valuable to their students (i.e. corrects or solves a problem for students).

In this study, the intent of the review of literature is to:

1. Examine four research studies on curriculum innovation adoption and implementation.
2. Examine literature on planning for more effective implementation of curriculum innovation.
3. Review Gerald Marker's paradigm regarding curriculum abandonment
4. Elaborate on the research design.

1. Research Studies on Curriculum Innovation Adoption and Implementation

Before a new curriculum can be implemented it must be adopted. The literature is fairly rich in studies concerning procedures for adoption and dissemination of materials needed in curriculum innovation.

In 1971 Rogers and Shoemaker studied innovation adoption in the areas of agriculture, business and medicine. Their findings identified five attributes of innovation which impact upon whether or not innovations are adopted. These attributes were:

1. Relative advantage
2. Compatibility
3. Complexity
4. Triability
5. Observability

Using the findings of Rogers and Shoemaker, Carole Hahn undertook a study aimed at determining if these same attributes apply to social studies curriculum innovation adoption (Hahn, 1977). The research was designed to determine if potential adopters of new social studies materials perceive the attributes of materials in the same way in educational settings as was true of those in the Rogers and Shoemaker study. It also was designed to determine if perceived attributes of the new social studies materials were related to the potential adopters' willingness to actually use the materials or ideas adopted.

Hahn's findings showed, through factor analysis, that attributes important to potential adopters of the "new social studies", were:

Observable benefits
Difficulty
Investment requirements
Familiarity

There was a strong positive correlation between what was termed observable benefits and attitude toward the adoption of the program. That is, the potential adopter was willing to adopt the innovation: if it could be proven to be better than the program previously used; if there was an increase in student learning and interest; if the innovation was compatible with the needs and values of the teachers and district; and if the outcomes of its use could be observed.

There was a negative correlation between difficulty and attitude. That is the innovation was not seen as adaptable if it appeared to be difficult for the students and teachers to use, or if it required special skills, or more time and effort to teach the material than was true of existing practices.

There was a weak correlation between the investment requirements and attitude toward adoption. The conditions necessary for adoption as it relates to investment were: it could be first used on a small scale, it fit into an existing course; it was low

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in cost and it involved a low risk to students and teachers who adopted it.

Building on Hahn's research, Kissock and Falk undertook a replication study in 1978. Whereas Hahn's study empirically tested the attributes of the innovations as they related to adoption by social studies decision-makers; Kissock and Falk added some classroom teachers to their sample.

Kissock and Falk found that teachers were most concerned about observable benefits (Observability) and materials (Relative Advantage). When teachers became more knowledgeable about the curriculum materials, they lost their belief that the materials were too difficult to use, (Complexity) and came to believe that difficulties in using the materials could be overcome.

These studies showed that the attributes which are most important in adopting an innovation include: will it be better than current materials; will it improve student interest and learning; is it compatible with district values and needs; is it too difficult for students to comprehend and teachers to implement; and will its outcomes be positive and visible. It was concluded that knowledge gained in a training program lessens concern about the difficulty of using the materials.

However, the adoption of an innovation doesn't insure its implementation. Fullan & Pomfret, in Research on Curriculum and Instruction Implementation (1977), found that implementation is not simply an extension of the planning and adoption processes. It is a phenomenon in its own right. In their 1977 study these researchers set out to: review why implementation is an important phenomenon; explain the meaning of implementation; define its potential determinants; and identify and critically assess research evidence concerning the process of curriculum innovation and its organizational implementation in schools.

This study suggests that there are five dimensions to implementation :

1. changes in materials
2. changes in structure

3. changes in role/behavior
4. changes in knowledge and understanding
5. changes in value internalization

Often the failure of a promising innovation doesn't seem to reside in the actual development and production of the curriculum materials. It appears to be an issue of not getting people to agree to try the innovation. It also appears to be impacted by the fact that the innovation often necessitates certain organizational changes that are never addressed. Failure of implementers to address these organizational needs: changes in roles and role relationships; alterations in student-teacher role relationships; and adoption of new pedagogical techniques; often means failure of the entire program. Failure to study implementation may result in the whole adoption process being ignored (Fullan & Pomfret, 1977).

Implementation of an innovation, according to Fullan and Pomfret (1977) means addressing the twin issues of fidelity and adaptation. In other words the innovation must be in use according to its original intent, but there may be some visible change in both the innovation and the relationships at play in the classroom in order to achieve the desired effect (Fullan & Pomfret).

Almost all curriculum innovations involve change in role relationships of organizational members. It may mean a change in the role of the teacher. It might mean that he/she is forced to allow the students to choose their own activities, move more freely around the room, or he/she may take on the role as guide or catalyst or resource person, rather than lecturer or expert or authority figure. However, in different classrooms the needed changes might occur to different degrees or not at all (Fullan & Pomfret, 1977).

In their research Hall and Loucks, (1976) found that individual users reflect different levels of use or degrees of implementation regarding an innovation and may go through different levels over time as they develop the ability to use the innovation. These levels can be diagramed as :

0	Nonuse
I	Orientation (initial information)

II	Preparation (to use)
III	Mechanical use
IV A	Routine
IV B	Refinement
V	Integration
VI	Renewal

One thus takes fidelity or degree of implementation to its logical and methodological conclusion by basing his/her approach on the assumptions that the implementation of innovations can be assessed by determining levels of use according to prespecified criteria. When this determination is made, the change agent can then assess what strategies to use to attain the next level of implementation.

The other consideration is mutual adaptation, or how innovations become developed/changed during the process of implementation (Berman and Pauly, 1975). The Rand project (Berman and Pauly, 1975; Berman & McLaughlin, 1976; McLaughlin, 1976) found that most educational innovations require users to work out their own specific adaptations. In order for implementation to occur it must be a mutually adaptive process between the user and the institutional setting. Implementation success is measured in terms of: the perceived success by the teachers; the perceived fidelity by the teachers; the reported change in behavior by the teachers; the reported difficulty of implementation; and the expected continuation of the project after the Federal funds expire. Familiar weakness of such measurement is that it is based on reported or perceived changes and does not require specific knowledge of the dimensions of the implementation (Fullan & Pomfret, 1977).

Based on this research knowledge one can conceptualize curriculum change in the following way. Curriculum change consists of: subject matter or materials; organizational changes; role or behavior modification; new knowledge and/or understandings; and a change in value internalization. The structural changes that are required in formal arrangements and physical conditions are: student groupings; alternative spatial or temporal arrangements; personnel performing new roles; and adequate amount of new materials. These

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structural considerations don't pertain to changes in users, but to changes in the conditions under which the users interact. These are the easiest to implement, of the organizational aspects of an innovation, in the sense that they can be installed by administrative fiat (Fullan & Pomfret, 1977).

The behavioral manifestations of role relationship change is an essential aspect of organizational change. Some theorists equate behavioral change with organizational change. Innovation often derives from a set of behaviors that users must display at some future time before the innovation is considered implemented. The concern is with the extent to which teachers are able to recognize the range of behavioral alternatives open to them. The role relationship perspective increases the chances of conceptualizing behavior in a way that stresses role relationship change rather than changes in just one role. It de-emphasizes the linear, unilateral, means-end view of implementing planned change. In this respect the innovation is open to continuous development and redefinitions (Fullan & Pomfret, 1977).

Innovation implementation is also dependent upon the knowledge and understanding the users have about the innovation's various components: philosophy; values; assumptions; objectives; subject matter; implementation strategy; and other organizational components particularly role relationships. The users' valuing of and commitment to implementing the innovation's various components is what in the end determines its success or failure (Fullan & Pomfret, 1977).

Determinants of implementation that were empirically derived from putting together these studies were expressed by Fullan and Pomfret (1977) in the following table:

A. Characteristics of the Innovation
    1. Explicitness (what, who, when, how)
    2. Complexity
B. Characteristics of the Implementation Strategies
    1. In-service training
    2. Resource support (time and materials)
    3. Feedback mechanisms
    4. Participation

C. Characteristics of the Adopting Unit
   1. Adoption process
   2. Organizational climate
   3. Environmental support
   4. Demographic factors
D. Characteristics of Macro Sociopolitical Units
   1. Design questions
   2. Incentive system
   3. Evaluation
   4. Political complexity

Characteristics of the Innovation

The two aspects of the innovation itself which the study addressed were those of explicitness and of complexity. If the explicitness is low in an innovation, it could mean user confusion which can lead to frustration. In this way, the low level of explicitness often means a low degree of implementation. The complexity depends on the user ability to perform in new ways. Thus implementation is more difficult if it depends on changed role relationships which are not addressed and planned for ahead of time (Fullan & Pomfret, 1977).

Characteristics of the Implementation Strategies

Fullan and Pomfret (1977) believe that to insure that innovations are implemented, plans should be made ahead of time for the strategies to be used. In-service training should allow for continuous interaction between teachers and consultants. It should give time for unlearning as well as for relearning. There should be frequent meetings for interaction between those being trained for interchange of ideas concerning classroom realities in regard to the innovation. There should be demonstration models available, experiences should be shared, and psychological reinforcement conducive to resocialization should be afforded. Resource support in terms of time and materials should be made available. Feedback mechanisms should be designed ahead of time so that interaction between all the constituencies involved is possible. These mechanisms are also valuable for identifying problems, providing

support for addressing problems, and for allaying fears about how to perform new roles. Special mechanisms are important in order to do away with power relationships between those providing and those receiving feedback. These mechanisms should be designed so that they in no way coincide with the mechanisms designed for evaluation. Collegial and collaborative relationships should be built upon to encourage peer coaching and feedback. Often active involvement in the development process appears to be the critical factor, it appears to have more of an effect on the participation in a program than the initial adoption of the innovation (Fullan & Pomfret, 1977).

Characteristics of the Adopting Unit

An analysis of organizational climate of innovations shows that in order to be successful an innovation should be adopted into a climate which includes: teachers with high morale; with active support from building principals; the general support of the superintendent; teacher participation in decision making; and peer communication. The environment of the school should be carefully analyzed before embarking on innovation implementation. There seems to be some question as to whether the successful adoption of the innovation brings about a favorable climate or the favorable climate brings about the success of the innovation. Different strategies may have to be developed in different situations (Fullan & Pomfret, 1977).

Characteristics of the Macro Sociopolitical Units

By macro sociopolitical factors the researchers are referring to the role of political agencies outside the adopting organization. Usually the promotion of large scale programs are made by political agencies. Research implications for policy in innovation implementation are specific. Central policy makers should emphasize broad-based programs with specific forms of implementation. Also designs must be worked out before innovation

begins. There is even some indication that districts should design structures and strategies before any innovation is identified. It should be an integral part of the school structure (Fullan & Pomfret, 1977).

During the implementation of the innovation, experimentation should be carried out to determine if variants of the program would work better in different settings. In other words development should be undertaken during the use of the innovation (Fullan & Pomfret, 1977).

Evaluation should be directed toward facilitating implementation and local system capabilities. This would mean data feedback on such issues as problems being experienced in the classroom, lack of materials and review of the specific role and behavior expectations. In other words a feedback that will bring about support mechanisms rather than immediate judging of the success or failure of the program (Fullan & Pomfret, 1977).

In the long run, the implementation itself should be analyzed for more successfully introducing innovation any time it is needed. Each aspect of the process should be analyzed and evaluated by participants for further refinement. The consequences of each of the strategies should be assessed. This information could then be used for design paradigms for the introduction of new innovations (Fullan & Pomfret, 1977).

2. Planning for More Effective Implementation

The literature cited in the first section is research-based and quantitatively reported. In the second section the researcher refers to some practical applications of program implementation which are more qualitatively discussed.

William Paul Frey (1979), in "How to Keep Those New Programs Alive and Well", says that the very basic requirements for retaining good programs that have been adopted requires that: someone be responsible for it; continuing staff development be implemented; both the organism and the environment be adapted; and the program be cost effective.

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1. Someone be responsible for it This person could be a staff consultant, a curriculum coordinator, a principal, or others who have some expertise in the use of the innovation techniques. The primary functions of such a person would be: to interpret for the teacher/user (after in-service training) the everyday use of the program; to determine if the program is being used; to help people to adapt the materials and concepts to the particular environment during the beginning stages of the innovation; and to be responsible for the replacement of consumables or damaged materials.
2. Continuing staff development be implemented This means that teacher ownership should be developed through release time projects where teachers are afforded help in designing instructional materials and pulling together published materials that will enhance the use of the innovation. Later staff development programs should be designed to help those who have run into snags or who would like to ask some "What if..." questions. Such staff development should also include time for planning, implementing and evaluating progress.
3. Both the organism and the environment be adapted This requires that the innovation be fitted to improve student outcomes in a measurable way. Such an evaluation should be undertaken only after an appropriate amount of time has elapsed, allowing the innovation to have enough time to be successful.

Adaptation of the organism means that teachers must be given time to identify the need for additional material; that they perhaps sequence materials for more meaningful use; that they eliminate faulty materials; but at the same time that they maintain uniformity of purpose.

It is necessary that the innovation be adapted to fit in easily with other accepted programs that have been in use, and that follow-up be done on the aims of previous and future school programs throughout the school district. Adaptation may also require communication concerning the infusion of the program into existing curriculum.

It requires that the program be adapted to fit the system itself in terms of personnel, space and time available for the student in the school day.

It is also necessary that the innovation be adapted so that additional innovations can be incorporated as they come along.

4. The program be cost effective. There are many concerns to be considered here. One is the question of whether some of the responsibility for the program should be transferred to volunteers or paraprofessionals, in the event that the program requires more student contact time. Another is as simple as whether or not some of the expensive materials can be laminated or in some other way be preserved to cut down on costs.

A look at some specific successful implementation plans is valuable. Curriculum change is successful only if it is carefully introduced to the potential users. As Loucks and Pratt say in "A Concerns -Based Approach to Curriculum Change", changing anything is always more difficult than keeping the *status quo* . In a pilot study to introduce science into elementary schools Loucks and Pratt identified four aspects of change to minimize the problems involved in curriculum innovation:

Change is a process, not an event.
Change is accomplished by individuals, not institutions.
Change is a highly personal experience.
Change entails developmental growth in both feelings about, and skills in using, new programs.

The study showed that the process of change required a three to five year time period to insure the implementation of an innovation that was significantly different from current practice. This change process required a brief "pre-service awareness" period followed by (in this case two months later) three full-day release-time sessions paced to correspond with the changes in the classroom. It also proved to be more effective if the component taught was scheduled as closely as possible to the time of actual teacher use (Loucks & Pratt 1979).

To deal with the issue of the teacher as an individual, several specific ideas were used. Between in-service workshops, two members of the science staff engaged in a variety of "comfort and caring" activities such as talking with teachers and observing their science classes. In-service sessions offered choices of content complexity for teachers with varying amounts of science teaching experience and confidence with the current curriculum. An effort was made to be sure that the teacher would have logistical as well as moral support at the building level. Also the school principals learned about the equipment and supplies needed, ordering and scheduling procedures and other necessary details (Loucks & Pratt, 1979).

Because personal satisfactions, frustrations, concerns, motivations, and perceptions all play a part in determining the success or failure of a change initiative, in-service was not the same for everyone. Choices of content and learning format were available at various times during the in-service sessions. Also to insure a level of personal interaction, the leader to teacher ratio was kept small (Loucks & Pratt, 1979).

The research team identified the feelings and skills of the teachers involved and designed the following seven "stages of concern" (Loucks & Pratt, 1979):

0	Awareness	I am not concerned about it.
1	Informational	I would like to know more about it.
2.	Personal	How will using it affect me?
3.	Management	I seem to be spending all my time getting material ready.
4.	Consequence	How is my use affecting the students?

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5.	Collaboration	I am concerned about relating what I am doing with what other teachers are doing.
6.	Refocusing	I have some ideas about something that would work even better.

Being aware of these levels and identifying them can help facilitators to move teachers from one level to the next in an attempt to achieve optimum results in curriculum implementation.

The outcomes reported as a result of the planned implementation were: science is being taught throughout the district; the outcomes are highly satisfactory; different schools seem to have different profiles and concerns; but management concerns appear to be high where the principal's support is not strong (Loucks & Pratt, 1979).

Looking at the report of another successful innovation, in "Declining Achievement Can be Reversed" Roscoe L. Davidson (1979) says that while dealing with declining achievement, modern schools must also deal with the problem of ineffective change methods. Research projects have identified factors and processes associated with successful change in schools (see Ford Foundation, 1972; Fox 1968; Goodlad 1979; Gorman 1972; Rand Corporation, 1975; and Trump 1972).

Generally, the research identifies these factors and processes as:

Need and Purpose
Climate and Adaptability
Leadership
Staff Development
Cooperative Involvement
Rewards

Davidson (1979) states that in any district the need must first be clearly defined and the purpose for the change be understood by all those who are involved. In addition, the solutions for the problem, or the program for the need, should be analyzed in terms of

the desired effect, and evaluation made at the end to determine if the need has been met.

The climate for change should include the commitment of the participants, along with an understanding of the level of expectation. The staff development climate should include a chance for the participants to develop an establishment of ownership, which includes school autonomy, and a sense of mission (Goodlad 1979). The project itself should be modifiable in order to fit in with the existing practices and the major objectives of the curriculum (Davidson, 1979).

The leadership within individual school buildings is very important and must be analyzed in order for innovation to occur. When the school is viewed as an operating unit having a great deal of autonomy (Goodlad 1979) and as being "... the largest organic unit for educational change" (Goodlad and others, 1970), the leadership role of the principal takes on a paramount importance. The Rand report (1975) dubbed the principal the "gatekeeper of change" and the Model Schools Project (Trump, 1972) specified instructional leadership as the principal's chief function. If the principal is the key motivator and catalyst in unifying staff efforts and in generating a sense of mission then he/she should: take part in staff training; be active in school instruction; and provide ongoing direction and support in adapting the project to local needs (Davidson, 1979).

Staff development (Rand Corporation 1975) is the most important factor in the incorporation of curriculum into classrooms. If it is carried on appropriately it should be a continuous activity imparting skill and knowledge to the participant. It should include concrete and specific areas of the project to the participants. However it should include control mechanisms that will insure the refinement of techniques and the productive use of the resources. Staff development should also have feedback as part of its design (Davidson, 1979).

For a new program, its success depends on the cooperative involvement of the parents, the teachers and the students. Angell (1978) goes so far as to suggest the importance of a contract plan between participants (Davidson, 1979).

The last component of the successful program innovation is the reward system. The most important reward for the teacher is the improved student outcome. However the principal's role is large in giving recognition to those involved in the day to day handling of innovation (Davidson, 1979).

In a discussion of a specific practical application, Davidson (1979) reports on the plan used in Denver. Each school had teachers adopt a reading plan to improve achievement. Preservice training for the innovation included the principal. Ongoing in-service activities were carried on including direct assistance in the classrooms. In order to increase the commitment by the parents and to enhance their understanding "take home" materials were designed. The parents were taught the necessary techniques to enhance their child's learning. Attitude surveys were sent out to parents and the community. All of this was coupled with a day-to-day assessment.

The ensuing success of the Denver program can be attributed to a committed and skillful staff, the full support of the administration and school board, and the presence of other essential elements such as community understanding and support (Davidson, 1979).

Much of the literature points to the single issue of implementation as the weak link in the success of curriculum innovation. Patterson and Czajkowski in "Implementation: Neglected Phase in Curriculum Change" (1979) report that curriculum change seldom happens as expected. In fact recent investigations (Walker, 1976; Shulman, 1976; Fullan and Pomfret, 1977) suggest that most innovations fail to enter classrooms because of the failure of many districts to attend to the business of implementation. The components of such an implementation are: planning for implementation; applying change strategies; and conducting staff development.

The planning for implementation often suffers because the most fascinating part of curriculum innovation is designing or creating the innovation itself. Often the problem is that the institution does not have the sufficient resources to invest the necessary time into implementation activities. Other times the

problem is that, in dealing with those who are going to be using the innovation, time is not taken for personal contact and for unlearning old strategies so that new ones can be used. Overlooking the importance of two-way communication during implementation is often a major mistake. Formal channels must be made available for those using a new program who need help. Also implicit in implementation is the need to understand the culture of the school; who really needs to be informed of the innovation and understand its ramifications, as well as support its use in the building or school district (Patterson & Czajkowski, 1979).

There are three types of strategies that may be used in the implementation of curriculum innovations into schools: reason strategies; power strategies; or influence strategies. Reason strategies are often the motivator for change when practitioners have identified a need themselves and have discovered a solution to their perceived need. Failure to change is due mainly to a lack of knowledge about the alternatives to current practice. Change is more apt to occur when goals are well-defined and generally accepted and when the means to implement change are clearly communicated and feasible (Patterson & Czajkowski, 1979).

Power strategies emanate from the top down. This type of strategy is usually not as successful but sometimes is necessary when a change must be made quickly. It usually has to do with a mandate by the government and is adopted to avoid negative sanctions (Patterson & Czajkowski, 1979).

Influence strategies are among the most successful in bringing about change. In this strategy conditions are made appealing to the implementer, for example, Middle School curriculum is adopted and teachers are given an additional planning period (Patterson & Czajkowski, 1979).

It appears, then, that implementation of new programs may require changes in staff development strategies. The actual conducting of staff development really means not only the re-education of staff by bringing in consultants from publishing companies or university professors to explain a new concept, but also a resocialization of the role of the teacher in relation to the

student. Refinement of roles and role relationships often becomes necessary. It means teachers being able to recognize the range of behavioral alternatives open to them, and to ascertain which ones are applicable in a given setting so that they can change accordingly (Patterson & Czajkowski, 1979).

In "Staff Development, Innovation, and Institutional Development" (1990), Michael G. Fullan asserts that staff development and successful innovation are intimately related. It includes a process to improve: skills, attitudes, understandings, and performance in future roles. He contends that staff development is technical but is political as well. The technical components deal with the skill to design and carry out the desired activities. However, since curriculum change deals with power, bureaucratic positioning and territoriality, there is also a political component involved. In fact, according to Fullan, if staff development doesn't become an institutional development, improvement will never become a way of life. Fullan sees staff development as a strategy for implementation as well as implementation of an innovation (Fullan, 1991).

In the past, studies showed that staff development should be innovation-related, continuous throughout the course of the implementation, and involve some formal and informal teacher exchange components. However some research by Huberman and Miles (1984) showed that innovations were effective when users received assistance, in the form of materials, peer consultation, access to consultants and rapid access to central office personnel.

In "Professional Development Schools", Stallings (1989) states that teachers are more likely to change their behavior and continue to use new ideas if:

1. They become aware of a need for improvement through their own analysis of a situation.
2. They make a written commitment to try new ideas in their classroom the next day.
3. They modify workshop ideas to work in their classroom and school.

4. They try the ideas and evaluate the effect.
5. They observe in each other's classrooms and analyze their own data.
6. They report their success or failure to their group.
7. They discuss problems and solutions regarding individual students and/or teaching subject.
8. Teachers who are asked to change the way they teach need a wide variety of approaches such as : modelling, simulations, observations, critiquing video tapes, and presenting at professional meetings.
9. They learn in their own way continuity to set new goals for professional growth

According to Stallings (1989) the cornerstones of the model are:

- learning by doing: try, evaluate, modify and try again.
- linking prior knowledge to new information.
- learning by reflecting and solving problems.
- learning in a supportive environment and sharing problems and successes.

New staff development projects should be considered as innovations in their own right (especially those which introduce new structures and roles like peer mentor, coaches and the like). In relation to this perspective staff development should be approached with a plan in mind. In the selection of mentors, for example, the criteria for the choice should include his/her expertise on the subject, but also his/her credibility as a classroom teacher and as a colleague who can work well with his/her peers (Little 1989).

Coaching programs represent powerful strategies for implementing instructional improvements that impact on student learning. Joyce and Showers (1989) say that coaching is:
(a) attached to training; (b) continuous; (c) experimental in nature; and (d) separate from supervision and evaluation. It involves theory, demonstration, practice, feedback, and follow-through support.

3. Review of Marker's Paradigm

The former citations have addressed the issues of adoption and implementation of curriculum innovations. Section three is a discussion of the issue of curriculum innovation abandonment.

In "Why Schools Abandon 'New Social Studies' Materials", Gerald Marker reviewed current research concerning the abandonment of curriculum innovations (Marker, 1980):

> A review of the literature on the diffusion of educational innovations reveals that the majority of the research in this area focuses upon the adoption phase of the change process. Major variables in such studies include the characteristics of adopters, the attributes of innovations, the nature of institutional settings, perceptions of the innovations, the nature of the adoption decision, and the activities of change agents. Even though research in the educational change area is relatively recent when compared to fields such as agriculture, a great deal has already been learned about the change process in educational institutions.
>
> It is understandable that the final phase of the change process, the abandonment of the once new innovation, has been generally ignored. Given the massive federal intervention in the educational arena it was predictable that researchers would concentrate on trying to explain who was adopting what innovations and how that process might be improved. Curriculum development projects, regional development laboratories, educational change agents, foundations, and state departments of education were concerned with seeing that the new programs were widely adopted. All had a vested interest in documenting that the schools were indeed using the materials and procedures which had required the investment of millions of dollars. Studies of the adoption process were certainly the logical place to begin.

Thus, according to Marker, it is no accident that most research regarding innovation deals with adoption, rather than abandonment.

Also it is difficult to actually determine when a particular activity has been abandoned except by asking those who were supposed to be using it.

In his study entitled Why Schools Abandon "New Social Studies" Materials (1980), Gerald W. Marker devised hypotheses to test regarding the reasons for schools' abandoning newly adopted programs. His strategy, for devising hypotheses for his study, was to take the research of Fullan and Pomfret (1977) which categorized concerns for innovation implementation as: characteristics of innovations; characteristics of change strategies; characteristics of the adopting unit; and characteristics of macro sociopolitical units. (Fullan and Pomfret's categories do not constitute a particular change model but instead accommodate research which stems from the testing of a variety of change models.) Marker modified this structure and adopted the following categories: characteristics of the innovation; characteristics of the change strategy; and characteristics of the school culture.

Marker's study focused on the instructional materials, as the text and materials are the major determiners for what is taught in social studies classrooms. Studies indicate that published materials, mostly textbooks, dominate school material. (Boyd, 1979; Shaver, Davis and Helburn, 1979).

Indiana state schools choose books from a "state adopted list" each five years. In 1974 many of the schools adopted texts which could be identified as inquiry-based social studies. By 1979 many of these schools decided to discontinue these inquiry-based programs. In Marker's study, seven schools were identified as sites for interviews regarding abandonment. Principals, department heads, and social studies teachers, at these sites who had used inquiry-based social studies or who had taken part in the original adoption were interviewed for approximately one hour each. In order to structure and quantify some of these data, Q-sort cards (cards that bear statements which respondents are asked to rate according to specific categories) were designed with statements which respondents were to rate as "very descriptive", "somewhat

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descriptive" or "not descriptive". In some cases follow-up calls were used to verify or illuminate meanings that were unclear.

The schools in the study ranged in population size from 750 to 2,700 students. The schools themselves were diverse. Of the seven schools in the study, one was a large urban school, there were two "typical" suburban schools, two were found in towns from 15,000 to 40,000 in population, and one near a large state university. The students represented in these seven schools have a percentage range of from 30% to 90% who will attend post-secondary schools. As far as the teachers in these schools, their teaching styles ranged from traditional to innovative. In these seven schools the principals' styles ranged from a tight top-down management style to a more collegial relationship with the teachers. Only one of the seven was a first year principal, most had more than 5 years of experience.

As far as the profiles of the teachers and department heads were concerned, they were tenured, held masters degrees, and had taught for from 8 to 10 years. The departments varied in size from 6 to 16 members. Four of the seven sites had carried on pilot studies.

There was no control group used in this study, although there were school districts who intended to continue using inquiry methods in social studies. There were also districts who had never adopted the innovation.

Marker's strategy was to examine the literature in each of the separate areas he wished to study and devise hypotheses based on this literature.

Characteristics of the Innovation

Findings of the literature, relating to characteristics of the innovation, revealed that perceptions of any innovation often are not consistent with reality. However the perception of the innovation is more important than the reality when it comes to adoption or abandonment. Expectations for what the innovation will do generates interest which brings about adoption. However, often if

materials are in reality harder to use than expected, this perception brings about abandonment.

Daft and Becker (1978) found that "newness" is often equated with "better". A study by Rogers and Shoemaker (1971) found that innovations must have results that are observable or visible to others if they are to be retained. Furthermore because educational goals are ambiguous and diffuse (Miles, 1964; Brickell, 1961 and Sieber 1968) observability of value to the public is obscure. Thus unless some sort of attempt is made by the school district to report improvement in student achievement, new programs seldom seem to be worth the investment.

Pay-off, as perceived by educators, is student interest (Brickell, 1961) and in fact interest is even more important than student achievement data (Berman and McLaughlin, 1975). It is clear, however, that although hard data is necessary to insure adoption, it is not necessary for abandonment. In fact there is no clear indication of how the perception of the user relates to abandonment.

Using data from the literature as his foundation, Marker devised three hypotheses related to the innovation itself as it relates to abandonment:

Hypothesis #1

> The more an innovation is perceived by its users as no longer "new" the more likely it is that the innovation will be abandoned. (REJECTED)

Using Q-sort cards (cards bearing statements which are then put in categorical stacks) respondents were asked to rate specific statements as "very descriptive", "somewhat descriptive", or "not descriptive". One of the Q-sort cards read:

> I guess if I were honest, I would have to describe this school as "fad city". If it's new we seem to have it! While it is hard to put your finger on it, there is pressure to always be trying the latest thing even if at times it is not as good as some of the old things that we know work. Maybe that's the best way

> to say it, it's not that the latest thing is better that is important around here, but that it is the "latest thing".

In responding to this statement fourteen of the seventeen rated the statement as "not descriptive" or "somewhat descriptive". Statement two read:

> Given the school board and administrators that we have now I would have to say that the signals are rather clear: that this is not the time to be proposing a lot of new things in this community. I'm not saying that someone with a new idea wouldn't be allowed to try it but the present trend around here is running heavily in favor of keeping things like they are.

This statement was rated "very descriptive" by eight; "somewhat descriptive" by four and "not descriptive" by five.

In answer to the questionnaire, responses were that the "new" social studies was adopted to improve student interest, class discussion and thinking skills, and because there was a perceived need to introduce the inquiry process into social studies classes. Respondents said that in seeking new materials, after abandonment of the inquiry-based materials, they were looking for a program that was interesting to the students and which fit their reading ability. They also wanted to be sure that these materials require no extra training for new teachers as they are added to schools.

Marker (1980) determined that the fact that the program was no longer new, nor the fact that there was no attempt to evaluate the success of the student in obtaining new skills, were not the primary reasons for abandonment of the "new social studies". The issue was that it didn't meet the expectations of the teachers: that the program would have high interest value for their students. They said that when the innovation was adopted the three important criteria were: high interest, readability, and that it "fit" the teacher's style. Some of the respondents had inherited the present materials and department heads were especially concerned that, whatever was selected for use during the coming five years, it be structured in such a way that it could be passed along from teacher

to teacher as assignments and personnel changed. Most saw the new materials as being too distinctive to be adaptable to a wide range of teacher abilities and backgrounds.

Hypothesis #2

The more unrealistic the users' expectations of the innovations the more likely the innovation is to be abandoned. (ACCEPTED)

Questionnaire data showed that the teachers expected the "new" social studies to be high interest, improve class discussion, and involve students in the inquiry process. Also by a ratio of two to one they expected the materials to be more complex than what they were using before. This potential complexity of the materials did not seem to be a negative factor as far as these teachers were concerned. After using the materials, in all but a few cases, the expected student interest didn't materialize. Experience with using the materials, showed that the materials were more complex than the traditional texts, that it took harder work to teach it, and 50% of the respondents said they had to supplement the inquiry materials. Most of the teachers cited a disappointment in the level of student interest and in that regard they had misperceived the interest generating power of the materials; reality fell short of expectations (Marker, 1980).

Hypothesis #3

The less visible the pay-off from implementing an innovation, the more likely that innovation is to be abandoned. (REJECTED)

Teachers were asked about pre-adoption evaluation as well as any conducted during and after the use of the innovation. Those teachers inheriting the program remembered no evaluation. When asked if it were ..."easy to see the pay-offs when using these new materials?", the respondents claimed that they could see the pay-offs but it was almost impossible to "show them" or "prove them". All evaluation of the program was impressionistic. No one

mentioned that abandonment was based on lack of pay-off. Teachers also said that they were not called upon to furnish justification for its use.

Pilot teachers were not available to report on their concept of pay-off based on what they expected from the program. There was no indication that any evaluation has been made of the pilot for the study. Teachers felt that they knew the program was valuable, but had no way to express it or show it to others. Also there was no special thanks or evaluation given them based on their use of the program. There was also, however, no mention of pay-off as a major factor for abandonment either. While it was true that evaluation data were lacking, that fact did not play a role in the decision to abandon the materials.

In his summary of the Characteristics of Innovations, Marker (1980) says:

> The perception that social studies materials are no longer new seems not to influence the decision to continue or abandon such materials. Likewise, the lack of formal evaluation data documenting pay-off apparently does not contribute to the decision to abandon, though teachers' feelings about how well the materials are working is related. When teachers find that in use the materials fall below their preadoption expectations, the resulting disappointment does seem to be a factor in the decision to abandon the materials.

Characteristics of the Change Strategy

The literature, as it relates to the change strategy, agrees that change happens or is made to happen in various ways. It is true, however, that the choice of change strategy employed is related to how successfully the innovation is implemented.

The relationship of the instructional leader to implementation success is one of the considerations. A study by Hanvey (1979) found that innovations were so closely tied to a particular person that their continuation depended on the sustained interest of that person. Aslin and DeArman (1979) found that reasons related to personnel were most often given as accounting for abandonment of

an innovation. Daft and Becker (1978) referred to leaders as "idea champions" and "major advocates".

The source of innovation is also part of the change strategy in implementing any innovation. Herlihy (1974) found that implementation failures are often blamed on a change strategy which did not involve the users until the later phases of the change process. Daft and Becker (1978) made a fascinating find in this respect. In schools for the college bound, classroom innovations were advantaged if they originated with teachers rather than administrators. However, in schools for non-college bound students, classroom innovations were not disadvantaged if they originated with administrators. It appears, then, that the "new social studies" materials would have had a better chance of being properly implemented if the major advocate was a teacher, at least in schools for students who were college-bound.

The issue of ownership also must be addressed. Casual impressions can be made, concerning ownership, when talking to a teacher by detecting whether they speak of "my course in law" or "my unit on status in America" or if they speak of "that course in government". Ownership is an important part of change strategies. Teachers tend to use what they themselves have developed. In this regard, Berman and McLaughlin (1975) learned that local adaptations of nationally developed programs is key, but of less importance than the spin-off of learning while doing. The more personal an innovation becomes to its user, the more likely it is to be adopted and retained.

However the ownership issue is not a clear one. Hanvey in 1979 did a study on the Anthropology CASE Materials Project. The idea was to design partial materials so that groups of teachers could assemble and complete the package in order to meet local needs. The study was unable to detect any increased sense of ownership among those who piloted the program. Besides that, the teachers who used the program regularly complained that they didn't have a completed instructional package to use.

Another issue to be considered is whether the change strategy engenders inappropriate implementation. In a study done on the slow

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diffusion of "new social studies" materials for the National Science Foundation (Shaver, Davis, and Helburn, 1979) one of the identified problems was the wide gap between the priorities of the program's developers and those of the classroom teachers. It was discovered that the emphasis on content, reasoning, and inquiry appears to threaten the central expectation that the students will be quiet and all work on the same thing at the same time. In this respect, the local adaptation of materials is one means of making materials fit the teacher's own expectations and needs, but at the same time it can mean that the program may be used in a way that the developer never intended.

Hypothesis #4

> Innovations are often adopted due to the efforts of a major advocate. When that person no longer promotes the innovation, the innovation is likely to be abandoned. (ACCEPTED)

The loss of the major advocate was considered a primary factor in four of the abandonment decisions. Teachers who were to be using the materials were not a part of the initial material selection. They felt that the person who could make the materials work was now gone and unavailable to help them with implementation. This person was somewhat better equipped because of having attended a summer institute. Those who were left felt no ownership in the program.

Of the ten statements regarding this issue, only one of the Q-sort cards elicited significant findings:

> Most of the new things around here come as the result of the interest and energy of a particular person. In other words, someone decides to champion the new thing and because of his or her efforts the thing goes. But, if they are reassigned or leave then it isn't long until the program is discontinued.

The response to this card was, sixteen of seventeen chose a "very descriptive" or "somewhat descriptive".

Hypothesis #5

Users who feel a sense of ownership of an innovation will be reluctant to abandon that innovation. (REJECTED)

Marker believes that the literature regarding the abandonment of the new social studies may shed some light on the disappointing achievement results of the CASE materials project Anthropology Materials Project (Richburg, 1969). The teachers reported that they had been able to adapt project materials to fit in with normal classroom concerns : insertion of a lecture, use of a film, continuation of community survey or using dittos containing definitions of key terms. The areas in which the teachers reported problems of adaptation were those which involved declining reading ability, and lack of student interest. There also were problems when the material was inherited rather than a product of the teacher him/herself or materials that didn't fit his/her teaching style . Only one teacher reported that, had the materials been "easier to adapt", he might consider continuing to use them. Former pilot teachers were usually described as having a "special commitment" to the program. Perhaps those pilot teachers could be considered to be more of "major advocates" than merely teachers.

Marker's (1980) findings showed that the teachers abandoning the materials felt little or no sense of ownership of them; the selection of the materials had not been their choice and they felt no obligation to continue using them. Although all teachers using the program had to do some modifications in the program, and thus had some ownership in it, the really tough problems that the teachers reported that they had to contend with were declining reading ability or general lack of student interest. This was even more true for the teachers who had inherited their materials and who found that those materials didn't fit their own teaching styles. Marker (1980) concluded that a sense of ownership was not a powerful force for or against abandonment.

Hypothesis #6

Innovations originating from an inappropriate source are more likely to be abandoned than those originating from an appropriate source.(REJECTED)

In examining the Q sort cards Marker found that 14 of 17 respondents said that the following statement was either "very descriptive" (6) or "somewhat descriptive" (8):

> Most classroom type innovations originate with teachers and I would say that most administrative type innovations originate with administrators.

Administrators were never mentioned in relation to innovative classroom materials. When respondents were asked how they found out about the new curriculum they answered:

> When the new book arrived (2)
> From the former pilot teacher (1)
> The department head learned in a summer workshop and arranged for one of his teachers to be a pilot teacher.
> From a regional dissemination center (1)
> From a social studies field agent (1)
> From the monthly Journal of NCSS (1)

In no case was there any indication that the program was pushed onto the reluctant teacher by an aggressive principal or supervisor. The source of the innovation's adoption also was not proven to be a major source of abandonment according to Marker's (1980) research. He found that at the classroom level teachers have the power to make a wide range of decisions as long as they do not violate local norms. Whether the innovation was introduced by the school district in the guise of textbook adoption, or by the individual classroom teacher as a result of a graduate class or summer institute, abandonment was based primarily on the failed expectations of the classroom teacher.

Hypothesis #7

> Innovations employed in a manner different from that intended by their developers are more likely to be abandoned than those which are implemented as their designers intended. (ACCEPTED)

In an attempt to "make them work" sometimes materials were used inappropriately. While such attempts to modify the materials may not be accurately described as misimplementation, they in some cases did result in the use of materials in a way un-anticipated by their developers. Nine of the twelve teachers abandoning the program indicated that they had to make significant changes to the materials in their classroom. One of those responding had had special training. Some of the changes made were more damaging than others. One teacher found it hard to make the inquiry phase work. This would have had to be damaging since that was the major thrust of the newly adopted program. Another left out the graphs and charts because students didn't understand how to use them. Still another reported that the case studies were hard to deal with because the students couldn't read the material and usually missed the point of the study. Still another major concern was that constructing tests that would measure the thinking skills was difficult, and therefore teachers usually ended up testing only recall. Another major concern was that the program didn't match the style of the teacher

When the teachers were asked (Marker, 1980) :

> Overall when you take into account the goals you had when you began using these materials, about what percentage of those goals would you say were achieved?

The response was less than 50% of the teachers rated the achievement rate to be 80% or above. The most typical response was that the achievement rate was 60%.

Marker (1980) summarizes change strategies in this way:

> Major advocates are key persons in abandonment decisions. The withdrawal of their support is a strong indicator that abandonment is not far off. To a lesser extent the misapplication of the innovation also contributes to the likelihood that it will be abandoned as users are both frustrated in the process and disappointed with the results. Users who were abandoning "new social studies" materials had no strong sense of "ownership" of those materials, perhaps because while they had made adaptations of the materials those changes had been minor. Finally, no support was found for the notion that these materials were being abandoned because they had originated with an inappropriate source. e.g. a supervisor or administrator.

Characteristics of the School Culture

A review of the literature revealed to Marker that change is slowed because there are few incentives for change in the culture of the school. Pincus (1974) claims that the school's monopoly on educational services made lack of change a natural consequence. Sieber (1968) said that the vulnerability of schools to public pressure and the quasi-professional status of teachers makes public schools very conservative organizations. Hanvey (1979) and Sieber (1968) defined the public school as a weak system of sanctions and rewards where the pay system is geared to seniority rather than to merit. Boyd (1979) describes the public school as "scarcely a climate for risk-taking and experimentation or responsiveness to consumers." On the other hand, Brickell (1961) says "the attention, encouragement, and recognition given to teachers by people outside the classroom during the introduction of new programs are among the strongest causes of their success".

Hypothesis #8

> Innovations are abandoned because there are too few incentives in the culture of the school to sustain their continued use.(REJECTED)

Two items in the Q-sort deck were concerned with incentives:

> It's really tough to get new things started around here. It's not that the superintendent and school board are opposed to new ideas, it's just that they don't much seem to care. People who want to try new things are pretty much on their own. Maybe it is because people seem rather satisfied with things as they are now. I only know that the extra work involved in trying something new doesn't seem to get a person many points where it counts.

Seven saw this as "very descriptive", three said "somewhat descriptive" and seven said "not descriptive".

> It is clear to everyone around here, from the school board and superintendent right through to the teachers, that this is expected to be an innovative school system. People who try new things are recognized and rewarded and they get whatever support is needed to make new things work. Some of the new things work and some don't but that is to be expected. It's no big deal if something new doesn't work out. When we have problems we sit down and try to figure out what to do. On the whole I would say that teachers are very involved in helping this school stay one of the best around.

Three respondents said that this statement was "very descriptive", six said it was "somewhat descriptive" and eight saw it as "not descriptive".

In analyzing the interview questions, when asked what types of incentives were present for trying new courses of study the department heads answered: a public "pat on the back", or travel to another school district or professional meetings. Almost all teachers answered "none". One teacher answered that he was allowed to develop curriculum materials which he later was allowed to publish commercially. Another was mentioned in the district's newsletter. However, none had thought about incentives and none seemed to resent the lack of explicit incentives.

When asked if it's risky to try new ideas in the classroom, none of the respondents said "yes". In three of the seven schools, respondents felt that there was risk in "other departments" but not in social studies. One department head said: "You do just about what you want around here, but if your idea backfires, you had better be ready to take the blame because the principal isn't going to come to your rescue".

Therefore this hypothesis is not borne out by Marker's (1980) findings. In no case did any of his respondents or interviewees express the feeling that it would be risky to try something new.

Marker (1980) says:

> On the basis of this study, the "incentives" hypothesis was rejected. While it is true that many traditional incentives are not appropriate in the culture of the school, those which are appropriate are apparently not powerful when it comes to decisions involving instructional materials. This may be because the students rather than administrators and other teachers control one of the most powerful incentives. Teachers really care about their students and want them to be interested in what is being taught. The pursuit of student interest in their subject may be a clue to which incentive the teachers feel is most important.

A summary of Marker's research reveals that the abandonment of innovations is a normal part of the cycle of change. Most of the research available is on diffusion and adoption processes. However there is a growing concern over the abandonment phase.

Eight hypotheses were tested in this study. The findings were based on in-depth interviews; on a Q-sort exercise in seven Indiana schools that were abandoning the "new social studies program". Respondents were principals, department heads and social studies teachers from those seven Indiana schools. The hypotheses were developed inferentially from the literature of innovation adoption.

Based on the findings of the research, abandonment was caused by: the loss of the major advocate; unrealistic expectations for the program on the part of the users; and problems with misimplementation of the innovation.

A decision to abandon does *not* mean that the decision to adopt was unwise. The main factor that was not accounted for in the study and perhaps in the implementation phase as well is the: changing context of the curricula; changing student bodies; changing teachers and administrators; changing of society in general; declining reading abilities; declining enrollments; and increasing class sizes.

4. Elaboration on the Research Design.

Section four of the Review of the Literature is designed to validate the decision to adopt the interpretive research design for use in this study.

Qualitative research is a loosely defined category of research designs which elicit verbal, visual, tactile, olfactory, and gustatory data. Its data takes the form of descriptive narratives based on field notes, recordings (either audio or video), written records and artifacts. It is based on and grounded in the description of observations and answers the question: "What's happening here?" (Goetz and Le Compte 1991).

Critics object to the term qualitative because they think it sounds too imprecise. Other terms are used such as: interpretive (Erickson 1986) implying meanings important only when the actor involved in the action is taken into account; naturalistic (Lincoln and Guba 1985) implying that the study is unaffected by the scientist's interfering; phenomenological (Wilson 1977) implying that knowledge and reality can be known only through human experience; and descriptive (Wolcott 1980).

Qualitative designs differ according to their own history and links to human science and inquiry. Ethnographies focus on the culture of humans in their natural groups. Field studies and community studies are geographically based. Case studies and biographical or life history investigations, as well as document analyses, are individual discussions interested in the effect of a particular program on a particular group of people (Goetz and LeCompte 1991). Qualitative research suggests analyzing the

everyday life of people in a group taking into account their shared meanings and symbols, their practices and beliefs, their artifacts, their folk knowledge, and their behavior.

According to Bogdan and Biklen (1982) quantitative and qualitative research are mutually exclusive paradigms. Whereas quantitative research is experimental or quasi-experimental, dependent on surveys, simulations or standardized observations; qualitative research is ethnographic, based on field or case studies or document analysis. Quantitative research is based on the assumptions that: reality is fixed and knowable; that knowledge is based on explanations and predictions; and that research designs and results are unaffected by values of the researcher and the subject. On the other hand, qualitative research assumes that: reality is everchanging and incompletely knowable; that knowledge is tentatively held understandings; and that research designs and results are permeated by the values of the researcher, the participant, and the audience.

Qualitative research has its roots in western European intellectual history and literature as well as in the social sciences. Originally it was adopted for use in the arts and literature in order to give the audience the perspective of those who have little or no voice in the political rhetoric. These were expressed in such works as The Barber of Seville, and the German folklore of Grimm's Fairy Tales. It was also adopted by ethnographers like Bronislaw Malinowski who believed that there was as much truth in what colonial subjects said about themselves as there was in what the colonial administrators said about them (Erickson, 1986).

In the United States the muckrakers of the 1920's such as Lincoln Steffins in The Jungle, and Jacob Riis' photographic depictions of the urban poor in How the Other Half Live carried on a tradition of reflecting the concerns of the powerless (Erickson, 1986).

Attempts to depict how people live in and perceive their place in society was discussed by Wilhelm Dilthey (Dilthey,1976). He suggested that methods of human sciences should be hermeneutical with the aim of discovering and communicating the meaning

perspectives of the people studied. Later these attitudes were adopted by Husserl (1970) and Weber (1978) among others. Subsequent research by Robert Park, W.F.Whyte, Everett Hughes, and Becker and Geer made qualitative research an authentic alternative to standard research.

Many researchers have begun to view the social sciences primarily as interpretive disciplines (Gergen, 1982). They are seen as the processes by which humans attempt to construct their reality. Included in the interpretive paradigm (Armento, 1991) is ethnographic research (Erickson, 1986; Fenstermacher, 1986; Goetz & LeCompte, 1984; Palonsky, 1987; White, 1985); the study of ordinary language or the linguistic perspective (Green, 1983; Green & Smith, 1983; Green & Weade, 1988); the study of social knowledge from the perspective of women, (Blair, 1985; Boydston, 1975; Dietz, 1987; Maher, 1987; Maher & Tetreault, 1987; Martin, 1982; Sherman, 1984; Westkott, 1979); the study of social behavior from a range of humanistic disciplines including art, theater, music, architecture, and journalism (Barone, 1983; Eisner, 1979; Elbaz & Elbaz, 1981; Milburn, 1985); and the study of social behavior from a cognitive perspective that focuses on such internal processes as attention, motivation, memory and knowledge schemata (Magoon, 1977; Pressley & Levin, 1983; Winne & Marx, 1982; Wittrock, 1974, 1977,1978,1986).

However, those who still prefer the more "scientific" approaches to research have reservations in accepting qualitative research. They take exception to what they consider to be issues of validity inherent in qualitative analysis.

Miles and Huberman (1984), in their book Qualitative Data Analysis : A Sourcebook of New Methods have attempted to answer the questions related to qualitative analysis:

> How can we draw valid meaning from qualitative data? What methods of analysis can we employ that are practical, communicable, and non-self-deluding- in short *scientific* in the best sense of the word?

Although qualitative analysis has the above mentioned weaknesses, its data is attractive in that it is: well-grounded; contains rich descriptions with explanations of processes occurring in local contexts; and has such specific attributes as chronological flow, local causality and fruitful explanations. Qualitative data also means serendipitous findings, and new theoretical integrations. It allows researchers to go beyond initial preconceptions and frameworks and contains an undeniability that mere numbers can never match (Miles and Huberman 1984).

The interpretive approach to research, (according to Erickson 1986) points to family resemblance and explains the human meaning in social life through elucidation and exposition. The significance of this approach is that it describes the immediate and local meanings of actions, it makes use of the rich description. It is a technique more than a method in which the issue is the content not the procedure.

Besides the procedural concerns one must examine those that are substantive. Erickson (1986) describes the nature of classrooms as socially and culturally organized environments for learning. The nature of teaching is only one of the aspects of the reflexive learning environment. The substantive concern is the nature and content of the meaning perspectives of the teacher and the learner as intrinsic to the educational process.

The focus of such a study, as far as substance is concerned, should be the close analysis of the fine details of behavior and the interaction with the analysis of the wider societal context. The methods are an attempt to be empirical without being positivist. To be rigorous and systematic in investigating phenomena and everyday interactions.

Such an endeavor requires the following practices from fieldwork research (Erickson, 1986):

1. Intensive, long-term participation in a field setting
2. Careful recording of field notes and other kinds of documentary evidence
3. Subsequent analytic reflection
   a. Detailed description

b. Narrative vignettes
c. Direct quotes
d. Charts, summary tables, descriptive statistics

4. Definition of everyday events
5. Significance as viewed by the participants
6. Induction and deduction in constant dialogue

As in participant observation one must know about the specific structure of occurrences rather than their general character or overall distribution; about the meaning perspectives of the particular actors in the particular events. It is important to observe the naturally occurring points of contrast where they can be observed as natural experiments that would be impossible to set up and control in any other experimental design. One can identify specific causal linkages that can not be identified by experimental methods. In this respect the interpretive research design is particularly valuable in the development of new theories.

According to Erickson, (1986) the interpretive fieldwork design is best at answering the following questions:

1. What is happening in a specific setting?
2. What do these actions mean to the actors involved in them?
3. How is what is happening here related to the larger environment of these actors?
4. How are happenings organized in the overall pattern of the larger culture?
5. How do the ways everyday life in this setting is organized, compare with the organization of social life in a wide range of settings in other places and at other times?

Erickson (1986) also says that these questions need to be answered because of the invisibility of everyday life. This coincides with the ethnographic idea of making the familiar strange and more interesting in order to identify new meanings. It satisfies a need for specific understanding through documentation of concrete details of practice. The need to consider the local meanings that happenings have for the people involved in them. The need for

comparative understanding of different social settings (i.e. the fact that appropriate home behavior may be inappropriate school behavior). The need for comparative understanding beyond the immediate circumstances of the local setting across history and across contemporary societies. The central questions concerning interpretive research are those that are neither trivial nor obvious (Erickson 1986).

In order to carry on such activities the structure requires specific data. Erickson defines these as the nine elements of a report of fieldwork research (Erickson 1986).

1. Empirical assertions
2. Analytic narrative vignettes
3. Quotes from fieldnotes
4. Quotes from interviews
5. Synoptic data reports (maps, frequency tables, figures)
6. Interpretive commentary forming particular description
7. Interpretive commentary forming general description
8. Theoretical discussion
9. Report of the natural history of inquiry in the study

In this case, interpretive research is appropriate in taking the hunch, "something has gone wrong with this curriculum" and trying to analyze it.

Summary

The Review of the Literature was designed to: examine a perceived need for identifying procedures in curriculum innovation adoption and implementation; look at several interpretations and suggested structures in regard to improving innovation implementation; select a paradigm for investigation and interpretation of data concerning curriculum abandonment; and explain the selection of the interpretive research approach as a means to organize the data gathered during the researcher's study of an innovation that failed.

The adoption procedures for a curriculum innovation should be understood in order to determine if poor implementation has caused its failure. In part one Rogers and Shoemaker (1971) identified five attributes of an innovation which must be evaluated if it is to be adopted. Hahn (1977) and later Kissock and Falk (1978) found that four attributes of the "new social studies" had to be addressed to effect adoption. However, Fullan and Pomfret (1977) discovered that other factors, in addition to the innovation itself, must be addressed if an innovation is to be successful. These factors are:

A. Characteristics of the Innovation
   1. Explicitness (what, who, when, how)
   2. Complexity
B. Characteristics of the Implementation Strategies
   1. In-service training
   2. Resource support (time and materials)
   3. Feedback mechanisms
   4. Participation
C. Characteristics of the Adopting Unit
   1. Adoption process
   2. Organizational climate
   3. Environmental support
   4. Demographic factors
D. Characteristics of Macro Sociopolitical Units
   1. Design questions
   2. Incentive system
   3. Evaluation
   4. Political complexity

In part two the literature suggests some designs which have proven successful in specific areas. William Paul Frey (1979) says to retain programs that have been adopted means that: someone should be responsible for them; continuing staff development should be implemented; both the organism and the environment should be adapted; and the program should be kept cost effective.

In part two Loucks and Pratt (1979) also address the issue of stages of concern as they relate to innovation practitioners:

0 Awareness
1 Informational
2 Personal
3 Management

4 Consequence
5 Collaboration
6 Refocusing

Being aware of these levels will help innovation facilitators to move teachers from one level to the next in an attempt to achieve implementation.

The literature in part two identifies the weakness of the implementation process as the cause for abandoned curriculum innovation. Even though districts believe they have implemented an innovation their lack of attention to new strategies that address the issues of: adoption, staff development, coaching programs, and two-way communication; often make abandonment imminent.

In part three Marker's study (1980) concerning the abandonment of the "new social studies" in Indiana is discussed. Marker modified Fullan and Pomfret's structure and devised some hypotheses based on the literature to test out what caused the abandonment of the "new social studies" in Indiana. He found that the innovation had been abandoned because it had not fulfilled teacher expectations, because major advocates of the program were no longer in place, and the innovation was being used in ways not intended by the designers. What is equally important to this study is that Marker designed a paradigm which the researcher could use to examine her information.

In part four the interpretive research design is identified as a qualitative, but structured way in which data can be examined. There is no attempt to convince the reader that the material is objective. Rather the subjectivity is stated and thus can be kept in mind. On the other hand more consideration can be given to those actually involved in the events. It is a natural history of what happened in a specific case.

CHAPTER III

METHODS AND PROCEDURES

Introduction

This study is an example of the value of interpretive research in analyzing the school culture. The researcher initially set out to do a quantitative evaluation of a curriculum innovation. Although this was a legitimate activity, several roadblocks appeared almost immediately. First, she found it impossible to find an independent instrument to measure creative thinking, the skill being taught. Secondly, the measurement provided with the program was not truly objective nor independent. When the researcher sent out questionnaires to colleagues, she discovered that many had not ever used the program and several who had used it had become disenchanted and had abandoned its use. The interpretive research design allowed the researcher, through constant inductive and deductive dialogue, to investigate and chronicle what had happened to a clearly valuable program that had been abandoned.

The interpretive research design was adopted because, according to Erickson (1986), it is best at answering the following questions:

1. What is happening in a specific setting?
2. What do these actions mean to the actors involved in them?
3. How is what is happening here related to the larger environment of these actors?
4. How are happenings organized in the overall pattern of the larger culture?
5. How do the ways everyday life in this setting is organized compare with the organization of social life in a wide range of settings in other places and at other times?

Also, as time went on, it became evident that what was happening lent itself to a "life history" analysis of a curriculum innovation, and its failure.

CoRT is a program developed by Dr. Edward de Bono to teach thinking skills to people of any age and grade level, in a meta-cognitive way; that is, to think about the process involved in the activity of thinking. Each lesson follows the same format:

* introduces the process to be practiced
* gives an example of the process
* in groups has students practice the process (for five minutes)
* has students report findings arrived at, using the process
* discusses the process and explain its principles
* has students explain the principles and tell which ones they think are important or which they think can be used most effectively

Dr. de Bono's research, in the area of lateral thinking and the structure of the brain, led to his development of the CoRT series. His goal is to teach creative thinking as a skill. The success of the CoRT thinking program, according to its advocates, is its simplicity, adaptability, and flexibility.

The AGTP program is designed for students in grades K-9 who have been identifies as Academically Gifted or Talented. They are taught the prescribed curriculum of the school district in a compacted form and are given enrichment activities.

Methods

In order to achieve the purposes of the study the researcher adopted the following methods and procedures. To map the adoption procedures, she used rich description in describing the steps through which the innovation traveled, relying on her own notes and recollections and those of the administrator who introduced CoRT to the AGTP workshop (see Appendix B, page 121 & 122, Transcript from a Taped Interview).

To answer the Question: "What is happening in this specific setting?" the researcher discussed her own use of CoRT in the classroom. She transcribed data written by students taking the ten

week course. In keeping with the suggestion of the CoRT I program, the pre/post tests (see Appendix C page 133 Pre/Post Test Data) were tabulated to determine whether or not students, who completed the program, exhibited an increase in the meta-cognitive skills taught during their use of the treatment.

In addition, the researcher commented on the notes taken at the time the treatment was being taught. These gave insight into student attitudes as seen by the teacher, as did the evaluations written by students during the course of the program.

Using content analysis of the Teachers' Manual, the following claims and suggestions for use were identified as being made by the designers of CoRT I [de Bono 1973 (a)]:

Claims

1. This program is appropriate for people from six years to adult (forward).
2. Pupils who have been through the program develop a broader view of situations (page 2).
   a. More likely to see both sides of an idea (page 5)
   b. Total number of arguments almost doubled (page 5).
3. The focus is on different operations which crystallize into definite concepts and tools (page 6).
4. The general operations mode of thinking skills (as opposed to algorithmic or content method) means better transfer to solving problems (page 8).
5. The group method gives slower or shyer students a chance to watch the better student and model better thinking skills (page 10).
6. Grouping of friends is not recommended (page 10)
7. The ideal group size is 4 (page 10).
8. Some high achieving pupils find that in a group they cannot express their own ideas (page 11).
9. Students not good at absorbing material because of disability or inattention find that they can function well (page 11).

Suggestions For Use

1. Lessons are designed to be used once a week for ten weeks (page 12).
2. Teacher may use material or generate his own materials as long as the essential purpose is to focus on a particular aspect of thinking (page 13).
3. Teacher must guard against: facetiousness, wordiness, silence and laziness (page 14).
4. Teacher must remember and remind students that the process and not the subject is the object of focus and use the label (page 14).
5. The difference between thinking skills should be emphasized (page 14).
6. A brisk pace must be maintained for purposes of control and focusing on process (page 14).
7. In primary grades no student idea should be rejected (page 18).
8. As students mature the teacher must more and more evaluate the validity of ideas expressed. (page 19 &20).
9. As students mature the written essay should be used more and more to:
    1. control facetiousness
    2. give credit for individual achievement
    3. convince students they don't know everything about thinking skills (page 20).

Survey Questionnaires

Using the identified claims and suggestions from the CoRT Teachers' Manual, the researcher designed a questionnaire (see Appendix A, pages 112 - 115) . Her specific plan was to see if the claims were valid, as seen by her colleagues, and if the suggestions made in the Manual were used.

The reasons for using the questionnaire were to save time and money, as well as to permit teachers to answer all questions as freely as possible without direct influence from the researcher. The questionnaire was piloted by administering it to AGTP teachers in the researcher's home school. The questionnaire was delivered by the researcher through the inter-school mail. The teachers were asked to return the completed questionnaire within seven days. An

envelope with a coded number accompanied the survey in which the completed questionnaire was returned (also by inter-school mail) in order to alert the researcher as to who had returned his/her survey while still keeping the responses anonymous.

All respondents were informed about the nature and purpose of the study, the procedures to follow in responding to the questionnaire, the importance of the participation as well as the confidentiality of their responses, to assure their full positive cooperation in this study. These efforts were aimed at gaining a high response rate among the population. Only after the questionnaires were completed and collected, was the coding and tabulation done.

In order to systematically use data, a matrix was designed in which the respondents and the participants were entered as categorical data in the first column (see Appendix B, pages 117 & 118). Each questionnaire item that could be entered quantitatively was designed as another column in the matrix. Data that was qualitative was systematically entered onto cataloging sheets for additional examination (see Appendix B, pages 122-132).

Questionnaire Analysis

Upon receipt of the questionnaires, the information was entered into a data base of the Stat View 512+ data system. The first data base included information from all returned questionnaires. In this data base (see Appendix B pages 117-118), the categorical data (Respondents 1 - 16) were put in the first column and 9 other columns added with information which included:

- GENDER (categorical)
- YRS (years of teaching experience -real numbers)
- AGTP (years of teaching experience in the AGTP program -real numbers)
- AGE (age of the teacher - categorical)
- LEVEL (elementary, middle, or high school - categorical)
- MAJOR (academic/ categorical)
- SUBJECT (academic/categorical)

- CORT? (yes/no categorical)
- WHY/WHY NOT (categorical)

On another matrix (see Appendix B page 119), data were used for describing important quantitative information in regard to participants in the CoRT I program:

Did you like CoRT I? (yes/no categorical)
Did your students like CoRT I? (yes/no categorical)
Did low achievers score high or show unusual interest? (yes/no categorical)
Did you teach it 10 weeks? (yes/no categorical)
To how many classes did you teach the program in any given time period? (real numbers)
Were groups chosen by the teacher or student? (teacher/student categorical)
Were groups allowed to change from period to period? (yes/no categorical)
Did you test? (yes/no categorical)
Was there sufficient material? (yes/no categorical)
Do you feel that there should be in-service before CoRT I is undertaken? (yes/no categorical)
Should the program be changed to fit into a subject matter orientation? Which subject? (yes/no categorical)

These quantitative data can be important only as they apply to this study. The small sample size means that no inferences can be made to other populations. Thus, this information is <u>not</u> statistically significant.

Population of the Study

Students

By virtue of the identification process the students in the AGTP program are successful in academic areas of schooling. Identification requires an interest in the program by student, parent and/or teacher. Selection is made by teachers in the program who

each year screen applicants' requests which have been stripped of all identification. The information included is recent achievement scores, a short paragraph written by the student expressing reasons he/she wishes to be in the program and a check list included by current teachers which identify characteristics of the student in question. The first concern is achievement scores. Individuals are usually chosen whose normed achievement scores in math and reading are two grade levels above the grade in which the student is found. Teachers use ballots on which a number is the only identification for each candidate.

Students in this program are considered to be divergent thinkers. For this reason, the program is designed to foster divergent thinking through the use of Taxonomy of Educational Objectives:The Classification of Educational Goals, Handbook I: Cognitive Domain by Benjamin Bloom (Bloom, 1956). Activities are designed so that any material which is necessary to be learned on the knowledge and comprehension level is motivated by activities whose products are found at the synthesis and evaluation level. For this reason, the CoRT activities may not appear to be as innovative to AGTP students as they might to students whose daily program is more routine.

Teacher/ Colleagues

The population of this study included the teachers in the AGTP program of the mid-western school district being studied. This faculty had 41 teachers. It consisted, at the time of the study, of 26 elementary teachers in one public school; seven secondary teachers in two middle schools; and eight secondary teachers in four high schools.

In order to structure these findings, the population was divided into three strata according to their teaching levels. The stratifying variables in the sampling design were:

1. elementary school
2. middle school
3. high school

Because the sample is small, even in relation to the small population, the findings in this study should not be considered as statistical data. The use of this information is intended for the express purpose of solidifying hunches of the teacher/researcher in devising hypotheses for the use of succeeding researchers.

Instrumentation

In this study, data was collected through the use of a pre test/ post test which was suggested by the publishers of CoRT I to measure level of improvement in breadth of thinking.

Also perceptions of the experience of other teachers in using this program was collected through the use of a self-administered questionnaire designed by the researcher. There were two parts to this questionnaire: one was a series of open and closed ended questions whose intent was to elicit the demographic data from the respondents; the second part was open ended and yes/no questions designed to find from those using the treatment, their evaluation of weaknesses and strengths, as well as their specific use of the treatment. (See Appendix A, pages 112-115).

To gain additional information relative to adoption procedures, the researcher designed and administered a structured interview with the Magnet Programs Director who was responsible for the workshop in 1985 and the adoption of CoRT I at that time. A transcription of that interview can be found in Appendix B (pages 120 & 121).

Other Data Sources

In order to study other applications, the researcher turned to the literature and attended workshops in which other school districts discussed their use of CoRT. The findings of this research will be written in narrative form.

Paradigm

In order to structure the data collected, concerning abandonment of CoRT, and to organize findings in a meaningful way the researcher adopted some general hypotheses, developed by Gerald W. Marker (see Review of the Literature, page 27) against which to test her findings.

Characteristics of the Innovation

The more an innovation is perceived by its users as no longer "new" the more likely it is that the innovation will be abandoned.

The more unrealistic the users' expectations of the innovations the more likely the innovation is to be abandoned.

The less visible the pay-off from implementing an innovation, the more likely that innovation is to be abandoned.

Characteristics of the Change Strategy

Innovations are often adopted due to the efforts of a major advocate. When that person no longer promotes the innovation, the innovation is likely to be abandoned.

Users who feel a sense of ownership of an innovation will be reluctant to abandon that innovation.

Innovations originating from an inappropriate source are more likely to be abandoned than those originating from an appropriate source.

Innovations employed in a manner different from that intended by their developers are more likely to be abandoned than those which are implemented as their designers intended.

Characteristics of the School Culture

Innovations are abandoned because there are too few incentives in the culture of the school to sustain their continued use.

Summary

In Chapter III the researcher has described the methods and procedures used in this study. Because this is an interpretive analysis, the strategy has been an interaction of inductive and deductive methods.

The researcher began by using the cross-over method in the pre/post-test evaluation of CoRT I as suggested by materials in the program's teacher manual. When the post-test scores were lower than the pre-test scores, the researcher began to devise some hunches as to why this had happened.

In order to test these hunches, the researcher designed a questionnaire based on her hunches and a content analysis of the claims as stated in the teacher's manual. This questionnaire was piloted in the researcher's school among AGTP teachers, then distributed by school mail to her colleagues in other schools. Responses were returned by school mail and analyzed using matrices described on pages 54 and 55.

The population of the study are the 150 students of the researcher's social studies classes at the time of the study and the 41 teachers of the district AGTP program.

Other sources of data used in this study have been collected from the literature on curriculum innovation and abandonment, from local, state, and national workshops and conferences attended by the researcher, and from an interview with the magnet program director for the AGTP program.

Marker's paradigm was selected to establish structure for the findings of the study and to make them more meaningful in a general way.

CHAPTER IV

ANALYSIS OF THE DATA

Introduction

The literature has shown that the type of school culture into which a curricular innovation is introduced is important. Implementation procedures must identify and take into account the academic advocates, the introduction procedures, and the evaluation methods which are seen as legitimate by the classroom teacher whose job it is to adopt the innovation. For this reason, the researcher attempted to show the historical development of the magnet program whose staff was to adopt the curricular innovation under study.

Background

In 1976, a midwestern urban industrial city was charged with developing a desegregation plan for its schools. This school district was based on a Community School concept in which citizens and teachers had always had a background of individual school action for the benefit of its particular school population. To comply with the court order, the district adopted a Magnet School concept in which schools with particular design orientations would draw students from throughout the district.

One of the design orientations was the Academically Gifted and Talented Program. (AGTP). From the beginning this, and other magnet programs, had curricula which were researched and designed by the teachers who were teaching in the program. Generally speaking, AGTP teachers were those who opted to teach in this particular magnet program. The structure of the curriculum design was teacher specific and the training for staff in this relatively new area was through workshops and graduate study. As is true in

many "ground-breaking" endeavors, the program tended to be developmental in the area of curriculum.

The structure of the AGTP program at the elementary level was a magnet school with a full-time K-6 program. The staff and principal were philosophically committed to the concepts of gifted education, and the district made every effort to provide in-service for the continuing education of the staff. This included bringing in speakers and allowing release time for teachers interested in developing their philosophical base. This also allowed for expenses to travel to conferences related to the latest research in the areas of Gifted Education.

At the Middle School level, the AGTP program became two magnet programs each housed in a middle school with a regular program based on school districting. One team of four teachers was teaching the 7th and 8th grade AGTP students in the four academic areas of English, social studies, math, and science. Because the AGTP populations, in these otherwise comprehensive middle schools, were a small percentage (less than 10%) of the overall student body, the teachers and their curriculum were not the major concern of the building administrators. In other words, the administrators were not particularly interested in the specific program or curricular needs of these students.

At the high school level, AGTP became less structured and students were able to choose accelerated classes in math and science housed at Magnet school A and accelerated humanities and fine arts classes at Magnet High School B. In some cases this meant that students attended more than one high school.

In 1985 a summer workshop was instituted in an attempt to make introduction of new staff an easier task,. (This workshop was voluntary and so not all teachers in the program attended). The charge was to articulate the curriculum so that each teacher's program would build on the talents and skills developed in the preceding grades. To accomplish this the plan was to adopt the grade-specific goals prescribed for students in the regular programs, and to shorten the time to be spent on these skills (compacting the regular program) while enriching and broadening the

scope of education for the child in the gifted program. Part of the enrichment was the adoption of the CoRT (Cognitive Research Trust) Thinking Skills program (de Bono, 1973 a).

The adoption of CoRT (and other additional materials such as Philosophy for Children) had been suggested by the principal of the full-time AGTP elementary school who had spent some time the preceding summer at the Summer Infratute for Gifted Education, at the University of Connecticut. This program was suggested by Joseph Renzulli as an addition to an effective program for gifted students. It was also chosen because of its more right-brained approach to thinking, relating to the development of creative problem-solving in bright or gifted children. There was no in-service for any of the programs, but teachers of AGTP have always done their own pilots and reported findings to one another. However one lesson was demonstrated and some materials were disseminated to workshop participants. The researcher had begun graduate classes on the second day of the workshop and so received no materials and was not privy to the information regarding the use of CoRT. Because of the fact that the elementary principal had received training in the program, the elementary teachers had more support (as well as pressure) to use the program. They also had the added advantage of an advocate in the building. However, at the middle and high school levels teachers had no curriculum advocates available in the buildings.

CoRT is a program developed by Dr. Edward de Bono to teach thinking skills to people of any age and grade level, in a meta-cognitive way; that is, to think about the process involved in the activity of thinking. Each lesson follows the same format:

* introduces the process to be practiced
* gives an example of the process
* in groups has students practice the process (for five minutes)
* has students report findings arrived at, using the process
* discusses the process and explain its principles
* has students explain the principles and tell which ones they think are important or which they think can be used most effectively

Dr. de Bono's research, in the area of lateral thinking and the structure of the brain, led to his development of the CoRT series. His goal is to teach creative thinking as a skill. The success of the CoRT thinking program, according to its advocates, is its simplicity, adaptability, and flexibility.

Narrative

Upon her return from sabbatical leave, the researcher decided to follow the teachers' manual suggestion and do a pre-test/ post-test evaluation of CoRT I while teaching it to her middle school students. It was her understanding that the teaching of CoRT I was not an option but part of the prescribed AGTP program. (The researcher found later that this assumption and others she made were largely because she had missed the summer workshop described in the introduction). The program as described in the manual, because of the structure of the design and materials, required no in-service and could be taught by any teacher. Therefore the researcher's plan was to follow the manual carefully as any new teacher would, not altering its design or enhancing it in any way. The rationale behind this careful maintenance of minimum standards was to test the validity of the claim.

The fact that the researcher planned to teach CoRT I as well as to evaluate it meant that the findings would depend on the researcher's activities and her reporting of them. In this regard, every effort was made to adhere to the scholarly standards of objectivity and disinterest. Let it be said, however, that the researcher at the outset attacked the new program with enthusiasm, fully expecting and hoping for a good effect. In this respect, personal colorations would tend to be more positive than negative.

Upon introduction of the program, the students seemed enthusiastic. Students who regularly were unproductive now seemed eager to participate. One student who had reading problems and other students who had appeared to be unmotivated in other kinds of class projects became enthusiastic participants in class discussion. The researcher was convinced that at least one claim was holding true (see Claims #9 page 52).

The program required that each week for 10 weeks a separate lesson be taught for one hour to the students (see Suggestions #1 page 53). Each lesson begins with the introduction of a specific thinking skill, together with a code to trigger its use, and a group problem for discussion and use of the new skill in practice. The manual is adamant that the discussion be held to five minutes to focus on the skill rather than the subject under discussion. Also, the manual admonishes the teacher to choose the groups for discussion-to keep students from being with their friends and to guard against facetiousness (see Manual Directions for Middle School, Appendix D, page 139 &140).

As a veteran teacher, the researcher was a little suspicious about some of these structural suggestions, but since the overall reasoning behind them seemed to be important to success, she decided to follow the rules to see how the treatment would work for a novice. The researcher was responsible for teaching CoRT I to her five classes of social studies students. She began by choosing one day a week for CoRT. This meant teaching the same lesson for five hours on that day. The ideas which seemed innovative and interesting for the first time were embarrassingly trite by the fifth time in the day. The use of the codes, such as PMI, were especially disgusting after five hours. However, the code is important to trigger a particular activity (the researcher discovered after reading Lateral Thinking: Creativity, Step By Step de Bono, 1973 c), and the manual insisted on use of the codes consistently. So the researcher's attitude toward the program began to change.

However, feeling a responsibility toward finishing a program that was prescribed as a part of the "qualitatively different" AGTP program, she struggled on. In the spirit of reflexive and interpretive classroom study, she began to devise some hunches, because things were not proceeding as expected. It seemed possible that the researcher's changing attitude stemmed from having to teach the very same thing and using the same words and content-free examples five separate times in a day. The researcher's teaching style is much more reflexive than this program seemed to prescribe and she was uncomfortable operating within strictures of time,

groupings, and vocabulary that seemed required but for which she saw no reason.

As time went by, student interest waned and student complaints began to surface, at first because the students did not like being put in a group (rather then choosing it) and that they wanted to change groups. They also were very frustrated about being "cut off" just when the ideas began to get interesting (the stricture for five minutes to discuss an idea).

The students' negative reactions were blatant and on several occasions when the dittos were handed out and the CoRT I lesson announced, students in greater numbers complained. As the researcher began to realize that the treatment was becoming a chore for her students and for her, she decided to find out what the students perceived as the problem. She asked the students to write in a brief paragraph how they felt about CoRT I. It seems that students did not like being assigned to groups and staying in them week after week. Others mentioned that the program was used too often and that the subjects were not interesting. However, many felt that if they could choose their own groups, the program would improve a great deal (see Appendix C , pages 134 - 138).

Although the manual warns that allowing students to choose their own groups might make process secondary to social interaction, the researcher decided to try making this change. She also dropped the five minute limit for group deliberation so that students could get more depth and ideas into their discussions.

After having completed the ten lessons of CoRT I with her five classes of students, the researcher administered the post-test. The procedure was to give one-half of the students Number 3 question and one-half Number 4 question before teaching the ten hours of CoRT I and then switching the question given to each student for a post-test. The evaluation was based upon counting, for each student, the number of ideas expressed in each of the short essays written. To insure that all ideas were considered despite the handwriting, the name for each essay was removed and typewritten verbatim by the researcher before the evaluation proceeded (see Appendix D for questions #3 & #4, page 151).

The questions were chosen by the researcher from a list suggested by the publishers for this purpose. The specific questions were chosen because the teacher felt that the topics would be of interest to her students.

The researcher advised the students about the concept of pre- and post-testing because they could not understand why they all did not get the same question. She also wanted them to know that they were part of a research project (in compliance with requirements set down by the university).

Upon completion of the post-test, the researcher set out to accomplish the task of counting ideas to determine whether or not students had increased their breadth of ideas. The task seemed fairly straightforward but proved to be very subjective and the researcher was self-conscious about the results. She was not convinced that counting the number of ideas is a good test of creativity.

Although the findings of the pre/post-tests were disappointing (see Appendix C, page 133 for scores), because the predicted increased breadth of thinking did not seem to occur, the researcher was not convinced that the results really reflected the relative value of the CoRT plan. She also surmised that her students had shown a great deal of breadth in their ideas on the pre-test. Perhaps the AGTP program, with its emphasis on the upper areas of Bloom's Taxonomy, had already trained students in what de Bono calls breadth.

From the analysis of these data, the researcher began to wonder about other claims made by the program. Through a content analysis of the manual, the researcher identified the claims made by the program (see Methods and Procedures, page 52). The researcher also tried to determine what caused her own disenchantment with the program. Could it be that teaching the same highly structured, process-oriented program, with prescribed examples devoid of academic data, to five different classes, made the program tedious?

She had taught the treatment strictly as prescribed and found it uncomfortable to teach. She had encountered unusual resistance from her students. After analyzing her own problems with the style

as prescribed and discussing her students' complaints with them, she adjusted some of the structural ideas and finished the lessons. When she followed the prescribed pre- and post-test procedures the results appeared to be negative. What was the problem? Were her colleagues experiencing the same frustration as she?

In order to test some of her hunches, referred to as empirical assertions by Erickson (1986), the researcher designed a questionnaire to be completed by her colleagues in the AGTP program (whom she assumed had all been using CoRT I). The questionnaires asked about some of the hunches the researcher had acquired based on her experience using CoRT I:

* Did the demands of structure interfere with the natural reflexive nature of give and take in most classrooms?
    1. Five minute time limit allotted for consideration of topics
    2. Teacher chosen groups which should be kept for the whole ten week period
    3. Lessons studied once each week for ten weeks and in the order in which they appear in the manual.
    4. Using content free ideas to concentrate on process skills rather than the ideas being considered.
* Was the evaluation process being used by other teachers?
* Was there a need for in-service training both to insure that all teachers will teach the program and so that they will be familiar with the robustness of the ideas as well as the possible ways to deliver the system and still keep its integrity based on the concepts of its original design?
* Would the process skills be more effective if related to the content of the curriculum thus making it seem more important to teachers and students rather than another trendy curriculum frill?

When the questionnaires were returned the researcher began to suspect that few teachers were using CoRT.

The researcher sought in other areas to find how CoRT I was being used in other applications. At a professional conference in 1990 she attended a workshop presented by a suburban school district whose use of CoRT ranged across the whole district. This

program had incorporated some of the CoRT I trigger words and concepts into the course of study. This district had infused the skills into the content of the curriculum. It included some intensive in-service as well as expected outcomes for articulation from one grade to the next. The program was designed to use the skills as specific ways to teach concepts to which they related. However, there was no attempt to infuse all 10 of CoRT I's lessons into one year. It appeared that this application made a case for the value of the skill while completely throwing out much of the structure prescribed in the teachers' manual. Would deBono have approved?

An interview with the Coordinator for AGTP and other Magnet Programs indicated that, although CoRT is not currently being used in AGTP classrooms, the school district does not consider the early adoption of the program as a mistake. First, those teachers who used the program have a working knowledge of its strengths and weaknesses. Their experiences can be looked upon as a kind of loosely organized pilot study. Secondly, a classroom teacher and the Coordinator for AGTP have become trainers in CoRT and have designed some infusion strategies which will accommodate CoRT while addressing other issues: differing learning styles, new research on time management, and the need for a safe environment for risk-taking. This structure will help the teacher to make these concepts more easily integrated and infused into existing curriculum. This idea of structures with meaning, rather than programmed learning, enhances teacher ownership for use of curriculum innovation.

Another strategy used by the researcher was to read more about deBono and what he said his program was meant to accomplish. Upon reading some materials written by deBono, the researcher began to surmise that there might be a discontinuity between the basic concepts that deBono was advocating and the structure prescribed by the publishers of CoRT I. The first book the researcher read, written by deBono, was a history of inventions entitled Eureka: An Illustrated History of Inventions from the Wheel to the Computer. (de Bono, 1974) This book demonstrates deBono's interest in the idea of creativity and its role in invention through history. In

Lateral Thinking: Creativity Step by Step, (de Bono, 1973, c) de Bono says that thinking becomes such a matter of pattern that the creative thinker must make a habit of perceiving problems or ideas from many different angles. Therefore, the use of the code terms, that were so objectionable to the researcher, are necessary to trigger behaviors that will bring about a variety of perceptions to test against alternative solutions

DeBono has designed several different programs which use the trigger approach to induce thinkers to use a specific structure to insure perceptual variety in attacking a problem. In CoRT I the approach is to use the following:

* PMI (Plus, Minus, and Interesting)
* CAF (Consider All Factors)
* RULES These are operations in which students practice PMI and CAF in designing rules.
* C&S (Consequence and Sequence)
* AGO (Aims, Goals, and Objectives)
* PLANNING This gives the student an opportunity to practice C&S, and AGO. as well as PMI and CAF.
* FIP (First Important Priorities)
* APC (Alternatives, Possibilities and Choice)
* DECISIONS This is an attempt to bring together the last two lessons, in particular (FIP and APC), and also other lessons in a more general way.
* OPV (Other Points of View)

In another one of his programs, deBono more simply suggests, in making a decision, a person "wear several different hats":

White hat = information
Red hat = feelings
Black hat = logical negative
Yellow hat = logical positive
Green hat = creative
Blue hat = process control

In Masterthinker, a tape program designed for executives, deBono uses the analogy of the "skeleton" and "fleshing out" the ideas as the need arises.

In still another program published by the Perfection Form Company, deBono uses visual shapes in a program called Think, Note, Write to help people who are more random thinkers, to write ideas in differing shaped boxes to organize thoughts. This is an alternative organizational device for people who find outlines insufficient or at least not useful.

The researcher also attended a lecture given by Edward de Bono at the National Association for Gifted Children. Some relevant remarks that he made changed her perception of what his expectations of his research and programs should achieve. He related that the only true evaluation of how creativity has improved is to see to what degree people have improved their ability to tackle and solve their problems. In discussing CoRT, he specifically said that the beauty of the program is its flexibility and the fact that individual components can be used alone or in conjunction with other parts.

It became clear that this gentleman, who sat at an overhead projector drawing diagrams and pictures during the whole presentation, would never have demanded the structure to teach thinking skills that the teacher/researcher perceived to be prescribed by the CoRT I Teachers' Manual.

The next step was to find a design which could structure the data collected in this study. The researcher decided to use Gerald Marker's (Marker 1980) study concerning innovation abandonment as "a lens" through which to inspect the data.

It is necessary to insert here some information which might enlighten the observer as to one of the reasons the researcher felt so frustrated. She had attended only the first day of the workshop where CoRT was introduced. (She had to leave the next day to embark on her post-masters work.) While cleaning out a file drawer in her classroom, the researcher found some notes given to participants in the workshop. This material had been left in her room by the teacher who had been her replacement during her

sabbatical leave. Although this material did not give help in how to teach CoRT, it was revealing in that it incorporated the program into an overall plan for teaching what Joseph Renzulli calls Type II strategies (see Appendix D pages 141-150). If the researcher had been part of the workshop, she probably would have been less structured in her use of CoRT.

Discussion

Using the research of Gerald Marker (1980) and his eight hypotheses based on the literature of innovation abandonment, the researcher determined the following:

Characteristics of the Innovation

The innovation which Marker studied was textbook based. In the researcher's study the innovation, was not even district-wide - much less a program adopted for a whole state. What is more, this innovation was not formally adopted and made mandatory by any group or institution. In this respect, the issue of adoption and implementation is not really parallel to Marker's findings.

Hypothesis #1

> The more an innovation is perceived by its users as no longer "new" the more likely it is that the innovation will be abandoned. (REJECTED)

Based on the characteristics of the innovation, there is little indication that the issue of the fact that a "new" idea had become old was a consideration. Indeed, there is evidence that many of the AGTP teachers never adopted the program at all; so that the issue here is one, not of abandonment, but rather of never having accepted the adoption. According to the Magnet Program Director, probably only about one-fourth of the AGTP staff ever used the program (see Appendix B pages 120 & 121). Her assessment would be fairly accurate in that the only way material was available to the teacher

was by distribution through her office. This fact is further borne out by the poor response to the questionnaire which may indicate that people were not familiar with the program in the slightest way. Further, there was no mention by any questionnaire respondents that the "newness" had worn off. Only the researcher expressed any feeling of boredom and that was more a measure of repetition (teaching it five times per day) than having any reference to the program being out-of-date. As in Marker's study, the reason for adopting CoRT was a perceived need for change. The fact that the program was "new" was of no concern. The researcher's attitude about a repeated use of a too-structured program's being boring was also voiced by a teacher in Marker's study.

Hypothesis #2

> The more unrealistic the users' expectations of the innovation the more likely the innovation is to be abandoned. (ACCEPTED)

Of all those who reported using CoRT I, the researcher was the only teacher who tested the results. It appears that she was the only one who expected the program to be so successful that a pre/post-test would show higher scores after it had been taught. She systematically pre/post-tested her students. Not only did the scores not increase after the treatment; but, in fact, they decreased rather dramatically (see Appendix C, page 133). Since the procedure used for testing was prescribed, and carefully followed, the researcher was not only shocked but also began to question her use of the program.

The researcher was the only teacher who followed the Teacher Manual directions so closely. Obviously, her expectations were that without any changes, the program would be very successful. However, not only did the students not show the anticipated interest but also the teacher, either because of not making adaptations to the material or because of the fact she taught CoRT I to five different classes, became terrifically bored with the program herself.

It appears that other teachers saw CoRT I as a supplemental structure which could be used in many contexts. Elementary teachers, who enthusiastically endorsed the program, spoke about integrating the CoRT procedures into subject materials. One of the high school teachers discussed her use of CoRT in relation to only one of the lessons and found its function a valuable and more structured alternative to "brainstorming" (see Appendix B page 124). Dr. deBono himself seems to be agreeing with this assessment in his many interpretations of how thinking can become more systematic yet more creative. The strategy he advocates for improving creative problem-solving is one which will encourage people to adopt new ways of perceiving situations.

In this study the Middle School teachers seemed to be the most disenchanted. The researcher's students, who were asked to do CoRT once a week, loudly complained after perhaps two sessions. These were students who were usually enthusiastic about role-playing and group decision-making. The researcher felt that the subjects used for skill development were not relevant enough to warrant the use of time, given the lack of commitment by the students. The other Middle School teacher felt that there were other structures that she used (especially Michigan Future Problem Solving) which accomplished the same aims and were more product-oriented (see Appendix B, page 123).

Those who did not expect the program to be structured and ongoing across the grade 3-12 spectrum, are still using segments of it in their program. These teachers seemed to value specific skills such as "opportunities for debate", "generation of class discussion",and a "systematic approach to brain-storming" (see Appendix B, page 124).

As with the findings of Marker, the most disenchanted of the users listed lack of student interest as the biggest reason for abandonment.

Hypothesis #3

> The less visible the pay-off from implementing an innovation, the more likely that innovation is to be abandoned. (ACCEPTED)

The issue here does not appear to be so much the pay-off as characterized by recognition, evaluation, or remuneration. In this context, the hypothesis appears to be supported in the fact that the staunchest backers and the most consistent users of CoRT I were elementary teachers. The fact that their principal had been the advocate of the program in the first place and that he had been trained in CoRT indicates that the teachers would not only have recognition for the use of CoRT, but also that they had an available mentor and peer coach for those times when the program ran into snags or needed additional explanation. It also may explain why their more unstructured use of the program seems to fit with the original intent of deBono.

Another issue is the fact that all of the elementary teachers reported that their students "liked" the program. The issue here is that teachers consider the apparent usefulness of the program to their students as important visible pay-off to the teacher. For those teachers whose students (perhaps because of their use of the program) liked the program, it is still being used in an informal way.

On the other hand, those who abandoned CoRT were those teachers (like the researcher) whose students did not like it and who gained no recognition from using nor stigma from dropping it.

Characteristics of the Change Strategy

The change strategy in this study also differed from that of Marker's study. Although all AGTP teachers were not involved in adopting CoRT, they all were invited to do so.

Hypothesis #4

> Innovations are often adopted due to the efforts of a major advocate. When that person no longer promotes the innovation, the innovation is likely to be abandoned. (ACCEPTED)

The primary advocate of the CoRT program at the time of the adoption was the AGTP elementary principal. He had been the person who was first trained in the use of CoRT and brought the materials to the 1985 workshop. He was a source of help in his own school as a peer coach. His school was the only one in which the administrator was a leader in the area of Gifted Education in the school district. His availability in the elementary building may be the explanation for why CoRT seemed to be more successful there than in any of the other sites. The elementary teachers in his building enthusiastically adopted and used the program. Questionnaire data shows that many still use the program and in fact have moved on to some of the higher levels of the program (see Appendix B, page 122).

Hypothesis #5

> Users who feel a sense of ownership of an innovation will be reluctant to abandon that innovation. (ACCEPTED)

Because there was no specific in-service to introduce this program, one can argue that the issue here is not one of abandonment but rather one of no adoption in the first place. Of the 41 questionnaires sent out only 16 were returned and of those six reported having used CoRT. This data could be considered to suggest poor response on the questionnaire or a poor adoption rate. The fact that few teachers picked up the materials from the central office indicates that the latter might be true (see Appendix B, page 120 & 121).

Some teachers still using parts of the program are those who have integrated segments of it into their process skills. It is not considered an add-on. Those who valued the program the most were

those who used the program in more adaptive ways that worked better in their classrooms. This sense of ownership through adaptation was certainly a factor in their retention of CoRT concepts.

The researcher, who felt bound to follow the CoRT program as characterized by the Teachers' Manual, did nothing, by design, to adapt CoRT to her students' learning styles. She also hesitated to make changes that she was not sure would be in keeping with the research. The researcher found that, although there was no formal in-service at the workshop in 1985, there was a brief demonstration of one segment of CoRT. This explains the response of the high school teacher who used only the PMI portion of CoRT (see Appendix B page 127). This demonstration evidently conveyed the more relaxed use of concepts so that those present were more confident in their adaptations of the program than was the researcher. Further, both teachers and administrator at the elementary level have internalized CoRT concepts to the degree that they are able to speak philosophically of its use and find it easy to integrate it into many different orientations (see Appendix B page 122)

Hypothesis #6

> Innovations originating from an inappropriate source are more likely to be abandoned than those originating from an appropriate source. (REJECTED)

In Marker's citations from the literature, there seems to be a feeling that innovations are often introduced by administrators rather than from the practitioners. Marker found in his study that this is not true and it was equally untrue in the introduction of CoRT. CoRT was certainly not mandated by central administration. In this case the need was felt by some, perhaps not all, of the AGTP teachers for a more specific design for enrichment activities and CoRT seemed to fit the bill. The advocate of the program at the University of Connecticut, Joseph Renzulli, is generally regarded as knowledgeable in the design of effective gifted education programs.

The principal/advocate from the school district is looked upon by teachers at every level of the AGTP program as a curriculum leader rather than a political type administrator. In AGTP curriculum meetings, all ideas are subject to discussion and most curriculum decisions made are decided by members of the AGTP Steering Committee comprised primarily of AGTP teachers.

Hypothesis #7

> Innovations employed in a manner different from that intended by their developers are more likely to be abandoned than those which are implemented as their designers intended.(ACCEPTED)

Implementation "as the designer intended", according to the manual meant: one hour per week, for ten consecutive weeks; using permanent groups of students, and pre/post testing results. However, teacher manual directions for elementary, middle and high school teachers were different. Issues of control seemed to be of great importance in the directions for middle school students (see Appendix D pages 139 &140).

Two of the six teachers (other than the researcher) were using CoRT I one hour per week for ten weeks. One was an elementary teacher and the other a high school teacher. In each case, however, they eventually changed from this pattern. Two of the six teachers kept permanent groups. Although three of the teachers chose the groups for their students, only one of the teachers who kept permanent groups chose the groups herself. Only one of the six participant teachers tested the results through the use of pencil test and this was done before the end of the program and so does not constitute a true pre/post-test (see Appendix B pages 129).

Most of the AGTP teachers who used the program changed it in several ways to fit it into their schedules. These teachers were the ones who also were the most enthusiastic about the program (see Appendix B pages 126-129). The researcher found that the main complaints that her students had with CoRT (see Appendix C pages 134-139) centered on the several prescriptions that accompanied

CoRT I. The students thought that doing the program once every week was too often; they found the subjects uninteresting; they vehemently objected to staying in groups with the same people (especially with groups of people chosen by the teacher) and the pre/post-test evaluation showed that the expected improvement did not occur.

Questionnaire data shows that all teachers still using the program are committed to the spirit rather than the structure of the program. These are the teachers who integrate the skills into their program rather than following them sequentially, and they also are the elementary teachers whose principal served for several years as a mentor and peer coach in their building. Unlike some of the others who have stopped using the program because its lack of articulation from grades 3-12 has interfered with the structure of its influence (see Appendix B, page 130), they continue to use the parts they find valuable.

In these respects the claims made that the value of this program may be retained only if systematically taught in a short period of time, with emphasis on the process devoid of academic material, seems to have missed the mark, at least in this particular context.

The issue of proper use is one which the researcher never intended to have to address. Her careful adherence to rules put forth by the Teachers' Manual were specifically designed to avoid this issue. However, it appears in talking to people who are trained in the use of CoRT, such as the Magnet Program Director, and indeed in listening to Dr. deBono himself, that the researcher was much too structured and uncreative in her use of the program. In trying to evaluate her use of the program, the researcher finds that suggestions made by the manual were taken too seriously and followed too closely. It is not at all inconceivable that if she had known more about the philosophy behind CoRT (or been able to attend the workshop in 1985) that the researcher would have used its precepts in different and more successful ways.

Characteristics of the School Culture

One must be careful in making generalizations concerning school cultures. Public school districts are not all alike and each school culture changes with the changing of its personnel. The researcher believes that large school districts with declining student populations have more of an incentive to be innovative than some others.

Hypothesis #8

> Innovations are abandoned because there are too few incentives in the culture of the school to sustain their continued use. (ACCEPTED)

The culture of the AGTP teacher is unique even in the school district in which it is found. Although AGTP teachers are expected to teach the curriculum prescribed by the school district at large, they are also committed to using other materials to enhance the creativity of their students. There was no in-service for these AGTP teachers in the use of CoRT. Perhaps, because of this, teachers in the AGTP magnet felt that the program was never adopted. This attitude was no doubt strengthened by the fact that materials were not delivered to classrooms but were picked up by the teachers at the Administration Building. The lack of evaluation concerning the program meant that there were no external reasons for feeling required to teach the program. The lack of peer coaching and mentoring meant that any time a teacher ran into a snag of some sort, the inclination to abandon the program became more appealing. The lack of universal use by all levels of the AGTP program furnished further disinclination to retain the program especially if it held no positive educational reason for retention.

Lack of incentive (in the form of improved student achievement) is the one cause most often mentioned on the Teachers' Questionnaires for abandonment of the CoRT program. Both the researcher and her students were enthusiastic about the program at its inception. Students were excited about spending time discussing

ideas with no need for the arduous task of inputting information (reading, listening to a lecture, gathering data). The fact that every student was not taught CoRT I in the first year of adoption meant that incorporation of the ensuing programs were not applicable. Also, the lack of in-service training was considered by most respondents to be a weakness of the program (see Appendix B page 131) . This seemed to be less true in the elementary school where the advocate was the principal, for teachers there reported on how they reacted to CoRT I - III (see Appendix B, page 122).

In elementary schools, teachers of any academic subject might use CoRT. In the middle and high schools the teachers using CoRT tended to be language arts and social studies teachers. Because of school structure, middle and high schools were teaching one subject to all students. This meant that five times a day some teachers taught this new program unless some attempt was made to organize the program in a different way. The incentive at the elementary school, of course, was the advocate himself. In other settings, not only were administrators unfamiliar with CoRT but, what is more pertinent, were more concerned with the issues of discipline and safety than with that of curriculum concerns (especially those for whom a small portion of their student population were AGTP, a group which most consider to be able to "survive" no matter what the curriculum provides).

In some other school districts where district-wide in-service and integration were used to infuse CoRT into the existing curriculum, the program has become more successful (see Narrative page 67 & 68).

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study was undertaken primarily to determine why a particular well-known thinking skill program did not work in the classroom of a veteran teacher. Her expectations were high and she believed that by carefully following the teacher manual, there would be a positive outcome. Because she felt that the innovation would show measurably that her students had improved in breadth of ideas, she gave a pre-test before teaching it.

The teacher's manual made the teaching very easy because it provided not only the concepts to be taught, but also examples to use, and structures to be followed. The researcher at first found the concepts and materials fascinating but soon she, as well as her students, became disenchanted with the structures and the examples. After ten weeks had passed, the researcher gave the post-tests. The scores not only were not higher, they were in fact markedly lower. This came as a shock to the researcher and she determined that the program was a failure in her classroom. She decided to find out what went wrong.

In talking with some of her AGTP colleagues concerning CoRT, she found that her concept of what the program was supposed to accomplish did not coincide with that of others. To formalize this information, she designed a questionnaire and sent it to all AGTP teachers. When she received the sixteen out of forty-one responses, she found that everyone in the AGTP curriculum had not adopted CoRT. Some who had adopted it were no longer using it, and those who were using it now were using it, not as a specific program, but rather were infusing its skills into specific areas of the curriculum.

The researcher's reading of deBono's writings, the program's author, convinced her that his design was meant to be creative and unstructured. His writings and philosophy indicate that breaking out

of old structures and perceiving things in new patterns are essential for finding creative solutions to problems.

The researcher interviewed the Magnet Program Director and she confirmed the suspicions of the researcher: that the use of CoRT was meant to be much less formal than the researcher had understood; that the program was not adopted or mandated, but rather suggested as one of the ways to teach thinking skills; that many of the AGTP teachers chose to not use the materials; and that no extensive in-service was held because the use of CoRT was looked upon as a pilot whose findings could determine its strengths, weaknesses and adaptability. The researcher's misperceptions of all these facts had been caused by her lack of attendance at the 1985 workshop. In this case a little information was dangerous, she was aware of the program but understood little else about it.

This information and the questionnaire data helped the researcher to test the hypotheses borrowed from Marker (1980).

Hypothesis #1

> The more an innovation is perceived by its users as no longer "new" the more likely it is that the innovation will be abandoned.

CoRT was not abandoned because it was no longer "new". This was not a consideration of any of those interviewed or responding to the questionnaire. The survey questionnaire data would indicate that perhaps the innovation could not be considered abandoned, because it was not truly adopted by the majority of the AGTP teachers. As was pointed out by the poor response to the questionnaire and the information from the Magnet Program Director, probably not more than one-fourth of the AGTP teachers checked out materials from the central office. There was no stigma attached to not using the program. It was meant to be voluntary.

Hypothesis #2

> The more unrealistic the users' expectations of the innovations the more likely the innovation is to be abandoned.

Those who abandoned CoRT found that it did not live up to their expectations. The researcher, not only found the program tedious to teach, in the structure she thought was prescribed, but also, the students did not like the program and the test results were very disappointing. Her expectations, for an efficient, interesting program which helped students to think more creatively, were not met.

The researcher expected to be able to, through the pre/post-test, find a marked improvement in the amount of ideas by each student on a given topic. The material in the teacher's manual gave data from other school districts throughout the world where such measurable improvement had been noted. There were even some sample graphs of just how much improvement had taken place. There were also articles lauding the program for its use in corporate applications in many business magazines (although these were noted by the researcher as she carried on her study after the failure of the program in her classroom).

Hypothesis #3

> The less visible the pay-off from implementing an innovation, the more likely that innovation is to be abandoned.

The issue of lack of pay-off is closely linked with teacher expectations, since the biggest pay-offs for teachers are the visible improvement in their students performance and interest. The researcher would have been willing to continue teaching the program had it lived up to her expectations. Other secondary teachers felt there was not enough visible pay-off, in viable products to make the time spent worthwhile.

In the absence of student improvement it is hard to imagine what kinds of pay-off could entice teachers to continue using a

program. However, without visible signs of improvement in terms of some sort of evaluation device, the pay-off, no matter what it is, will not be conferred.

Hypothesis #4

> Innovations are often adopted due to the efforts of a major advocate. When that person no longer promotes the innovation, the innovation is likely to be abandoned.

The major advocate for CoRT was the principal of the elementary school which housed only students in the AGTP program. He had been involved in designing the AGTP magnet in the beginning and was the only building administrator whose entire student body was AGTP. For this reason, his curricular concerns were very focused. In the summer before the workshop where CoRT was introduced, he had attended a program sponsored by the University of Connecticut and Joseph Renzulli. He advocated the use of CoRT in the AGTP magnets and had expertise in the use of CoRT as Renzulli advocated it. His presence in the elementary school may have contributed to the fact that the most extensive and correct use of the program seemed to have occurred at that level.

At other levels, the AGTP program was housed in a comprehensive school where their students were only a small part of the population; and AGTP classroom teachers were the persons determining their curriculum. There was no incentive for these teachers to adopt CoRT other than their own motivation (if they had attended the voluntary workshop). There was no mentor nor peer coach in these secondary buildings. These secondary teachers were the ones who abandoned their use of CoRT.

Hypothesis #5

> Users who feel a sense of ownership of an innovation will be reluctant to abandon that innovation.

The presence of the principal/advocate in the elementary school encouraged teachers to use the program in the more unstructured way that was actually advocated by Renzulli. When the researcher began to trace the history of CoRT and its underlying philosophy, this advocate was the person to whom she was referred for information and data. He was able to discuss the program philosophically and took the researcher to several different classrooms where he discussed the use of CoRT and other structures that were at use there. The researcher was impressed that the principal could comfortably walk into a classroom with a visitor and know what the philosophy was behind each activity that was occurring. The researcher believed that the reason that this could happen was because the principal was acting as a peer coach, and that the staff as a whole had devised strategies with which they could utilize the concepts of CoRT. The questionnaire data bore out the fact that elementary teachers were able to successfully use the program and felt comfortable to discuss, not only its use, but also its philosophy. In short, they had ownership in the innovation.

Those who integrated the process skills of CoRT into their program continued to use its precepts. By making thinking skills part of the structure used to implement other important skills, the classroom teacher did not think of CoRT as an add-on, but rather as a valuable tool for accomplishing other goals. Those who are still using CoRT are using it in this more developmental way. Those who abandoned CoRT had no ownership in the innovation.

Hypothesis #6

> Innovations originating from an inappropriate source are more likely to be abandoned than those originating from an appropriate source.

The literature did not suggest what generally might be considered an appropriate source for the origin of an innovation. However, in this study the suggested use of CoRT by the principal of the elementary school and by Joseph Renzulli made the innovation seem legitimate for the researcher and probably for most of the other teachers to accept. Both of these men are generally

considered knowledgeable in the area of curriculum for gifted education.

Hypothesis #7

> Innovations employed in a manner different from that intended by their developers are more likely to be abandoned than those which are implemented as their designers intended.

The use by the researcher of CoRT was not what the developer intended. Her use was not adaptive and followed too closely the teacher manual directions. Her misinterpretation of the philosophy behind CoRT stemmed partly from the fact that she had not been present at the workshop where overall use of the program had been discussed and demonstrated. The fact that no peer coach was available at the building level compounded the problem. Her feeling of frustration and failure led her to discontinue use of CoRT.

Hypothesis #8

> Innovations are abandoned because there are too few incentives in the culture of the school to sustain their continued use.

The researcher abandoned the use of CoRT in her classroom even though she could see that it had some worth. The lack of in-service or a peer coach to give advice made her reticent to adapt the program to fit in with the philosophy of her overall curriculum. Also the housing of AGTP in a comprehensive middle school meant that her specific academic goals were not necessarily shared by her colleagues not in AGTP nor by her building administrators. In short the disincentives out-weighed the incentives to continue the program.

The strategy for introducing CoRT in this study should probably not be equated with the implementation of a district-wide or state-wide adoption of a text-based curriculum. The program was not mandated. The materials were not assigned to everyone, but rather interested teachers could pick up the materials from the Magnet

Program Director. Those who took part in the summer workshop held in 1985, were given a short demonstration of the program as well as some strategies for fitting it into the overall AGTP philosophy. In this respect this use of CoRT could be considered a loosely organized pilot of the material. If the structure of CoRT had been the main concern of the school district, rather than the essence, there might have been need for evaluation of the program to ensure the articulation of CoRT I - X. However, it appears that the district plan for CoRT was to offer many choices to AGTP students in the area of thinking skills (see Appendix D, pages 141-150). This strategy appears to have been designed to empower AGTP students to use divergent means for developing valuable solutions to real problems.

Conclusions

This study has led the researcher to three major conclusions:

1. The researcher's use of CoRT was unsuccessful because it was not what the designer intended.
2. CoRT may still be valuable in the AGTP program if an effective plan for in-service is adopted.
3. The general findings concerning the abandonment of the CoRT program tends to support some of the findings of Gerald Marker's (1980) study on abandonment of curriculum innovations.

Conclusion # 1 The Researcher's Unsuccessful Use of CoRT

The researcher's use of the CoRT program was not what the Renzulli concept prescribed nor was it really what deBono had in mind. Like other programs used in the AGTP program, CoRT was meant to be a means for empowering students to design useful products. As a coach, the AGTP teacher's role is to help students solve real problems by providing them with the appropriate tools. Therefore, the teacher's role in CoRT should be to discuss the

particular concept to be used at the time it is needed for accomplishing a legitimate task. If the researcher had not followed the teacher's manual so closely, this would probably have been her strategy for use of the innovation. This realization leads to the issue that can be addressed by the school district or at least by those responsible for the AGTP curriculum.

Conclusion #2 The Value of the Innovation for Future AGTP Curricula

The researcher can see real value in the CoRT program if the philosophy for infusing it into AGTP classrooms is made clear. Designing the meaningful use of the concepts inherent in CoRT requires of the teacher not only a framework for the desired academic accomplishments and products but also the internalization of the use of the concepts themselves. For this reason, the AGTP staff should be given in-service training in the correct use of CoRT. The overall philosophy should be discussed, and it should be made plain that each strategy is independent and should be used as it is needed. The manual is particularly faulty in this respect because it stresses the sequence of the skills rather than the importance of using them when the need arises.

The strategy suggested by the researcher is simple. A demonstration of the use of one of the skills in a meaningful curriculum context would excite the teachers and convince them that it would be worth the risk to try one of the skills. When the teachers are "hooked", some release-time should be scheduled for teachers to infuse the concepts into their regular programs. After they have tried the new idea in their classrooms, another meeting should be used for sharing of ideas and peer coaching to aid any who seem to have had a problem or to give a forum to someone who has had an extraordinary success.

Conclusion # 3 This Study's Findings and Those of Marker

The researcher finds it easier to report events than to generalize or categorize them into neat packages. She discovered that causes for abandonment seem to compound and are difficult to state categorically. Because of this and the difference in the sample size and the style of research used by the researcher and Marker, it is difficult to equate the conclusions between the two studies. The researcher's data are qualitative, while Marker's are quantitative.

It appears that the findings of the researcher can support those of Marker's 1980 study regarding: Hypotheses #1; #2; #4; #6; and #7.

#1. Both studies agree that the fact that the innovation was no longer "new" was not a factor in its abandonment.

#2. Abandonment was a product of unrealistic expectations on the part of the classroom teacher. In Marker's study the classroom teachers abandoned the innovation because they had expected it to be high in interest and improve their students' ability to use the inquiry method. When the program proved to be too complex for their students, because of their declining reading ability and lack of interest, the teachers abandoned the program.

The researcher found that the teachers who expected to display positive test results, (the researcher) and to see the adoption result in the articulation, grades 3 - 12 of CoRT I - X (a high school respondent), were those who abandoned the innovation. These teachers expected CoRT to be structured and mandated throughout the AGTP program. What is more important, it didn't interest their students as expected.

#4. A major advocate for a program makes it successful. In Marker's study the major advocates referred to were teachers who had been trained in the innovation and enthusiastically used it throughout their program. When these teachers left, those who

replaced them either were not familiar with or at least were not committed to the program. In the current study, the advocate was a building administrator whose coaching and collaboration helped the elementary teachers in his building adopt the appropriate process attitude which made their use of the innovation successful in that venue. Secondary teachers who had no building advocate, adopted the programmed learning approach suggested by the teacher's manual and thus abandoned the innovation because it proved unsuccessful.

#6. Both studies rejected the idea that an innovation is abandoned because it originated from an inappropriate source. In the case of Marker's study, the source of the innovation was the text book whose structure was the inquiry method. The source of the text book adoption was not mentioned in the study, but it would have to be approved by the local school board. There was no mention of the fact that teachers felt that the adoption was in any way inappropriate; and in fact these teachers were not actually abandoning a program, but rather, when given a choice of a new text book, opted for one without the inquiry method as its structure.

In the CoRT study, the source of the innovation was accepted as valid by the researcher, and there was no mention made in questionnaires that the source of the innovation was inappropriate. Generally the principal/advocate of the elementary school, who recommended the innovation, was regarded as a pioneer in the AGTP program and his judgment and ideas were sought by all those involved in gifted education in the district.

#7. When the teacher's use of the program is implemented as it was designed to be used, it is more useful and successful. Marker's study found that those who sought to abandon the inquiry-based text book felt that the use of that method of teaching was not effective in their classroom, because of the lack of interest and the declining reading ability of their students. As a result, many of these teachers had altered their program to leave out the inquiry and case study components. This seriously altered the program.

In the CoRT study, the issue of improper use of the innovation is linked to the fact that there was no in-service and no building advocate to insure fidelity in the use of the innovation. Those who abandoned the innovation and felt it was unsuccessful were those who used it improperly, expected that it would have measured positive results, and that it would be articulated throughout the curriculum.

There were, however, some hypotheses on which the findings of the two studies did not agree. These were Hypotheses #3; #5 and #8.

#3. Innovations are abandoned when the pay-off is less visible. Marker rejected this hypothesis on the basis that although no one remembers any kind of evaluation of the innovation, which would visibly record its worth, teachers reported that they knew that the program was valuable; they just couldn't prove it. Also, no one mentioned that they were abandoning the program because there was no pay-off to teaching it. For these reasons Marker rejected the hypothesis.

The researcher's evaluation of this issue may be faulty; but since the literature refers to the fact that the most important pay-off for the teacher is the improvement and interest of his/her students (see Review of the Literature page 30), the loss of those two factors can be a very real motivation for abandoning the innovation. Also, when there is no evaluation based on the use of an innovation, when its use seems to be unsuccessful in terms of expected results, and when there is no advocate to answer questions or give praise or advice as to the use of an innovation, there are no visible pay-offs and the innovation will probably be abandoned. These were the personal experience and feelings of the teacher/researcher in the study.

#5 The teacher will be less apt to abandon an innovation if he/she feels a sense of ownership. Marker's study showed that ownership was not a powerful force for or against abandonment. However, those who were abandoning the innovation felt that they

had had no part in the initial adoption of the program and felt no compulsion to continue using it. This was true even though they had had to make some modifications to the program and so had some sense of ownership.

The researcher's findings show that those who felt confident enough to make modifications to accommodate their classroom situations were the ones who found CoRT most successful. Even now, there are elementary teachers who are using segments of the program to enhance thinking skills in their classroom. One of the elementary teachers has become a trainer in the program and is assisting the Magnet Program Director in doing workshops on CoRT. This is an extreme example of the fact that ownership in an innovation means less likelihood of abandonment.

8 Abandonment can be caused by too few incentives in the culture of the school to keep an innovation. Marker's study rejects this hypothesis, reporting that in his study the incentives for trying a new curriculum range from a public "pat on the back", travel to another school district or to professional conferences for department heads and administrative respondents, to "none" for teachers. He also points to the Q-sort cards which indicate almost a split between those respondents who believe that innovation is encouraged and those who believed that it is not. He reported that none of his respondents seemed to mind that incentives are few.

In discussing this issue, the researcher believes that interpretive data is valuable. The researcher herself can identify with the real frustration involved when a teacher fervently wants an innovation to succeed and it apparently does not. The issue of incentives here is real. It deals with the need for psychological reinforcement as well as basic philosophy. Even in the absence of an advocate to help strengthen the structure of the program, the presence of a coach who knows you are taking a risk and cheers you on is valuable. Those programs which are supported by materials, an advocate, and moral support are those which survive. Only the teacher who tries a new program which subsequently fails can know

the feeling of frustration when there seems to be no solution for his/her feeling of helplessness.

It appears, then, that if an innovative program is to escape abandonment, the change agent should attempt to address these issues:

Regarding Innovation

* making clear what users can expect as outcomes of using the innovation.
* providing the user with indicators with which to easily evaluate student success.

Regarding the Change Strategy

* providing an easily accessible advocate whose motivation and expertise can shore up the user in times of temporary setbacks.
* allowing time and personnel to design materials which are in keeping with the spirit of the innovation and the clientele of the classroom.
* including the user in the decision of whether or not to adopt the program in the first place.
* providing background and research information to ensure that use of the innovation is faithful to the intent of its designer.

Regarding the School Culture

* being sure that those who truly adopt the innovation are not held accountable personally if the expected outcomes are not realized immediately.

Recommendations For School Districts

The findings of this study suggest that districts wishing to introduce successful innovations into the curriculum consider developing a generic structure ahead of time which includes the following steps:

1. The first strategy is to introduce the innovation to teachers before adopting it. This introduction would explain the research behind the program in an effort to convince the teachers that it is something that will enhance their students' productivity. This activity should also, at the outset, explain to the teacher what should be expected of the program so that the issue of failed expectations will not have to be addressed later.

2. Next, give teachers who have attended the introductory meeting an opportunity to volunteer to pilot the program. Along with this opportunity, some incentives could be given to reward the teacher for being willing to take the risk of trying the innovation. The incentives could be release-time to help develop supplemental materials or a role in staff development if the program is adopted.

3. Third, give the teaching staff involved a say in whether or not the innovation is adopted. This may seem risky for those who advocate a strict organizational pattern; but if the teacher is expected to be serious about teaching an innovation, he/she should be required to make a commitment and that usually means choosing to adopt the procedure.

4. The next step is to institute the actual in-service. This means introduction of the materials to all those who will be using them, demonstrating the use of the materials, and discussion of new roles that may be a part of the innovation. It also means having a plan for future meetings to discuss successes and failures.

5. Structures should be put in place to address the psychological reinforcement issues which will surely occur. Ideally, there should be a facilitator in each building whose role it is to clarify the research philosophy, disseminate materials, and provide feedback services as well as psychological support. If this is not possible, there should be specific structure in place which allows those who have problems to get help immediately and without any stigma attached to the request. This structure is in addition to the periodic in-service feedback sessions.

6. Time and staff should be provided to give teachers a chance to design supplemental material and to share problems and successes with their peers.

7. If the innovation requires new relationships between students and teachers, building evaluators should be aware of the new expectations in the classrooms, especially if it is a change from formerly recognized norms (e.g. everyone is quiet and working on the same thing at the same time.)

Recommendations For Further Study

1. Some of the findings revealed in this study underscore the need for further study of curricular innovation. One of the considerations for innovation abandonment was identified as whether the teacher believes that the innovation has originated from a legitimate source. However, this study does not reveal which sources meet this criterion. Do teachers always rule out central administrators as legitimate sources of innovation? Are they more apt to adopt innovations suggested by professional organizations, university researchers, or teaching peers? This is an issue that may need further study.
2. There may also be a need for study concerning the extent to which the cultural climate of school districts enhances or detracts from the willingness of teachers to take risks. Adopting an innovation, especially one which changes the relationship between teacher and learner, requires that the teacher take a big risk. Innovations may be easier to introduce in a setting where teachers are encouraged to try new ideas because they feel confident that they will be helped when they run into a snag and that evaluation of the program will be postponed until it is running smoothly.

However it would be valuable to determine the impact of introducing a new program which is never evaluated. The proof that an innovation has improved education for the student and the fact that the district is serious about the adoption are two reasons for believing that evaluation is critical.

3. Related to the climate of school culture is the issue of incentives. The public school culture has been characterized as slow to accept change because of its veritable monopoly on educational services, its vulnerability to public pressure and the quasi-

professional status of its teachers. Its weak system of sanctions and rewards where the pay system is geared to seniority rather than merit is ..."scarcely a climate for risk-taking and experimentation or responsiveness to consumers" (Boyd, 1979).

Research could explore incentives such as: merit pay, graduated teaching roles, mandatory paid in-service, and release-time for curriculum development; to determine if such incentives would improve responsiveness to change. Research could also be done to determine if change is more apt to occur in districts where school populations are declining and where private schools are competing for these declining populations.

4. Regarding the CoRT program, perhaps research needs to be done comparing some of the differing installations of the innovation. Investigation could be undertaken which explores its use as a structured ten-week course with one new skill taught each week, as it compares to its use in other districts which have adopted CoRT as a part of Outcome-Based Education. This latter style of application makes CoRT more of a process skill. It would be helpful to find which of these interpretations seems to be prevalent and successful in the use of CoRT.

5. More research is needed on the role that a sense of ownership plays in the adoption and retention of curricular innovations. Is a teacher more apt to adopt and continue to use a program which he/she has been instrumental in designing or choosing? Will the teacher be more enthusiastic about retaining the innovation if he/she is well-grounded in the research behind the change so that he/she can flexibly use the innovation? The success or failure of a program could depend on this issue because inappropriate use of an innovation can destroy it. On the other hand inflexible use of most innovations means little adaptation to individual styles and circumstances which could spell failure for another reason. Ownership might be studied then as it applies to acceptance for innovation and expert understanding of precepts. Research in these areas could perhaps suggest ownership techniques which could encourage teachers to accept and even welcome change.

6. Peer coaching is a concept mentioned in much of the research concerning methods of implementing innovations. This is a concept that has great promise. Articles have been written in educational journals suggesting structures for implementing new curriculum which include peer coaching which could be helpful in instituting new programs (Joyce & Showers, 1988; Joyce, Murphy, Showers & Murphy, 1989). Interpretive studies of peer coaching projects in use could be of even greater help in restructuring schools, and introducing needed change.

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APPENDIX A

Appendix A

QUESTIONNAIRE

PART I

Please answer PART I by putting a cross mark (x) next to the appropriate response. If the question is open-ended, please supply information required in the space provided in each question.

1. Male _____ Female _____

2. Number of years in teaching _____

   Number of years teaching in the AGTP Magnet _____

3. Age: 21 - 25 _____ 26 - 30 _____ 31 - 35 _____ 36 - 40 _____

   41 - 45 _____ 46 - 50 _____ 51 or Over _____

4. Present teaching assignment:

   Elementary School _____

   Middle School _____

   High School _____

5. Academic major _____

   Subject(s) currently teaching _____

6. Have you taught CoRT I in your AGTP class (yes _____ no _____)

   If yes please go to PART II
   If no please indicate the reason for not using the program and return to the researcher.

   a. Felt the program could not deliver what it claimed _____

   b. Students showed no interest. _____

   c. Someone at this grade level was teaching it _____

   d. Other (explain) _____

   _____

   _____

Appendix A

PART II

Please answer the following questions according to your own use and evaluation of the program.

1. Did you like CoRT I ? yes_____ no_____

   a. What aspects did you like the most? _____

   _____

   _____

   b. What aspects did you like the least? _____

   _____

   _____

2. Did your students like CoRT I? yes _____ no _____

   a. If yes, why? _____

   _____

   b. If no, why not? _____

   _____

3. Did you find that low-achieving students found CoRT I more stimulating than other assignments in your program? yes _____ no _____

4. Did you use the program for one hour each week for 10 weeks: yes _____ no ____

   If not how did you use CoRT I? _____

   _____

5. To how many separate classes did you teach CoRT I in one year? _____

6. How were students placed in groups?

   Chosen by teacher _____ Chosen by students _____ Chosen by chance _____

   other _____

7. Were students:

   a. Allowed to change groups for each new lesson? _____

   b. Encouraged to stay with the same group throughout the whole 10 week duration?_____

   c. other _____

8. Did you test the results of the CoRT I Thinking Skills Program? yes _____ no ____

   a. If no please go on the question 9.

   b. If yes in what way did you test them? _____

   _____

   _____

   _____

   c. What were the results of your test of the effectiveness of CoRT I ? _____

   _____

9. Did you find the teacher material sufficient for your needs? yes _____ no _____

10. Do you believe that teacher in-service is necessary for better results in the program? yes _____ no _____

11. Do you believe that this meta-cognitive approach would be more valuable if tied to a particular curriculum or a specific subject matter? yes _____ no _____

    If yes, which content area do you think should adapt it? _____

    _____

    _____

    _____

Appendix A

PART III

Please add here, and/or on the back of this sheet, any information that you believe would be useful in an evaluation of CoRT I for use in the AGTP Program.

Appendix A

EVALUATION DATA

	QUESTIONS	DATA SOURCE
1.	Are students increasing their breadth in idea generation?	Pre/post tests Teacher Questionnaires
2.	Are AGTP teachers using CoRT I?	Teacher Questionnaires
3.	Why are they using it?	Classroom observations Pre/post tests Student evaluations Teacher Questionnaires
4.	Why not using it?	Teacher Questionnaires
5.	Used in prescribed fashion?	Teacher Questionnaires Content Analysis
6.	Does the teacher feel adequate material and explanation so that no in-service is needed?	Teacher Questionnaires
7.	Do teachers give students a chance to rate the program?	Student Writings Teacher Questionnaires
8.	Does the age, gender, amount of teaching experience, academic specialty and grade level of student taught effect evaluation?	Teacher Questionnaires
9.	Does the teacher use this program in more than one class at any given time?	Teacher Questionnaires
10.	Should CoRT I be tied to a particular academic subject? If so, what?	Teacher Questionnaires

APPENDIX B

Appendix B

MATRIX OF DATA FROM QUESTIONNAIRE RESPONDENTS

RESPONDENTS	GENDER	YRS.	AGTP	AGE	LEVEL*	MAJOR**
Respondent 1	Female	6	3	41-45	EL	El Ed
Respondent 2	Female	6	3	46-50	EL	El Ed
Respondent 3	Female	24	8	51 & O	EL	Soc St
Respondent 4	Female	30	10	51 & O	EL	English
Respondent 5	Female	NC	NC	NC	NC	NC
Respondent 6	Female	20	5	41-45	MS	History
Respondent 7	Female	25	8	46-50	MS	Math
Respondent 8	Female	25	9	50 & O	MS	Chemistry
Respondent 9	Male	21	8	41-45	HS	History
Respondent 10	Female	20	1	46-50	HS	English
Respondent 11	Female	4	1	21-26	EL	English Lit.
Respondent 12	Female	19	10	41-45	EL	Reading
Respondent 13	Female	24	1	51&O	EL	El Ed
Respondent 14	Female	20	11	46-50	MS	Eng/Soc St/Psych
Respondent 15	Female	21	7	41-45	HS	Literature
Respondent 16	Female	21	10	56-50	HS	English

* EL = Elementary School
MS= Middle School
HS= High School

** El Ed = Elementary Education
Soc St = Social Studies
English Lit = English Literature
Eng = English
Psych = Psychology

NC = This teacher sent her questionnaire back with no information on it other than the fact that she didn't teach CoRT because someone else was teaching it to her students.

Appendix B

MATRIX OF DATA FROM QUESTIONNAIRE RESPONDENTS
(cont.)

RESPONDENTS	TEACHING* SUBJECT	CoRT?	WHY/WHY NOT
Respondent 1	Kindergarten	No	OTHER
Respondent 2	2nd Grade	No	OTHER
Respondent 3	4th Grade	No	SOMEONE ELSE
Respondent 4	All	NO	OTHER
Respondent 5	NC	NC	NC
Respondent 6	Soc. St.	No	SOMEONE ELSE
Respondent 7	Math	No	SOMEONE ELSE
Respondent 8	Science	No	SOMEONE ELSE
Respondent 9	Soc. St.	No	SOMEONE ELSE
Respondent 10	English	No	OTHER
Respondent 11	Language Arts	YES	NA
Respondent 12	LA/ Soc. St.	YES	NA
Respondent 13	3rd Grade	YES	NA
Respondent 14	English	YES	NA
Respondent 15	English	YES	NA
Respondent 16	English	YES	NA

* Soc St = Social Studies
LA = Language Arts

Appendix B

MATRIX OF DATA FROM QUESTIONNAIRE : CORT PARTICIPANTS

PARTICIPANT	LIKE?	STUDENTS LIKE?	LOW ACHIEVERS	10 WEEKS?
Participant 1	YES	YES	NO	NO
Participant 2	YES	YES	NO	YES
Participant 3	YES	YES	YES	NO
Participant 4	YES/NO	N/C	NO	NO
Participant 5	YES	YES	YES	YES
Participant 6	YES	YES	NO	NO

PARTICIPANT	# OF CLASSES	GROUPS	CHANGE	TEST
Participant 1	1	TEACHER	YES	NO
Participant 2	2	STUDENT	NO	NO
Participant 3	1	TEACHER	YES	NO
Participant 4	4	N/C	YES	YES
Participant 5	2	TEACHER	NO	NO
Participant 6	2	STUDENT	N/C	NO

PARTICIPANT	MATERIAL	IN-SERVICE	SUBJECT MATTER
Participant 1	YES	NO	NO
Participant 2	YES	NO	YES
Participant 3	YES	YES	NO
Participant 4	NO	YES	YES
Participant 5	YES	YES	YES
Participant 6	N/C	YES	NO

Appendix B

TRANSCRIPT FROM A TAPED INTERVIEW

(concerning the use of the CoRT I program in the Flint AGTP classrooms):

1. Q Do you think that CoRT is being used at the present?

   A No probably not in any structured way.

2. Q Do you have any idea how many teachers used the program initially?

   A Probably about 1/4 of the AGTP staff.

3. Q How was the program introduced? Was there any pre-training for teachers?

   A No pretraining. A very informal pilot program. We frankly were floundering around to address a need we had but couldn't specifically define. We had the choice of waiting for more formal procedures or taking a risk with what appeared to be a good program. I'm not sorry we took that approach.

4. Q Was there any material for succeeding CoRT materials (i.e. CoRT II, etc.) given out?

   A Yes it could be obtained from me as the time came to use it.

5. Q Do you agree that the assessments made by this study are valid?
   a. No matter how good a program is, its effectiveness in education is based upon whether or not it is accepted and used by teachers.
   b. Because American teachers have so much autonomy in the development of their curricula and are accustomed to flexibility in process as well, perhaps a program with more "ownership" is needed.
   c. Students and teachers liked the program but not in the organization prescribed in the program:
   - allow students to choose their own groups (or at least change them)
   - 10 lessons throughout the course of the year rather than in consecutive weeks
   - no teacher to be responsible for the teaching of more than one class per school year (lack of spontaneity)
   - more use of the individual essay rather than classroom discussion and consensus training (or perhaps in addition to it)
   d. The pre/post test for CoRT I is much the same as the highest level of Bloom's Taxonomy and so has already been used for years with these students.

Appendix B

A Yes, but of course I don't believe that the program was ever meant to be used in the way described in your study.

6. Q Do you see it as a valuable tool? Used in what way?

A Yes, but only as a part of the broader area of research we now have that wasn't available at the time we adopted CoRT. We had a vague idea that thinking skills may be even more important to a student's education than factual data (which seems to change faster than ever thought possible). Many teachers saw no need for the program and we weren't sure what exactly its role would be. In a sense we were ahead of our time

7. Q In the ideal situation, what do you see as the most effective way to implement CoRT into a school district?

A The way we are using it now. This summer our workshop, using research from the areas of Thinking Skills, Learning Styles and Time Management have given us a structure which will give teachers a focus for curriculum design which will relate to designing thinking skills for all styles of learners in a time structure for a more pragmatic use of time. I really believe that this program, when used in a more flexible way than, perhaps, the manual seems to suggest provides for ownership. I do think that the teacher needs training in understanding the more flexible use of this program.

For those of you who have already used CoRT, its infusion into the whole will make a great deal of sense. Also your experience will be valuable in the peer coaching which is an important part of all successful teaching endeavors.

Appendix B

QUOTES FROM QUESTIONNAIRES

QUESTION:
DID YOU LIKE CORT? YES

TYPE	METHODS	SETTING	QUOTE
I	C2	3	"I've used segments of the program in all subject disciplines (formerly taught 5th grade science and math). Presently it enhances literature group discussions, many aspects of social studies, and is used considerably (esp. PMI's & CAF's) in affective areas. It is equally as effective in science, health and PE."
I	C2	3	"CoRT I has been easier to implement than II and III. The students are more receptive to CoRT I and it seems less tedious to deal with as a teacher."
I	C2	3	"I feel that CoRT is a valuable course and that I need to make more time to teach the lessons, because applying the knowledge and having a myriad of settings in which to do so is never a problem."

TYPES		METHODS (Sources of Evidence)		SETTINGS (within the site)
I	Particularistic	A.	Observation	1.High School
		1.	field notes	
II	Synoptic	2.	machine recordings	
		B.	Interview	2.Middle School
III	Global	1.	formal	
		2.	informal	
		C.	Documents	3.Elementary School
		1.	site/natural	
		2.	elicited	

Appendix B

QUOTES FROM QUESTIONNAIRES

QUESTION:

DID YOU LIKE CORT I? NO

TYPE	METHODS	SETTING	QUOTE
I	C2	2	"If some students finish long before others, classroom management becomes a problem in some classes."
I	C2	2	"I feel that Michigan Future Problem Solving is better for teaching skills and better suits the goals of gifted education to give students exercises in things which produce a product."

TYPES		METHODS (Sources of Evidence)		SETTINGS (within the site)
I	Particularistic	A.	Observation	1.High School
		1.	field notes	
II	Synoptic	2.	machine recordings	
		B.	Interview	2.Middle School
III	Global	1.	formal	
		2.	informal	
		C.	Documents	3.Elementary School
		1.	site/natural	
		2.	elicited	

Appendix B

QUOTES FROM QUESTIONNAIRES

QUESTION:
WHAT ASPECTS DID YOU LIKE THE MOST?

TYPE	METHODS	SETTING	QUOTE
I	C2	3	"opportunities for debate"
I	C2	3	"Generate discussion and thinking" "Applicable to any lesson" "Applicable to problem solving"
I	C2	3	"All"
I	C2	2	"It tests achievement and provides opportunity to practice thinking skill development"
I	C2	1	"Small steps to learn process"
I	C2	1	"Systematic approach to brain-storming" "Broad application to many areas" "Process approach"

TYPES		METHODS (Sources of Evidence)		SETTINGS (within the site)
I	Particularistic	A.	Observation	1.High School
		1.	field notes	
II	Synoptic	2.	machine recordings	
		B.	Interview	2.Middle School
III	Global	1.	formal	
		2.	informal	
		C.	Documents	3.Elementary School
		1.	site/natural	
		2.	elicited	

Appendix B

QUOTES FROM QUESTIONNAIRES

QUESTION:

WHAT ASPECTS DID YOU LIKE THE LEAST?

TYPE	METHODS	SETTING	QUOTE
I	C2	3	"None
I	C2	2	"if some students finish long before others classroom management becomes a problem in some cases."
I	C2	1	"I needed more activities"

TYPES		METHODS (Sources of Evidence)		SETTINGS (within the site)
I	Particularistic	A.	Observation	1.High School
		1.	field notes	
II	Synoptic	2.	machine recordings	
		B.	Interview	2.Middle School
III	Global	1.	formal	
		2.	informal	
		C.	Documents	3.Elementary School
		1.	site/natural	
		2.	elicited	

Appendix B

QUOTES FROM QUESTIONNAIRES

QUESTION:

DID YOUR STUDENTS LIKE CORT? WHY? WHY NOT?

TYPE	METHODS	SETTING	QUOTE
I	C2	3	"Enjoyed sharing opinions"
I	C2	3	"Can apply to everyday life"
I	C2	3	"A change form everyday classwork"
I	C2	2	"The more serious students enjoyed the challenge. Others were frustrated by the open-ended feeling the process creates."
I	C2	1	"Fun, not routine" "Some had problems: no correct answer"
I	C2	1	"They like thinking about thinking" "Like ways to process information" "Like ways of making group thinking work better"

TYPES		METHODS (Sources of Evidence)		SETTINGS (within the site)
I	Particularistic	A.	Observation	1.High School
		1.	field notes	
II	Synoptic	2.	machine recordings	
		B.	Interview	2.Middle School
III	Global	1.	formal	
		2.	informal	
		C.	Documents	3.Elementary School
		1.	site/natural	
		2.	elicited	

Appendix B

QUOTES FROM QUESTIONNAIRES

QUESTION:

IF NOT ONE HOUR EACH WEEK FOR 10 WEEKS, HOW USED?

TYPE	METHODS	SETTING	QUOTE
I	C2	3	"Twice monthly"
I	C2	3	"Once each week, then changed to sporadically- lack of time"
I	C2	3	"As I could fit it in"
I	C2	2	"Interspersed between other units of study"
I	C2	1	"Once I did and once I had a unit"
I	C2	1	"PMI the only strategy taught me, used as a prewriting technique or group decision process"

TYPES		METHODS (Sources of Evidence)		SETTINGS (within the site)
I	Particularistic	A.	Observation	1.High School
		1.	field notes	
II	Synoptic	2.	machine recordings	
		B.	Interview	2.Middle School
III	Global	1.	formal	
		2.	informal	
		C.	Documents	3.Elementary School
		1.	site/natural	
		2.	elicited	

Appendix B

QUOTES FROM QUESTIONNAIRES

QUESTION:

HOW WERE GROUPS CHOSEN AND FOR HOW LONG?

TYPE	METHODS	SETTING	QUOTE
I	C2	1	"PMI technique (pre-writing) used by whole class, first as one large group at board or on overhead projector, then individually worked on own topics"
I	C2	2	"Sometimes student-chosen groups, sometimes teacher-chosen"
I	C2	3	"Students were allowed to change every lesson"
I	C2	3	"I changed the students every lesson"
I	C2	3	"Groups were maintained through 2 lessons"

TYPES		METHODS (Sources of Evidence)		SETTINGS (within the site)
I	Particularistic	A.	Observation	1.High School
		1.	field notes	
II	Synoptic	2.	machine recordings	
		B.	Interview	2.Middle School
III	Global	1.	formal	
		2.	informal	
		C.	Documents	3.Elementary School
		1.	site/natural	
		2.	elicited	

Appendix B

QUOTES FROM QUESTIONNAIRES

QUESTION:

WHAT WERE YOUR TESTING RESULTS?

TYPE	METHODS	SETTING	QUOTE
I	C2	3	"Informally observing application of process in everyday settings"
I	C2	2	"Interspersed with the lessons. Used the material after every third-fourth lesson" "Some achievement but not much growth over tests at the beginning"

TYPES		METHODS (Sources of Evidence)		SETTINGS (within the site)
I	Particularistic	A.	Observation	1.High School
		1.	field notes	
II	Synoptic	2.	machine recordings	
		B.	Interview	2.Middle School
III	Global	1.	formal	
		2.	informal	
		C.	Documents	3.Elementary School
		1.	site/natural	
		2.	elicited	

Appendix B

QUOTES FROM QUESTIONNAIRES

QUESTION:

IS THERE A NEED FOR IN-SERVICE?

TYPE	METHODS	SETTING	QUOTE
I	C2	1	"Didn't use teacher material"
I	C2	1	"I'd use it [material] more if I knew more about it"
I	C2	1	"Without in-service the other levels would be harder to keep and incorporate into the classroom"
I	C2	1	"I need more training. I like the materials and would use more if I had more skill and information about how to use them"

TYPES		METHODS (Sources of Evidence)		SETTINGS (within the site)
I	Particularistic	A.	Observation	1.High School
		1.	field notes	
II	Synoptic	2.	machine recordings	
		B.	Interview	2.Middle School
III	Global	1.	formal	
		2.	informal	
		C.	Documents	3.Elementary School
		1.	site/natural	
		2.	elicited	

Appendix B

QUOTES FROM QUESTIONNAIRES

QUESTION:

SHOULD CORT BE TIED TO A PARTICULAR CURRICULUM?

TYPE	METHODS	SETTING	QUOTE
I	C2	3	"Should be assigned to a subject discipline and mandated across the board"
I	C2	2	"Social Studies"
I	C2	1	"Model UN" "It was always stressed that these problem-solving techniques could be used almost any time any decision had to be made"
I	C2	1	"Broad application" "I wouldn't change it. School is already too segmented. Thinking skills should be stressed across curriculum areas"
I	C2	1	"It's valuable just as it is, I just need to know more about it"

TYPES		METHODS (Sources of Evidence)		SETTINGS (within the site)
I	Particularistic	A.	Observation	1.High School
		1.	field notes	
II	Synoptic	2.	machine recordings	
		B.	Interview	2.Middle School
III	Global	1.	formal	
		2.	informal	
		C.	Documents	3.Elementary School
		1.	site/natural	
		2.	elicited	

Appendix B

QUOTES FROM QUESTIONNAIRES

ADDITIONAL COMMENTS:

TYPE	METHODS	SETTING	QUOTE
I	C2	1	"I need more training! I like the materials I have seen demonstrated and would use more if I had more skill and information about how to use them. Since the high school level is at end of the ladder, I think that those people in elementary and middle school are using CoRT I-V and we're supposed to be doing level VI,but all I know is I and I'm way behind. If the kids are up to V when they come in my room and I'm still on I, something's out of line (i.e.me!). I either have to fill in those missing steps or drop it (which is essentially what's happening now). With all that has to be done, it's been one of those things that's been easy to put off."
I	C2	1	"It's a good thinking skill unit, but it is difficult to work it into the high school curriculum. It is not always used for every group. I thought CoRT I was being used in 5th or 6th grade and the higher grades were going to use higher levels of CoRT. ?????? This has not come about. Without in-service, the other levels would be harder to teach and incorporate into the classroom.

TYPES		METHODS (Sources of Evidence)		SETTINGS (within the site)
I	Particularistic	A.	Observation	1.High School
		1.	field notes	
II	Synoptic	2.	machine recordings	
		B.	Interview	2.Middle School
III	Global	1.	formal	
		2.	informal	
		C.	Documents	3.Elementary School
		1.	site/natural	
		2.	elicited	

APPENDIX C

Appendix C

PRE/POST TEST DATA

#3 QUESTION NUMBER OF DIFFERENT RESPONSES

TEST	2ND HOUR	3RD HOUR	4TH HOUR	5TH HOUR	6TH HOUR
PRE	29	31	68	50	32
POST	24	34	36	38	29

#3 QUESTION NUMBER OF TOTAL RESPONSES

TEST	2ND HOUR	3RD HOUR	4TH HOUR	5TH HOUR	6TH HOUR
PRE	71	44	123	83	37
POST	33	59	72	66	42

#4 QUESTION NUMBER OF DIFFERENT RESPONSES

TEST	2ND HOUR	3RD HOUR	4TH HOUR	5TH HOUR	6TH HOUR
PRE	40	38	32	55	25
POST	18	24	50	39	18

#4 QUESTION NUMBER OF TOTAL RESPONSES

TEST	2ND HOUR	3RD HOUR	4TH HOUR	5TH HOUR	6TH HOUR
PRE	85	59	49	103	44
POST	52	37	95	52	32

Appendix C

QUOTES FROM STUDENT ESSAYS

STUDENT ASSESSMENT OF CORT

TYPE	METHODS	SETTING	QUOTE
I	C2	2	"I learned how to analyze things. To look at all sides of a subject, I learned that all people don't think the same. Even if someone thinks different than you it doesn't mean either of you are wrong."
I	C2	2	"I especially like the fact that when we're doing a CoRT activity it is a must to listen to ideas/opinions of all participants."
I	C2	2	"The program made you think about different points of view and made you look at both sides of a situation so you have less of a chance of being single-minded."
I	C2	2	"You get to express opinions on the answers to problems."
I	C2	2	"It helps kids to think more often."
I	C2	2	"Some of the ideas are [kinda] stupid but most of them make me think."

TYPES		METHODS (Sources of Evidence)		SETTINGS (within the site)
I	Particularistic	A.	Observation	1.High School
		1.	field notes	
II	Synoptic	2.	machine recordings	
		B.	Interview	2.Middle School
III	Global	1.	formal	
		2.	informal	
		C.	Documents	3.Elementary School
		1.	site/natural	
		2.	elicited	

Appendix C

QUOTES FROM STUDENT ESSAYS

STUDENT OPINIONS REGARDING GROUPS

TYPE	METHODS	SETTING	QUOTE
I	C2	2	"I think if you would let us pick our own groups, it would have been more fun. Even if we are friends in a group, we do have different ideas. Isn't that the reason we pick our friends, because they're different?"
I	C2	2	"You could make the problems more interesting and let people choose their own groups to work with."
I	C2	2	"I do not think I should have to be in a group with a certain person who never does any work and talks the whole time."
I	C2	2	"I think it is a good change of pace from all the [gook] work. I think the reason I don't like it was because of the group I was in."
I	C2	2	"I really don't mind the PMI, C&S, etc. but those in my group most of the time refuse to think... I wouldn't mind continuing doing the CoRT program as long as I'm in a <u>different group</u>!"

TYPES		METHODS (Sources of Evidence)		SETTINGS (within the site)
I	Particularistic	A.	Observation	1.High School
		1.	field notes	
II	Synoptic	2.	machine recordings	
		B.	Interview	2.Middle School
III	Global	1.	formal	
		2.	informal	
		C.	Documents	3.Elementary School
		1.	site/natural	
		2.	elicited	

Appendix C

QUOTES FROM STUDENT ESSAYS

STUDENT EVALUATION OF SUBJECTS

TYPE	METHODS	SETTING	QUOTE
I	C2	2	"Ideas weren't very fun. If ideas were more fun for kids maybe we would want to try to learn more."
I	C2	2	"The problems that we study and things we learn about to me are very educational."
I	C2	2	"I feel CoRT is a good idea. Whoever made it up had wonderful intentions. However, the person went about it completely wrong. I don't know where he messed up, but I find CoRT a boring and exasperating exercise, like a chore."
I	C2	2	"I think kids would like it more and find it more interesting if the things we talk about have to do with kids."

TYPES		METHODS (Sources of Evidence)		SETTINGS (within the site)
I	Particularistic	A.	Observation	1.High School
		1.	field notes	
II	Synoptic	2.	machine recordings	
		B.	Interview	2.Middle School
III	Global	1.	formal	
		2.	informal	
		C.	Documents	3.Elementary School
		1.	site/natural	
		2.	elicited	

Appendix C

QUOTES FROM STUDENT ESSAYS

BORING BECAUSE TOO OFTEN

TYPE	METHODS	SETTING	QUOTE
I	C2	2	"I feel that CoRT I is a bit boring, I dread doing it. When we first did CoRT it was fun. But since we do it so often, I get tired of it. Maybe if we did CoRT every 3 weeks it may be fun."
I	C2	2	"To me CoRT I started off to be very interesting. But it has become, well, I have become less enthusiastic about doing it...I would not mind doing it...every other week or something instead of every week."

TYPES		METHODS (Sources of Evidence)		SETTINGS (within the site)
I	Particularistic	A.	Observation	1.High School
		1.	field notes	
II	Synoptic	2.	machine recordings	
		B.	Interview	2.Middle School
III	Global	1.	formal	
		2.	informal	
		C.	Documents	3.Elementary School
		1.	site/natural	
		2.	elicited	

Appendix C

QUOTES FROM STUDENT ESSAYS

TIME TOO SHORT

TYPE	METHODS	SETTING	QUOTE
I	C2	2	"Not enough time to really think about it. If you gave more time we could really expand on our thoughts."
I	C2	2	"The only thing I really dislike about the program is the time given for each problem."

TYPES		METHODS (Sources of Evidence)		SETTINGS (within the site)
I	Particularistic	A.	Observation	1.High School
		1.	field notes	
II	Synoptic	2.	machine recordings	
		B.	Interview	2.Middle School
III	Global	1.	formal	
		2.	informal	
		C.	Documents	3.Elementary School
		1.	site/natural	
		2.	elicited	

APPENDIX D

Appendix D

TRANSCRIBED FROM CoRT THINKING

CoRT I

TEACHERS NOTES

JUNIOR SECONDARY or MIDDLE SCHOOL

Several schools have decided to use CoRT Thinking lessons for all their first year classes. At this age the pressure of examination syllabuses is not so great as it is later and there is therefore an opportunity to provide some basic groundwork in thinking.

At this age the important point is for the teacher to be deliberate and definite and to treat the subject in a serious manner. If the pupils start off treating the subject as serious they are more likely to benefit from the lessons. At this age the teacher may not be able to rely on natural high interest levels but must provide a definite structure which the pupils can see and can work within.

The pace of the lessons must be brisk and crisp rather than discursive and floppy. The teacher should be free with encouragement and praise and seek to guide the lesson in this way. He must also be quick to tighten up the lesson if it shows signs of going adrift. Unlike at the primary level the teacher does not have to accept all ideas. Indeed if he does so the pupils may not know what they are supposed to be doing. He can judge some ideas to be important, interesting, original etc. and others feeble, trivial and irrelevant. It is not a matter of trying to force good thinking through condemnation but of giving very clear guide-lines.

At this age the lessons can be run in the intended manner. Since the pace is to be brisk it should be possible to cover all the practice items. The process discussion section and the principles section should also be covered. Unless it is more than a single period the project section would be left out but could be used as an essay subject or in a similar way.

Each pupil is given his own set of lessons notes to keep. Nevertheless the teacher should read out the practice items and try to enrich these. Choice of item will depend upon the teacher's assessment of his own class. The items may have to be rather more relevant to the children's own lives since unlike primary children they are not so interested in ideas for the sake of ideas. Indeed it is in this age group that immediate relevance may be most important. Children do, however, live in worlds quite apart from their own lives. For instance through the media of TV children are conscious of war, cops and robbers, and various other situations they may never actually meet. So the teacher's assessment of relevance must take into account not only the pupil's direct world but also his "second-hand world" derived from the media. This is the age when boys make model aeroplanes and have mock battles with toy soldiers. Fantasy is not as wide ranging as with younger children but is focused on fairly well defined alternative worlds. Political and social realism problems are possibly less applicable at this stage than at either the younger or older age levels.

The teacher must also try to provide variety by altering the format of the lessons and allowing interaction between groups.

Appendix D

TEACHERS NOTES
(cont.)

The important points for the teacher to remember at this age level are:

1. Keep the lessons serious, deliberate and definite rather than playing around.

2. Keep the lesson brisk and crisp.

3. Provide by example definite guide-lines and objectives so that the pupils know what it is all about and do not flounder around.

4. Be quick to control facetiousness and laziness.

If the teacher feels that the class needs tightening up because the pupils have rather too high an opinion of their thinking skill he may wish to use some of the test material given later in this booklet.

Appendix D

TYPE II ENRICHMENT

GROUP TRAINING ACTIVITIES

DEFINITION: Instructional methods, materials and training exercises that are purposefully designed to promote the development of thinking and feeling processes.

TARGET AUDIENCES:

1. All students (Basic Training)
2. Talent Pool Students (Advanced Level Experience)
3. Individual Talent Pool Students (Methodology Training According to Individual Interests and Type III Focus)

OBJECTIVES:

1. To develop general skills in creative thinking and problem solving, critical thinking, and affective processes such as sensing, appreciating and valuing.

2. To develop a wide variety of specific learning-how-to-learn skills such as note taking, interviewing, classifying and analyzing data, drawing conclusions, etc.

3. To develop skills in the appropriate use of advanced level reference materials such as Reader's Guides, Directories, Abstracts, etc.

4. To develop written, oral and visual communication skills that are primarily directed toward maximizing the impact of students' products upon appropriate audiences.

"All too often we are giving our young people cut flowers when we should be teaching them to grow plants. We are stuffing their heads with products of earlier innovation rather than teaching them to innovate. We think of the mind as a storehouse to be filled when we should be thinking of it as an instrument to be used."

John W. Gordon

Appendix D

THE MAJOR-MINOR OUTLINE OF TYPE II SKILLS

I. Cognitive and Affective Training

- A. Creative Thinking
- B. Creative Problem-Solving and Decision-making
- C. Critical Thinking
- D. Affective Skills

II. Learning How to Learn Training

- A. Listening
- B. Observing, Perceiving
- C. Note taking, Outlining, Reading
- D. Interviewing, Surveying
- E. Analyzing and Organizing Data

III. Using Advanced Research and Reference Skills

- A. Focusing, Planning and Managing Type III
- B. Library Skills
- C. Learning About Non Print and Community Sources

IV. Written, Oral, and Visual Communication

- A. Media Production
- B. Oral Communication
- C. Professional Writing Skills

"In the world which is already upon us, the goal of education must be to develop individuals who are open to change, who are flexible and adaptive, who have learned how to learn, and are thus able to learn continuously. Only such persons can constructively meet the perplexities of a world in which problems spawn much faster than their answers. In the coming world the capacity to face the new appropriately is more important the the ability to know and repeat the old."

Carl R. Rogers

"The goal of education is not to increase the amount of knowledge but to create possibilities for a child to invent and discover, to create men who are capable of doing new things."

Jean Piaget

"The difference between training and teaching is that if you know what you're doing its training and if you don't know what you're doing, it's teaching."

B. F. Skinner

Appendix D

THE ALMOST WHOLE LIST OF TYPE II SKILLS

So you've decided to teach a six-week unit on creativity, an eight-week unit on oral communication, a five-week unit on critical thinking and a four-week unit on research skills.

The schedule is conflict free and the talent pool kids arrive next week. But which techniques will you use to teach these four skills? Confused? Why not consult this list of techniques for Type II training in fourteen major areas of process skill instruction? It should be extremely helpful in planning your Type II lessons.

TAXONOMY OF TYPE II ENRICHMENT PROCESSES
By Joseph Renzulli

NOTE: This taxonomy is not intended to be a complete listing of every thinking and feeling process, nor are the processes listed here mutually exclusive. Rather, there are many instances in which the processes interact with one another and even duplicate items from various categories. Because of this interaction, and the need to use several processes simultaneously in their application to real problems, it is important to teach them in various combinations rather than in an item-by -item fashion.

Whenever possible, we have attempted to list the process skills in a logical hierarchy, but it is important to point out that the appropriate use of thinking skills often proceeds in a cyclical rather than linear fashion. For this reason, however, there may be instances when a sequence still facilitates comprehensions and application.

I. COGNITIVE AND AFFECTIVE TRAINING

A. Creativity. Developing and Practicing the Use of:

Fluency
Flexibility
Originality
Elaboration
Brainstorming
Forced Relationships
Attribute Listing
Fantasy
Imagery
Association
Comparison
Risk Taking

Modification Techniques
- Adaptation
- Magnification
- Minification
- Substitution
- Multiple Uses
- Rearrangement
- Combination
- Reversal

B. Creative Problem Solving and Decision Making: Developing and Practicing the Use of:

Creative Problem Solving

"Mess" Finding
Fact Finding
Problem Finding
Idea Finding
Solution Finding
Acceptance Finding

Appendix D

THE ALMOST WHOLE LIST OF TYPE II SKILLS (cont.)

Decision Making:

Stating Desired Goals and Conditions Related to a Decision That Needs To Be Made

Stating the Obstacles to Realizing the Goals and Conditions

Identifying the Alternatives Available for Overcoming Each Obstacle

Examining Alternatives in Terms of Resources, Costs, Constraints and Time

Ranking Alternatives in Terms of Probable Consequences

Choosing the Best Alternative

Evaluating the Actions Resulting From the Decision

C. Critical Thinking. Developing and Practicing the Use of:

Conditional Reasoning
Ambiguity
Fallacies
Emotive Words
Definition of Terms
Categorical Propositions
Classification
Validity Testing
Reliability Testing
Translation
Interpretation
Extrapolation
Patterning
Sequencing
Flow Chart
Computer Programming

Analogies
Inferences
Inductive Reasoning
Deductive Reasoning
Syllogisms
Probability
Dilemmas
Paradoxes

Analysis of:
- Content
- Elements
- Trends and Patterns
- Relationships
- Organizing Principles
- Propaganda and Bias

D. Affective Training

Understanding Yourself
Understanding Others
Working with Groups
Peer Relationships
Parent Relationships
Values Clarification
Moral Reasoning
Sex Role Stereotypes
Assertiveness Training
Self Reliance
Dealing with Conflict

Coping Behaviors
Analyzing Your Strengths
Planning Your Future
Interpersonal Communication
Developing Self Confidence
Developing a Sense of Humor
Showing an Understanding of Others
Dealing with Fear, Anxiety and Guilt
Dealing with the Unknown

Appendix D

THE ALMOST WHOLE LIST OF TYPE II SKILLS (cont.)

II. LEARNING HOW TO LEARN SKILLS

A. Listening, Observing and Perceiving. Developing and Practicing the Use of:
- Following Directions
- Noting Specific Details
- Understanding Main Points, Themes and Sequences
- Separating Relevant from Irrelevant Information
- Paying Attention to Whole-Part Relationships
- Scanning for the "Big Picture"
- Focusing in On Particulars
- Asking for Clarification
- Asking Appropriate Questions
- Making Inferences
- Noting Subtitles
- Predicting Outcomes
- Evaluating a Speaker's Point of View

B. Notetaking and Outlining. Developing and Practicing the Use Of:

Notetaking:
- Selecting Key Terms, Concepts, and Ideas; Disregarding Unimportant Information
- Noting What Needs to be Remembered
- Recording Notes and Underlining or Highlighting the Most Important Items
- Categorizing Notes in a Logical Order
- Organizing Notes So That Information From Various Sources Can Be Added at a Later Time

Outlining:
- Using Outline Skills to Write Material That Has Unity and Coherence
- Selecting and Using a System of Notation Such as Roman Numerals
- Deciding Whether to Write Topic Outlines or Sentence Outlines
- Using Parallel Structure
- Remembering That Each Section Must Have At Least Two Parts

C. Interviewing and Surveying. Developing and Practicing the Use of:
- Identifying the Information Being Sought
- Deciding On Appropriate instrument(s)
- Identifying Sources of Existing Instruments
- Designing Instruments (e.g., Factual, Attitudinal, Probing, Follow-up)
- Sequencing Questions
- Identifying Representative Samples
- Field Testing and Revising Instruments
- Developing Rapport with Subjects
- Preparing a Data Gathering Matrix and Schedule
- Using Follow-Up Techniques

Appendix D

THE ALMOST WHOLE LIST OF TYPE II SKILLS (cont.)

D. Analyzing and Organizing Data. Developing and Practicing the Use Of:
- Identifying Types and Sources of Data
- Identifying and Developing Data Gathering Instruments and Techniques
- Developing Data Recording and Coding Techniques
- Classifying and Tabulating Data
- Preparing Descriptive (Statistical) Summaries of Data (e.g., Percentages, Means, Modes, etc.)
- Analyzing Data with Inferential Statistics
- Preparing Tables, Graphs and Diagrams
- Drawing Conclusions and Making Generalizations
- Writing Up and Reporting Results

III. USING ADVANCED RESEARCH AND REFERENCE MATERIALS

A. Preparing for Type III Investigations
- Developing Time Management Skills
- Developing a Management Plan
- Developing Problem Finding and Focusing Skills
- Stating Hypotheses and Research Questions
- Identifying Variables
- Identifying Human and Material Resources
- Selecting An Appropriate Format and Reporting Vehicle
- Obtaining Feedback and Making Revisions
- Identifying Appropriate outlets and Audiences

B. Library Skills
- Understanding Library Organizational Systems
- Using Information Retrieval Systems
- Using Interlibrary Loan Procedures
- Understanding the Specialized Types of Information in Reference Books Such As:
  - Bibliographies
  - Encyclopedias
  - Dictionaries and Glossaries
  - Annuals
  - Handbooks
  - Directories and Registers
  - Indexes
  - Atlases
  - Periodicals
  - Histories and Chronicles of Particular Field Organizations
  - Concordances
  - Data Tables
  - Digests
  - Surveys
  - Almanacs
  - Anthologies
  - Yearbooks
  - Manuals
  - Reviews
  - Readers Guides
  - Abstracts
  - Diaries
  - Books of Quotations, Proverbs, Maxims, & Familiar Phrases
  - Source Books

Appendix D

THE ALMOST WHOLE LIST OF TYPE II SKILLS (cont)

Understanding the Specific Types of Information in Non-Book Reference Materials Such As:

Art Prints	Globes	Films
Talking Books	Maps	Study Print
Video Tapes/Discs	Film Loops	Models
Microfilms	Pictures	Filmstrip with Sound
Filmstrips	Records	Flashcards
Realia	Slides	Audio Tapes
Transparencies	Charts	Data Tapes

C. Community Resources
Identifying Community Resources Such As:
- Private Businesses and Individuals
- Governmental and Social Service Agencies
- College and University Services and Persons
- Clubs, Hobby and Special Interest Groups
- Professional Societies and Associations
- Senior Citizen Groups
- Art and Theater Groups
- Service Clubs
- Private Individuals
- Museums, Galleries, Science Centers, Places of Special Interest or Function

IV. DEVELOPING WRITTEN, ORAL AND VISUAL COMMUNICATION TECHNIQUES

A. Visual Communication. Developing Skills in the Preparation of:
- Photographic Print Series
- Slide Series
- Filmstrips
- Audio Tape Recordings
- Overhead Transparencies
- Motion Pictures
- Video Tape Recordings
- Multimedia Images

B. Oral Communication. Developing and Practicing the Use of:
- Organizing Material for an Oral Presentation
- Vocal Delivery
- Appropriate Gestures, Eye Movement, Facial Expression and Body Movement
- Acceptance of the Ideas and Feelings of Others
- Appropriate Words, Quotations, Anecdotes, Personal Experiences, Illustrative Examples, and Relevant Information
- Appropriate Use of Audio-Visual Materials and Equipment
- Obtaining and Evaluating Feedback

Appendix D

THE ALMOST WHOLE LIST OF TYPE II SKILLS
(cont.)

C. Written Communication

Planning the Written Document (e.g., Subject, Audience, Purpose, Thesis, Tone, Outline, Title)
Choosing Appropriate and Imaginative Words
Developing Paragraphs with Unity, Coherence, and Emphasis
Developing "Technique" (e.g., Metaphor, Comparison, Hyperbole, Personal Experience)
Writing Powerful Introductions and Conclusions
Practicing the Four Basic Forms of Writing (Exposition, Argumentation, Description, And Narration)
Applying the Basic Forms to a Variety of Genre (i.e., Short Stories, Book Reviews, Research Papers, etc.)
Developing Technical Skills (e.g., Proofreading, Editing, Revising, Footnoting, Preparing Bibliographies, Writing Summaries and Abstracts.)

Appendix D

TIPS FOR TEACHING TYPE II SKILLS

1. REMEMBER THAT TYPE II SKILLS ARE GOOD FOR ALL STUDENTS.
2. DON'T TEACH TOO MANY SKILLS IN ONE YEAR.
3. TEACH TO LARGE GROUPS WHENEVER POSSIBLE.
4. CREATE A TYPE II LIBRARY OF COMMERCIALLY PREPARED MATERIALS.
5. DEVELOP A FIVE YEAR PLAN FOR STAFF TRAINING IN TYPE II SKILLS.
6. CREATE A SET OF TYPE II FILES TO STORE USEFUL PRACTICE MATERIALS.
7. COMMUNICATE TO PARENTS AND TEACHERS THE PURPOSE FOR TYPE II TRAINING.
8. USE DEMONSTRATION LESSONS, COACHING AND FEEDBACK TO HELP CLASSROOM TEACHERS FEEL MORE COMFORTABLE IN TEACHING TYPE II SKILLS.
9. TEACH PARENTS HOW TO HELP STUDENTS APPLY TYPE II SKILLS AT HOME.
10. USE BIOGRAPHICAL DATA FROM ADULTS WHO DEMONSTRATED GIFTED BEHAVIOR TO SUPPORT THE NEED TO LEARN AND USE TYPE II SKILL.
11. REMEMBER THAT THERE ARE A WHOLE HOST OF SUBJECT-RELATED TYPE II SKILLS THAT SHOULD BE TAUGHT ONLY TO INDIVIDUALS WHO NEED THIS TRAINING FOR USE DURING THEIR TYPE III INVESTIGATIONS.
12. REVIEW THE THEORY/RESEARCH IN THE FIELD PRIOR TO DEVELOPING A TYPE II INVESTIGATION.
13. TEACH EACH STEP/ROLE/COMPONENT AS A SEPARATE ENTITY, THEN PROVIDE FOR CHAINING, PRACTICE AND APPLICATION.
14. BE SURE TO PROVIDE FOR PRACTICE AND REAL-WORLD APPLICATION OF EACH TYPE II SKILL.
15. PROVE INTERMITTENT FEEDBACK DURING PRACTICE SESSIONS.
16. USE DEBRIEFING AND DISCUSSION TIME TO DISCUSS THE PRINCIPLES AND FUTURE APPLICATIONS OF LEARNED TYPE II SKILLS.

Appendix D

TIPS FOR TEACHING TYPE II SKILLS
(cont.)

17. DONT ALLOW STUDENTS TO OVERLOOK THE ROLE OF KNOWLEDGE AS ONE ASPECT OF SKILLED PERFORMANCE.

18. ADD MORE TYPE II SKILLS TO YOUR TEACHING CURRICULUM AS TRAINING AND STAFF DEVELOPMENT BECOMES AVAILABLE.

19. DONT OVERLOOK BOOKS AND JOURNALS AS SOURCES OF PROFESSIONAL TRAINING IN THE TYPE II SKILLS.

Appendix D

QUESTIONS USED FOR PRE/POST TEST

QUESTION #3

What do you think of the idea that children should be paid a small wage for going to school?

QUESTION #4

There is a suggestion that everyone on leaving school should spend one year doing social work (e.g. helping old people, hospital work, cleaning up the environment). Do you think this is a good idea?