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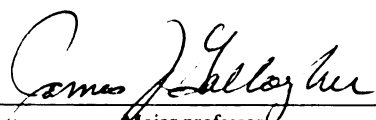
BELIEVERS AND SKEPTICS:  
A STUDY OF SCIENCE AND MATHEMATICS TEACHERS'  
PARTICIPATION IN THE RESTRUCTURING  
OF THEIR WORKPLACE

presented by

Roberto Alves Monteiro

has been accepted towards fulfillment  
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Major professor

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A STUDY OF SCIENCE AND MATHEMATICS TEACHERS'  
PARTICIPATION IN THE RESTRUCTURING  
OF THEIR WORKPLACE**

**By**

**Roberto Alves Monteiro**

**A DISSERTATION**

**Submitted to  
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**1994**



**ABSTRACT**  
**BELIEVERS AND SKEPTICS:**  
**A STUDY OF SCIENCE AND MATHEMATICS TEACHERS'**  
**PARTICIPATION IN THE RESTRUCTURING OF THEIR WORKPLACE**  
**BY**

**Roberto Alves Monteiro**

In this research, I studied a group of teachers as they participated in restructuring their workplace. Although reformists have repeatedly advocated teacher participation in workplace restructuring, there has been little investigation of the actual nature of their participation. For that reason, I conducted the investigation described in this dissertation, to learn how teachers participate in that process. An important result of my research was my discovery that the teachers' participation encompassed both acquiring expertise and sharing existing knowledge and skills.

Although the primary question remained the same throughout my investigation, the viewpoints which gave focus to the question evolved. This was consistent with the critical ethnographic perspective under which I conducted my investigation. As my research progressed, I became interested in learning how teachers negotiated their new roles, not only among themselves, but also with the researchers who worked with them in the "Support Teacher Program."

In order to make explicit the observational and analytical lenses, I advanced a conceptual framework. For this, I drew from sources in social theory, primarily the concept of crisis, symbolic interactionism and psycho-sociology. I conducted the research using an interpretive approach. In the process of this investigation, I attempted to harmonize the principles of ethnographic research with the use of a computerized system, the Monteiro Data Organizer, which I designed and used to handle the qualitative data I accumulated.

Another major conclusion that one can draw from this study is that experienced, seasoned mathematics and science teachers do significantly change their teaching

practices as they attempt to restructure their workplace. This happens as the teachers gain awareness of the inadequacy of preexisting teaching practices in the face of external needs (e.g., student needs arising from diverse cultural backgrounds).

I observed this as the teachers I studied incorporated a new role of Support Teacher in their work environment during a process of acceptance of, and resistance to, the proposed changes. This was the result of teachers approaching the changes, as they vacillated between belief in, and skepticism of, the proposed reforms. However, regardless of whether or not they believed in the reforms, the teachers had to ascertain the adequacy of their teaching practice. As a result, all of the teachers I observed underwent individual transformations, as they participated in the process. Thus, I saw that both resistance and acceptance are active forms of participation. Finally, the study demonstrated the importance of ownership and self-agency in the process, by which teachers restructured their workplaces.

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To Elisa, my mother

Who has taught me two important interpretive research tools: to observe and to listen.

To Maria

Who has being a companion in all seasons.

To my children

Hektor, Marko, Mariu and Roberto

Who were wise enough to understand difficult times.

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## CHAPTER I

### INTRODUCTION

Participation is a strange word. Its dialectics has the fact that participation is not taking parts, but in a way taking the whole. Everybody who participates in something does not take something away so that the others cannot have it. The opposite is true: by sharing, by our participating in the things in which we are participating we enrich them; they do not become smaller, but larger. The whole life of tradition consists exactly in this enrichment so that life is our culture and our past: the whole inner store of our lives is always extending by participating (Gadamer 1984).

#### Background

Teacher participation has been an issue of major concern in almost all educational reform movements. There is little contention that teachers participate in shaping school practices and that those practices constitute a school's culture. Since teachers contribute a great deal to their workplace, they are accepted as active actors of the school's culture. However, despite the constant claim that teachers are an important component of school organization, there has been little investigation about the nature of their participation in reforming this organization.

The concept of participation usually incorporates two meanings, one of taking part in something, and the other of sharing something with others. When applied to teachers, in the context of their recent efforts to take charge of their professional lives, these two components may lead to a dilemma regarding their manner of participation. The dilemma appears when they have to decide between accommodating a state of affairs and taking action to change it. One could claim that this dilemma is part of every person's daily life. This, is true. However, it has increased relevance when studying

teachers' professional participation. For instance, Rosenthal (1969) demonstrates that this dilemma may result in a clash when teachers become part of an organized body of professionals, such as unions. The clash becomes apparent when teachers have to choose between accommodation at an individual level, for instance in their building, and making changes in their profession through collective action outside their buildings. Rosenthal's (1969) observations indicate that teacher participation encompasses what teachers do in their individual capacities as faculty members and what they do when they delegate responsibility for action in an organizational membership.

In addition to verifying that teachers take part in these formal categories of participation, one may also look at participation in real contexts to understand what happens when teachers participate. The latter perspective enables a critical understanding of what goes on when teachers share their experiences while they participate. This perspective is based upon the understanding that by participating, teachers do play a role in determining not only the shape, but also the ethos of the educational enterprise set into motion in schools. Therefore, teachers' participation, as a concept, has to encompass the context of participation in school's practices, culture and organization. Also, the concept has to take into account both "taking part" and "sharing" at individual and collective levels.

A closer look into the two fields of science and mathematics shows that the nature of concern about teachers' participation seems to have changed. These changes have been more visible since the big great science education reform movement in the 1950s. Then, teacher participation was seen as a danger (Duschl, 1990) to be bypassed with teacher-proof curricula. The current trend in these fields is to recognize the importance of full teacher participation as vital for the success of educational reform (Duschl, 1990; Gallagher, 1989; Sarason, 1990). As a consequence, studying science and mathematics teachers--as they participate in formal movements and as they share their expertise in

restructuring their science or mathematics teaching--is important to enlarge our understanding of the issue of teachers' participation.

This dissertation describes the participation by a group of Science and Mathematics teachers in restructuring their workplace, both as they took part and as they shared their professional expertise in that process.

### Major Concerns in Studying Science and Mathematics Teachers' Participation

As I stated earlier, there has been little investigation about the nature of teachers' participation in changing schools. In fact, it is important to understand why such an important question was left unattended by science and mathematics educators, even by those trying to introduce reforms. There seem to be a combination of methodological, socio-political and historical reasons why teachers' participation has not been a more visible interest or studied issue.

The methodological reasons are related to the difficulties in doing a study of teachers' participation. First, both outsiders and insiders usually take teachers' participation for granted. Teachers are expected to follow the direction of change instigated by reformers. It is very easy to overview something taken to be obvious. Yet, what teachers' participation means and entails may not be clear either to teachers or to outsiders. Second, a study of teachers' participation requires the existence of particular situations--naturally occurring in teaching settings--that to an observer the contradictions between a school's culture and teachers' practices. For instance, these contradictions may be more visible in teachers coming back from inservice training. They may have undergone such a transformation that they would view their workplace from a different perspective. One may find examples of teachers in situations similar to those mentioned here in recent studies. For instance, Gallagher (1989), Bettencourt and Gallagher (1990) all described an attempt to restructure teachers' professional roles to enable this kind of situation. In Gallagher (1989) and Zesaguli (1990), the subjects were teachers involved

in a long-range attempt to restructure their professional roles by incorporating a new one, the role of support teachers. These studies reported changes that called for teachers to be critical of their teaching practices individually, and of their schools' practices as a whole, while still participating in the negotiation of their new roles (Bettencourt & Gallagher 1990). One may say that the exposure of different facets of teachers' work in these situations made possible an in-depth examination of these teachers' participation in the transformation of their workplace. Teachers may also experience a confrontation between their past experiences and the proposed changes, before they reach a balance that accounts for their transformation through their personal choices. Normally, this balance is reached by evolving negotiations, happening during the enormous amount of interactions in which teachers became involved. This can be better studied with intense utilization of interpretive methods. I will explain this in more detail in Chapter III.

There are also socio-political reasons why teachers' participation has not been studied more. These reasons are related to teachers' lack of professional autonomy, on the one hand, and changes in the learning population, on the other hand. Regarding teachers' autonomy, two positions can be contrasted. The first position suggests that teachers, as professionals, are usually passive subjects of a received "culture" and imposed wisdom which does not benefit them at all (Cooper, 1988). According to this position, teachers' culture is one of submission. Given this point of view, there would be no reason or motivation to study the nature of teachers' participation, since no recognition is given to teachers' own agency or how, by their own initiative, they apprehend aspects in their culture.

The second position offers a different perspective on the issue of teachers' autonomy. According to this position, teachers' lack of control over their professional lives may result from having a received view about their practices. However, the assumption of teachers' culture as one of submission does not follow from this conclusion. As opposed to the first position, this one implies a significant amount of self

determination in the way teachers buy into new ideas. For instance, one observes this view when classroom teachers are working with educational researchers. Researchers, especially those from universities, often convey, although unintentionally, a “mystique of expertise” that can reinforce teachers’ received views (Campbell, 1988). In this position, teachers are viewed not as submitting themselves to a certain vision, but as buying, by their own initiative, into that vision. What remains to be explored is how teachers can incorporate into their practice a vision of teaching, not necessarily generated within the realm of their experience. Therefore, the question is not how to describe a process of submission but to understand how teachers manifest their self engagement, or in other words, how they participate. A teacher’s own initiative, self engagement, and self determination are aspects of what has been described as human agency, a concept used here in the same sense as by Willis (1981).

Both of these positions address teachers’ lack of autonomy. Whereas Cooper’s (1988) arguments leave no room to address the issue of teachers’ participation, Campbell’s (1988) findings demonstrated that part of the problem of lacking autonomy is explained by the way teachers participate, with help from experts, in the shaping their professional roles. Therefore, this second position opens room for studying teachers’ participation. However, one of the problems with the second position is that it requires participant observation of a considerable duration to reach a reasonable perception of the multi-faceted ways teachers participate. For instance, Campbell’s (1988) research, conducted over a three-year period, was the result of a collaboration between teachers and researchers.

Recent changes in the student population have thrown teachers into confusion as to how to better perform the teaching task, therefore making it more difficult to study their participation. Their confusion is due to the significant shift in education from an elite-oriented, to a mass-oriented, phenomenon. This is noticeable in science and

mathematics, especially at the secondary school level, and has a significant effect in determining who should take part and benefit from science education (Fensham, 1988).

Aronowitz (1981) has explained that phenomenon as one in which underprivileged segments of the population see education as a place *par excellence* to struggle against their social marginalization. Therefore, these segments put a stronger demand on educational services than they did before. In the American context, an historical example of this phenomenon is the large segment of the population, especially after the civil rights movements of the 1960s, seeking a place at school. As the pressures on school systems increase, the appeal for immediate solutions for a crowded classroom of more diverse learners tends also to increase. The result is a mismatch between available and required teachers' expertise that causes them to be caught a dilemma regarding where to concentrate their effort: (1) to overcome their real need for change in their professional skills, usually more oriented to elite students, or (2) to find ways for professional survival in a classroom crowded with students having diverse backgrounds.

The discrimination between which reforms are accepted and which are rejected by teachers, on the one hand, and on the other hand the understanding of the reasons some potential solutions are accepted, while others are rejected, make the study of teachers' participation under these conditions a challenging one.

There are also historical reasons why teachers' participation has not been a well-studied issue, especially within science education. In science education, the reasons are mainly related to curriculum development. A retrospective analysis of 30 years of science education in the U.S. shows that teachers were deliberately left out of the National Science Foundation (NSF) science projects developed since the 1960s (Duschl, 1990). This same perspective seems to be supported by retrospective studies of the U.S. education reform movement in general. (Sarason, 1990).

What the literature suggests is that the concern about teachers' real and full participation in shaping a subject area is a recent phenomenon, particularly within science

and mathematics education. For instance, in the 1991 annual meeting of National Association for Research in Science Teaching (NARST) the presence of five junior high school science teachers, who presented papers about their collaboration with science education researchers, was talked about as a rarity. However, their presence, was identified as an initiative to be commended both for its importance and for its opportunity. The main purpose of this dissertation is to contribute to a better understanding of the concept of teachers' participation.

Historically, in the literature, the concept of teachers' participation is based the tradition of symbolic interactionism (Berger & Luckman, 1966; Blumer, 1969; Schutz & Luckman, 1973). The interactionist's argument is that people construct their social world through their interpretations and actions. Interactionism stresses the negotiation of meanings as a way to construct social order at a given level. Within the interactionist tradition, behavior is not viewed as a release from internal psychological structures nor as response to external pressure coming from social facts. Rather it focuses upon emergence and negotiation. Those are processes by which social action in groups, organizations or larger societies is constructed and transformed in everyday life. Construction of social action is a process that occurs both in episodic encounters and in long-lasting socialization processes over the life history of individuals.

In this research, I used theoretical insights drawn from a critical tradition, in association with symbolic interactionism. The interactionist approach was very useful to me as I observed the teachers and sought to identify and describe the processes occurring as they negotiated social order. This seems to be an important first step in understanding teachers' participation from a sociological perspective. It lays the groundwork needed to conduct further research aimed at unveiling power relationships developed as a result of teachers' participation. Therefore the investigation of teachers' participation, seems to call for a two-step study. The first step describes how teachers do participate, and the,

second deals with the power relationship affecting both their existing and newly-incorporated professional roles.

### Purpose of the Study and Research Questions

The main purpose of this dissertation is to address participation as negotiation of meaning, in order to contribute to the understanding of the issues and nature of teachers' participation. I first became concerned with the issue of teachers' participation between December, 1988 and the spring of 1989. At that time, I did 100 hours of participant observation of two teachers. I collected the data to help project staff assess the effects of the STP. This project was developed jointly by Major University (MU), the American Federation of Teachers (AFT), and the Uniontown Public Schools (UPS), from now on referred to simply as MU/AFT/UPS. During this time, I realized both the importance of teachers' participation and the simultaneous lack of research on this subject. Having decided to study teachers' participation for my doctoral dissertation, I observed a group of four science and four mathematics teachers who were participating in the MU/AFT/UPS program. (I will refer to these teachers as Support Teachers.) In addition, I observed four other science teachers, colleagues of the Support Teachers, in two different buildings (I will refer to them as Peer Teachers.) As I mentioned above, I utilized interpretive methods. I studied these teachers as they participated in the program and incorporated a new professional role, that of Support Teachers.

I began my study focusing on the question of how Support Teachers were participating in restructuring their professional roles within a context of restructuring school practices. As my study progressed I broke that overarching question into various others. For instance, at different points in the research, I became interested in observing how those teachers were negotiating the meaning of the new roles with researchers, with the Peer Teachers and among themselves. After spending time in the field, I also became interested in understanding how Support Teachers and Peer Teachers were perceiving



their socialization into the new roles. The Support Teachers and researchers would sometimes refer to some of the Peer Teachers as resistant teachers. After learning that I begun directing my observations toward the difference between the socialization of believers and the that of the resistors as they adjusted to their new roles.

My database consists of two major elements. First, I used a large set of existing documents, audio and video recordings accumulated during the almost three years of the project. Second, I did participant observation of activities of the MU/AFT/UPS program during the period of August 1990, to April 1991, to collect evidence of interactions. The organization of the database incorporated various techniques of interpretive method. Examples include document analysis, participant observation, open ended interviews and subjects' written or spoken reactions to interpretive notes.

#### Organization of the Dissertation

This study is presented from an interpretive perspective. The background of the study, its purposes and research questions are set forth in Chapter I. Chapter II contains a theoretical framework drawn from selected literature. The teachers' social milieu, the description of its settings and the method used in the study are presented in Chapter III. Chapter IV contains the study findings. While the conclusions and applications for further research are presented in Chapter V.

## CHAPTER II

### CONCEPTUAL FRAMEWORK

#### Introduction

The main purpose of this conceptual framework is to build the theoretical grounds upon which to study the problem of teachers' participation in restructuring their workplace. Restructuring here means teachers rethinking the workplace on a variety of levels, including attitudes, ways of doing things and ways of affecting peers and students with whom they interact. Although this study refers to science and mathematics teachers, subject matter is not the issue under examination. Instead, the purpose of this study is to understand how teachers participate in the process of promoting changes that will affect their professional roles.

I chose the participants in this research for strategic rather than theoretical reasons. The teachers who participated in this research were already involved in a restructuring effort that had gained recognition in important forums, in the fields of mathematics and science. Thus, this was an attractive and rich environment in which to seek to understand what role teacher participation could play as an element of successful reform.

It is possible to construct the conceptual framework from an outline. In the outline, educational researchers and teachers, join together to effect changes. The changes will primarily affect the teachers. The basic theoretical issues in this outline can

be described as follows: (1) The existing relationships within both groups are changed because of the interactions between them. (2) The agreed-upon aim of interaction introduces "teaching practices" that both groups regarded as new and likely to promote change in the teachers' practices. (3) The changes in the teachers are of two basic types. First, the group has to establish new relationships to assimilate interactions with the researchers. Second, the group has to change the patterns of its internal peer relationships.

This research sought to observe what happened in a group of eight teachers that included Support Teachers and Peer Teachers (hereinafter referred to as 'participant teachers'). Although the group of researchers and their intervention may be the object of occasional reference, they were not the primary focus of this study.

It is possible to argue that the participant teachers underwent a process of anticipated socialization into a set of norms, which the researchers labeled a "restructuring proposal" (hereafter referred to as "project's proposal"). Hence, this conceptual framework seeks to offer theoretical grounds to understand how this anticipated socialization (which I will call "participation") happened.

### Conceptualizations of Teachers' Participation

It is possible to assume that, through participation, teachers undergo a process of transformation. This change involves interactions between preexisting and new experience, such as that found in the project's proposal. How this happens is the subject of this study. Traditionally, 'burnout' is one, commonly-used explanation for teachers' participation. This is especially true when there is a lack of acceptance of proposed changes. However, I will argue that the 'burnout' approach is improper for fully understanding teachers' participation. Its inadequacy results from viewing the question of participation mainly in terms of teachers' lack of participation.

In order to demonstrate its inadequacy, I will first examine what the literature has to say about burnout as an explanation for teacher participation. Teachers' indifference is indeed a kind of participation not incorporated in the literature. Thus, I will propose alternative concepts to 'burnout. These alternatives are more suitable to developing an understanding of teachers' participation. Critical situation, social character and internal energy, internalization of meanings and professionalism in teaching will be presented as more powerful concepts to explaining the issues involved in teachers' participation.

### **Burnout**

One can study teachers transformation from the perspective of teacher burnout. There is a significant amount of literature addressing teachers' dissatisfaction and frustration from a burnout perspective. The American literature primarily explains the prevalence of isolationism and conservatism among teachers as a result of a burnout phenomenon. From this viewpoint, teachers are portrayed as retreating to a defensive position, in order to avoid facing changing their practice (Hoover-Dempsey & Kendall, 1982; Penny, 1982).

As Freedman (1985) asserted, trying to prove the effect of burn out on teacher workplace reform can be elusive. He concludes that most of the burnout literature has not examined all the issues involved:

The number of articles and workshops that explore the issue of teacher burnout has greatly increased during the past few years. This is occurring at the same time in which many teachers face layoffs and shrinking job markets. The coining of the term 'burnout' at the same time that teachers are threatened with the loss of their jobs serves to direct the focus of each teacher's growing anger away from a critical analysis of schools as institutions, to a preoccupation with their own failure. No one changes from a dynamic teacher into a conservative pedagogue for mysterious personal reasons. Schools as institutions create contradictory feelings and demand contradictory actions from teachers. The rhetoric surrounding the institution of public education often proves to be in direct conflict with the function a teacher finds herself required to perform (p. 259).

The main focus of this dissertation is to find a more rational way of understanding why teachers do participate in efforts aimed at their professional development.

Therefore, a "burnout" perspective will not be used in this dissertation. An explanation based upon the concept of burnout does not recognize the complex occupational and social world where teachers perform their day-by-day decision making (Barnett, 1985; Vavrus, 1987).

Teachers frustration and dissatisfaction may be better understood within another perspective. Such a perspective should provide teachers with opportunities to engage in handling the outcomes of their occupation instead of ascribing their frustrations solely to an alleged failure to cope. Such a perspective assumes that teachers frustration and dissatisfaction, resulting in their decision to engage or not in a certain practice, may be explained within the conceptual context of what I will call a critical situation.

#### Critical Situation

The idea of crisis is important to our understanding of how changes take place. Teachers who have transformed their ways of teaching have done so to overcome critical points in their professional lives. The concept of a critical situation may be derived analogically from the more general concept of crisis as proposed by Habermas (1973). In his study of issues involved in the legitimation of "late capitalism," Habermas (1973) advanced the hypothesis that "social developments involve contradictions or 'crisis.' He set himself the task of elucidating the concept of crisis. The elucidation he offered appears within the realm of his "social-scientific concept of crisis."

Habermas (1973) began with the medical usage of crisis, "the phase of an illness in which it is decided whether the organism's self-healing powers are sufficient for recovery" (p. 1). Then, he defined crisis in the social-scientific sense. What was important to Habermas in borrowing the medical term was the idea that crisis forms a whole with the one undergoing it:

The patient experiences his powerlessness vis-a-vis the objectivity of the illness only because he is a subject condemned to passivity and temporarily deprived of the possibility of being a subject in full possession of his powers (p. 1).

Then Habermas borrowed from the dramaturgical tradition to include the idea that crisis is not an entity that can be imposed over the individual from outside, nor can it be viewed as external to individuals undergoing it.

According to him, in the dramaturgical tradition: The contradiction, expressed in the catastrophic culmination of conflict, is inherent in the structure of the action system and in the personality systems of the principal characters. Fate is fulfilled in the revelation of conflicting norms against which the identities of the participants shatter, unless they can summon up the strength to win back their freedom by shattering the mythical power of fate through the formation of new identities (p. 2).

Later, while addressing the limitations of systems theory in dealing with the concept of crisis in social systems, Habermas (1973) also analyzed the issues of determining the boundaries and persistence of social systems. From this analysis, one can derive an additional principle: "It cannot be unambiguously determined whether a new system has been formed or the old system has merely regenerated itself" (p. 3). The entire insight appears in the following quote:

For organisms have clear spatial and temporal boundaries; their continued existence is characterized by goal values [sollwerte] that vary only within specifiable tolerances. Social systems, on the contrary, can assert themselves in an hypercomplex environment through altering either system elements or goal values or both, in order to maintain themselves at a new level of control. But, when systems maintain themselves through altering both boundaries and structural continuity [bestand], their identity becomes blurred. The same system modification can be conceived of equally well as a learning process and change or as a dissolution process and collapse of the system. It cannot be unambiguously determined whether a new system has been formed or the old system has merely regenerated itself (p. 3).

Habermas (1973, p. 3) asserted that systems theory has a limited grasp of the "range of tolerance within which the goal values of a social system can vary without

critically endangering its continued existence or losing its identity." For Habermas, the primary problem with the systems theory lay in its objectivistic language. That is in a conceptual context where "only subjects can be involved in crisis, systems are not presented as subjects." Therefore, from his criticism of systems theory, it is possible to derive a relationship between individuals and social systems. Simply stated, there is a relationship between individuals and social systems in the ways both are affected by, or co-create, a crisis.

Only when members of a society experience structural alterations as critical for continued existence and feel their social identity threatened can we speak of crisis. Social systems, too, have identities and can lose them. Historians are capable of differentiating between revolutionary changes of a state or the downfall of an empire, and mere structural alterations. In doing so, they refer to the interpretations that members of a system use in identifying one another as belonging to the same group, and through this group identity assert their own self-identity (pp. 3-4).

Thus, Habermas (1973) demonstrated that, like individuals and groups, social systems have identities, too. He points to two aspects: (1) the subjective nature of crisis and (2) the relationship between individuals and social groups or systems. However, in examining the concept of crisis, Habermas (1973) directed his concern to broader social frames. Therefore, to be useful for analyzing participation in small groups or social segments, our concept of crisis requires more elaboration, if it is to be based within Habermas' notion of crisis.

We must establish a conceptual bridge between the concept of crisis as it relates to broader social frames and the same concept in relation to social segments and groups. Theoretically, the key difficulty in building this bridge is in drawing a hard-and-fast boundary between psychological (individual) and sociological (group) explanations. The difficulty is present at the theoretical level and increases as one moves to empirical levels. It is not easy to distinguish whether a certain pattern of action clearly results from personality characteristics or from cultural characteristics. The "authoritarian personality"

study (Adorno, Frenkel-Brunswik, Levinson and Sanford, 1950) exemplified this difficulty. What they presented as a study of the first kind (personality characteristics), Brown (1965) saw as one of the second kind (cultural characteristics). The "authoritarian personality" study was done by interviewing a large sample of people to gather a data base of personality characteristics. However, it was later argued that the study ended up gathering a picture of the common characteristics of a lower-class culture (Brown, 1965, pp. 550-553).

To build the bridge referred to above, it is important to consider the relevance of individuals' interpretations as a channel to study group definition and an assertion of self-identity (Habermas, 1973, pp. 3-4). Group definition and self-identity become particularly important when the study's purpose is to understand processes of change as perceived by participants involved in this change. This is because change involves restructuring the identity of individuals and their patterns of grouping. That is, the way individuals participate in any restructuring process seems to be affected by how they assert their self-identities and by how they interpret themselves as belonging to a certain part of society. Some concepts proposed by Fromm (1968) and Mead (1934) may help us understand this idea. These are the concepts of social character and internal energy contributed by Fromm and Mead's concept of thought as internalization of meanings that I will present next.

I conclude this section by asserting the importance of the concept of crisis. It helped me focus my observations during the study and interpret my findings about teachers' participation.

### Social Character and Internal Energy

The concepts of social character and internal energy (Fromm, 1968) can be used in a conceptual framework to aid understanding the question of teachers' participation. Both concepts involve understanding existing relationships between experiences at



individual and collective levels and social movements. These concepts also provide grounds for understanding both the constitutive traits of culture and its internal contradictions (Fromm, 1968, p. 311). Therefore, they are important in a conceptual frame intended to explain how individual teachers engage themselves in a process of change or resist it.

Fromm (1968) was not interested in deviant cases. Instead, he studied individuals as belonging to groups. His research stressed the aspects of character structure that were common to most individuals in a group. He called this set of aspects "the social character."

The social character comprises only a selection of traits, the essential nucleus of the character structure of most members of a group which has developed as the result of the basic experiences and mode of life common to that group (p. 305)

Fromm's (1968) study offered a remarkable contribution to understanding issues involved in the question of teachers' participation. He developed the concept of social character by analyzing social norms as evolving from individuals' internalization of needs. Fromm analyzed social character as it refers to both individuals and groups, thus aiming at establishing how a character structure would evolve from internalization of certain needs. In so doing, he demonstrated a coherence between individual action and psychological satisfaction: "The subjective function of character for the normal person is to lead him to act according to what is necessary for him from a practical standpoint and also to give him satisfaction from his activity psychologically" (p. 310).

However Fromm's (1968) main concern was the evolution of social character. He stressed that if the purpose of a study was to understand human energy as a productive force in a given social order, then social character should be the main concern in that study. The important point to stress here is that, by having practical and psychological satisfaction in acting according to a certain set of social traits, individuals

incorporate social character in an adaptive process. According to Fromm, "The social character internalizes external necessities and thus, harnesses human energy for the task of a given economic and social system" (p. 310). Therefore, needs may develop in character structures once they have been incorporated at the individual and social levels. As a result, individuals develop an inner authority that controls them more effectively than any external authority could.

It is important to understand, however, that the unique interrelationship between individual and social character may take one of two forms, either a cementing or a contradictory nature. A cementing relationship, one that is "in phase" between individual and social character, may develop when the internalized needs are "at the same time satisfactory psychologically and practical from the standpoint of material success" (Fromm, 1968, p. 312). A contradictory relationship between individual and social character may develop when "the traditional character structure still exists while new economic conditions have arisen, for which the traditional character traits are no longer useful" (Fromm, 1968, p. 312). Hence, acting according to internalized needs may become disappointing and not rewarding for the individual.

Fromm's (1968) proposition of the contradictory relationship between individual and social character, therefore, seems consistent with the idea of crisis at a broader level, as presented by Habermas (1973): "Only when members of a society experience structural alterations as critical for continued existence and feel their social identity threatened can we speak of crisis" (pp. 3-4).

Thus, by combining (1) the concept of crisis (Habermas) and (2) the relationship between individual and social character (Fromm), it is possible to speak of a critical situation as a combination of elements coming from both the individual and the social character of his/her group.

Another important concept introduced by Fromm (1968) is the one of "internal energy," which he used to explain an individual's drive to participate in social

movements. To demonstrate this concept, he used the example of the drive to work as a trait in western society. Fromm (1968) explained the adherence of individuals to this trait in terms of the internalization of external necessities, generating an internal energy at the individual level that is coherent with societal needs. In this context, the drive to work was a situation where "psychological forces are cementing social structures" (p. 311). According to Fromm, the "desire [of the individual] to act as he has to act" (p. 311) made it easy to accept the need for working.

However, internal energy does not always cement social structures. Sometimes individuals may rely on a character structure at the individual level that is no longer consistent with the social requirements coming from the context in which they perform. For Fromm (1968) changing economic conditions exemplify this issue: "The traditional character may still exist, while new economic conditions have arisen, for which the traditional character traits are no longer useful" (p. 312).

The social milieu may present requirements for which the individual's usual performance is no longer a match. Therefore, a contradiction arises between the individual character and the evolving social character. The internal energies may thus oppose, rather than cement, social structures. However, the movement from a certain level of coherence to contradiction and the movement from contradiction to a new level of coherence is a long-term process. During such a process, individuals may experience a period of ambiguity in accepting their character, established as result of their past experiences. In addition they may be skeptical about its actual possibility to provide psychological satisfaction. This ambiguity characterizes a critical situation in which acceptance and resistance are both options as channels for displaying internal energy.

In this section I explored the concepts of social character and internal energy (Fromm, 1968). Those concepts were helpful in studying teachers' participation, especially in understanding relationships between experiences at the individual and collective levels.

### Internalization of Meanings

Another issue within this conceptual framework is that of how external necessities become internalized, gain meaning and, therefore, shape both the individual and the social character. This question is especially relevant for understanding processes of individual and group changes, as is the case in this dissertation. In this study, the phenomenon of teachers' participation is examined in a context where an existing order, incorporated in teachers' experiences, is being challenged. The challenge to the established order may bring about new needs. Once the individual tries to satisfy those new needs, he/she will become more and more aware of them. As a consequence they will gain meaning and become internalized. Understanding how meaning is internalized requires an interpretive approach to the study of social phenomena, such as teachers' participation.

The traditions of interpretive sociology (Natanson, 1973; Schutz & Luckman 1973; Weber, 1949), of symbolic interactionism (Blumer, 1969), and of reality viewed as socially constructed (Berger & Luckmann, 1966) offer a conceptual basis to address the phenomenon of internalization of meanings. Each one of the scholars mentioned above, has contributed to what I refer to as the "interactionist argument". In general terms, the interactionist argument is that people construct their social world through their interpretations and actions. Interactionism focuses on social action and stresses negotiation of meanings as a way to construct social order at a given level. Meanings may be negotiated both in episodic encounters and in long-lasting socialization processes over the life history of the individual.

Both Weber and Schutz were exponents of interpretive sociology. In his lengthy discussion of the issue of objectivity in social sciences, Weber (1949) described the distinctions between an interpretive and a quantitative approach in those sciences:

There are, to use the words of Vischer, "subject matter specialists and interpretative specialists." The fact-greedy gullet of the former can be filled only by legal documents, statistical worksheets and questionnaires, but he is insensitive to the refinement of a new idea. The gourmandise of the latter dulls his taste for facts by ever new intellectual subtleties. That genuine artistry which, among the historians, Ranke possessed in such a grand measure, manifests itself through its ability to produce new knowledge by interpreting already known facts according to known viewpoints (p. 112)

Many of Weber's propositions have been surpassed by the evolution of social theory. However, one concept that remains useful in researching social relations is that of ideal types. Weber refers to the concept of ideal types as a conceptual pattern, a hypothetical construct built by emphasizing shared aspects of individual behavior or of institutions which are empirically observable. As Weber (1949) explains it, "substantively, this construct [ideal types] in itself is like a Utopia which has been arrived at by the analytical accentuation of certain elements of reality" (p. 90). Further, he describes the basic characteristics of the concept and its utility in research:

The ideal typical concept will help to develop our skill in imputation in research: it is no "hypothesis" but it offers guidance to the construction of hypothesis. It is not a description of reality but it aims to give unambiguous means of expression to such a description (Weber, 1949, p. 90).

It is important to note that an ideal type should not be confused with a model, although both are constructs involving interpretations of components of reality. Weber (1949) himself demonstrated the basic difference:

What is the importance of such ideal-typical constructs for an empirical science, as we wish to constitute it? Before going any further, we should emphasize that the idea of an ethical imperative, of a 'model' of what 'ought' to exist is to be carefully distinguished from the analytical construct, which is 'ideal' in the strictly logical sense of the term. It is a matter here of constructing relationships which our imagination accepts as plausibly motivated and hence, as 'objectively possible' and which appear as adequate from the nomological standpoint (pp. 91-92)

The concept of ideal types is useful in studying phenomena such as the internalization of meanings into a preexisting frame of experience. This is due to the intrinsic connection between internalization of meanings at the individual level and larger social aspects. Ideal typification makes the description of those connections possible, as well as making sense of what is happening at an individual level. Thus, ideal typification is an important concept to be used in interpretive approaches to research.

Natanson (1973) indicates that Schutz, an exponent of interpretive sociology, draws on phenomenology as he analyses the problem of social reality and offers his contribution to the study of that reality. For him, interpretation is not only proposed as a tool for the researcher but as privileged way of making critical sense of his world. According to his viewpoint, an interpretive approach is not only a suggestion but a requirement if social phenomena are to be understood:

The stress upon action as the starting point for a methodology of the social sciences is not only a plea for a new kind of knowledge; it is rather an insistence on the qualitative difference between the kinds of reality investigated by natural scientists and social scientists. It is a plea for appreciating the fact that men are not only elements of the scientist's field of observation but pre-interpreters of their own field of action, that their overt conduct is only a fragment of their total behavior, that the first challenge given to those who seek to understand social reality is to comprehend the subjectivity of the actor by grasping the meaning an act has for him, the axis of the social world (p. XLVI).

Natanson (1973) states that, within the interpretive approach proposed by Schutz, "the social scientist's task is the reconstruction of the way in which men in daily life interpret their world" (p. XLVI). Therefore, if the participation of teachers in this research is to be explained in terms of internalization of meanings, one has to find out what interpretation the teachers studied may offer.

Interpretation, in the sense presented here, is more than just a way for people to make sense out of their daily lives. It also is an instrument to sustain a social reality. A popular description for sustaining social reality is the ensemble of meanings resulting

from individual participant's actions, as well as from joint actions. The conceptualization of this ensemble is one of the contributions of symbolic interactionism.

Blumer (1969) is one of the first organizers of the basic tenets of symbolic interactionism. He understands Symbolic Interactionism within the realm of three basic premises organized in the following sequence: (1) "Human beings act toward things on the basis of the meanings that the things have for them" (p. 2). As used here, "things" may include a range of notions since, according to Blumer (1969), the word "includes everything that the human being may note in his world" (p. 2). The notion of "things" comprises physical objects, other human beings, categories of human beings, institutions or a government, guiding ideals, activities of others, "and such situations as an individual encounter in his daily life" (p. 2). (2) "The meanings of such things are derived from, or arise out of, the social interaction that one has with ones' fellows" (p. 2). (3) "Meanings are handled in, and modified through, an interpretative process used by the person in dealing with the things he encounters" (p. 2).

In discussing the nature of symbolic interactionism, Blumer (1969) asserts that, with regard to the proper understanding of meanings, the primary difference between it and behaviorist, realist and idealist perspectives is that "symbolic interactionism sees meanings as social products, as creations that are formed in and through the defining activities of people as they interact" (p. 5).

However, what further distinguishes symbolic interactionism is what Blumer (1969) describes as the process of interpretation. He describes this process as one in which individuals incorporate the social construction by participating in it. This process has two distinct steps:

The actor indicates to himself the things toward which he is acting. He has to point out to himself the things that have meaning. The making of such indications is an internalized social process in that the actor is interacting with himself. This interaction with himself is something other than an interplay of psychological elements; it is an instance of the person engaging in a process of communication with himself; interpretation becomes a matter

of handling meanings. The actor selects, checks, suspends, regroups and transform the meanings in the light of the situation in which he is placed and the direction of his action. Accordingly, interpretation should not be regarded as a mere automatic application of established meanings but as a formative process in which meanings are used and revised as instruments for the guidance and formation of action (p. 5)

To adopt a symbolic interactionist approach one must embrace the following key concepts proposed by Blumer (1969), the concepts of: (1) human groups, (2) social interaction, (3) objects, (4) human action and (5) joint action.

Human groups are defined as human beings that are engaged in action. The idea of action is an important construct for interactionists, not only for representing the result of human endeavor, but because action is what defines human groups:

The import of this simple and essentially redundant characterization is that fundamentally human groups or society exists in action and must be seen in terms of action. This picture of human society as action must be the starting point (and the point of return) for any scheme that purports to treat and analyze human society empirically. (p. 6)

The concept of social interaction is consistent with the concept of human groups. It is viewed as a process that forms conduct:

Put simply, human beings in interacting with one another have to take account of what each other is doing or is about to do; they are forced to direct their own conduct or handle their situations in terms of what they take into account. Thus, the activities of others enter as positive factors in the formation of their own conduct; in the face of the actions of others one may abandon an intention or purpose, revise it, check or suspend it, intensify it, or replace it (Blumer, 1969, p. 8).

Interactions can be either non-symbolic or symbolic. What makes an interaction symbolic is the intervention of interpretation. By interpreting, actors seek to understand the meaning of each other's action, and this constitutes the human's characteristic mode of interaction.

According to Blumer (1969), George Herbert Mead sees symbolic interaction "as a presentation of gestures and a response to the meaning of those gestures" (p. 9). It can



be said that two parties engaged in an interaction understand each other when a gesture has the same meaning for both actors. From this, meaning is seen to flow out along three lines, usually referred to as Mead's triadic nature of meaning:

It [meaning] signifies what the person to whom it is directed is to do; it signifies what the person who is making the gesture plans to do; and it signifies the joint action that is to arise by articulation of the acts of both (p. 9).

Any misunderstanding in any one of the lines of the triad may lead to an ineffective communication that prevents interaction and blocks any possible joint action.

Symbolic interactionists see the world as composed of objects. However, rather than indicating any realistic way of seeing the world, objects, themselves, are seen as socially constructed. Whether they have a physical, social, or an abstract nature, objects are a result of social interaction.

The meaning of anything and everything has to be formed, learned, and transmitted through a process of indication - a process that is necessarily a social process. Human group life on the level of symbolic interaction is a vast process in which people are forming, sustaining, and transforming the objects of their world as they come to give meaning to objects (Blumer, 1969, p. 12).

It is important to understand symbolic interactionism as a theoretical alternative to behaviorism. That is why human beings are defined as acting organisms, as opposed to responding organisms, as defined by the behaviorist tradition. What does it mean to act? Blumer (1969) shows that the answer is a process of constant construction.

It means that the human individual confronts a world that he must interpret in order to act instead of an environment to which he responds because of his organization. He has to cope with the situations in which he is called on to act, ascertaining the meaning of the actions of others and mapping out his own line of action in the light of such interpretation (p. 15).

For symbolic interactionists, human group life consists of systematic attempts to fit lines of action to each other. The articulation of the actors' lines of action make

possible what is called "joint action." Since the term "joint action" may have wide usage within social sciences, one should be aware of its distinctive meaning for symbolic interactionists. Symbolic interactionism attributes a more important status to "joint action," as a concept than would many of the traditions in the social sciences. Instead of defining it in terms of aggregation of diverse participants' conduct, joint action gains a distinctive character. Although that character is constructed out of a linkage of actions, it is conceptualized as a dimension apart from what is being linked. Thus, the whole is made up of several parts, but gains a distinctive character as a whole. As Blumer (1969) describes it: "the joint action may be identified as such and may be spoken of and handled without having to break it down into the separate acts that comprises it" (p. 17).

An important implication of distinguishing individual and joint action is the perspective opened for understanding of new situations for individuals and groups.

New situations are constantly arising within the scope of group life that are problematic and for which existing rules are inadequate. . . we have to recognize that even in the case of pre-established and repetitive joint action each instance of such joint action has to be formed anew. The participants still have to build up their lines of action and fit them to one another through the dual process of designation and interpretation (Blumer, 1969, p. 18).

In this section I explored the idea of internalization of meanings and stated: (1) its relevancy for understanding the processes of individual and group changes and (2) that an interpretive approach is needed to understand how meanings are internalized.

### Professionalism in Teaching and Teachers' Participation

Another important issue in this conceptual framework is the conceptualization of professionalism. Burke (1971) sees two basic ways of conceptualizing professionalism. The first is related to a more strict concept of profession in which the key point is whether

or not there is external control over the performance of the tasks involved. It is difficult to regard teaching as a profession under this strict conceptualization of professionalism.

The essence of professionalism, in its strict form, is that the members of any profession are not employees working for a fixed wage or salary according to standardized rates, but they perform specific tasks for individual clients for a fee. A professional is highly-trained and provides a very specialized service which is exclusively available from members of that profession. Professionals are not subject to external control in the performance of their occupation; their conditions of work are determined by a representative council of practitioners, which enjoys autonomy within statutory limits. Professionalism involves public recognition of the competence of an occupational group, as well as statutory provision, acknowledging this competency and autonomy within the sphere of the occupation. The professions derive their status, therefore, as much from public esteem as from this statutory provision (p 125).

Another more general form of professionalism is also presented by Burke (1971). He speaks of professional status rather than of professionalism: "Professionalism in this more general sense refers to those occupational groups whose members are largely responsible to their own consciences for the quality of their work, rather than to some taskmaster or external yardstick" (p. 125).

According to Burke (1971), the teaching profession is more likely to be considered as enjoying "professional status" than to be regarded as a profession. The problem with professional status is its instability, which leads to weakening teachers' autonomy instead of contributing to it. The weakening of teachers' autonomy is the result of their professional status being sometimes a concession of their employers rather than their permanent conquest (Ozga, 1985, pp. 236-254).

Burke's (1971) position does not imply that teaching will never reach full recognition as a profession. In the following quote, Burke indicates the main problems to be faced by teachers who wish to be recognized as professionals:

Teaching must acquire some of the characteristics generally attached to professionalism. Teachers must, first of all, convince the public of their competence, which may lead to an improvement in the status of teaching. To do this they must place their competence beyond any reasonable doubt

by vastly improving the teacher training courses and by considerably altering their attitudes towards their professional practice. At the same time, legislation must be enacted which will provide teachers with some of the rights enjoyed by other professions, especially where their own authority is concerned (p. 125).

In the American context, there are many forces in place pushing forward the issue of teacher professionalism. Unionism, especially as practiced by the American Federation of Teachers (AFT), is one of them. AFT top-level officers, when speaking about the organization's policy seem, to indicate realization of the dilemmas imposed by the issue of professionalism. For instance, choices at hand during a bargaining process may show how critical it is to choose between keeping jobs and pursuing teachers' relative professional status. In the case of the AFT, what is becoming apparent in the news (The Wall Street Journal, November, 24, 1987 p. 66), however, is a significant change regarding the concept of professionalism. The AFT is progressively moving away from "bread and butter" issues -- those related to working conditions, benefits, salaries and welfare of teachers. For instance, by offering its support to programs involving the restructuring of schools and of teachers' roles such as the STP, the AFT is aiming at a longer-term goal of establishing teaching as a profession. The AFT, as a union, appears to have chosen restructuring schools and teachers' roles as ways to change public opinion about teachers' competence and, ultimately, to reach full professional recognition for teaching (Brandt, 1990).

Teachers' awareness of this strategy may lead to tensions between activism for teachers' welfare and activism on educational issues such as restructuring of schools and of teachers' roles. Studies have shown that these tensions may become paradoxical for teachers (Bullough, 1982, p. 208). Teachers' uncertainty about the trends mentioned before may explain, to some extent, teachers' acceptance of, or resistance to, changes when the actual reform comes to their level (Ozga, 1985, pp. 236-254). Also, there are indications in the literature that unless teachers are willing to undergo significant changes

in the way they handle their occupation, they might undermine their own recognition as professionals (Burke, 1971, p. 125).

The concept of professionalism summarized in this section, especially the one advanced by AFT, was very important in conducting this study. The teachers I studied at Uniontown were undergoing a process of balancing their engagement and activism in welfare issues at large and in educational issues. The concept of professionalism helped me understand and interpret that tension.

Thus far I have marshalled the theoretical grounds for teachers' participation in restructuring their work place from a sociological viewpoint. The challenge in studying social phenomena is to grasp the meaning of events for participants without imposing a predetermined frame of reasoning over the social reality observed. I have relied on Weber's concept of ideal types to frame a snapshot of how teachers participated during the time of my data collection. My understanding of the phenomenon, both during the time of observation and during the analysis, was based on a conceptual web whose lines I indicated earlier in this chapter.

In pulling these lines together, I will refer to Figure I, (on page 30) which graphically represents this integration.

Teachers' participation as a phenomenon can be seen in terms of a cycle that begins with the interplay between individual and social character (Fromm, 1968). This interplay generates a drive to participate, since individuals are always trying to maintain equilibrium between the two dimensions. In either cementing or contradicting one another, social character and individual character generate what Fromm (1968) calls internal energy. It is due to the compelling manifestation of internal energy that people engage themselves in social interactions. By engaging in social interactions, individuals are also engaged in negotiating meanings with other individuals, as implied by Schutz & Luckman (1973), Mead (1934) and Blumer (1969) in their interpretive and symbolic interactionist perspectives. Interaction and negotiation of meanings generate a propitious

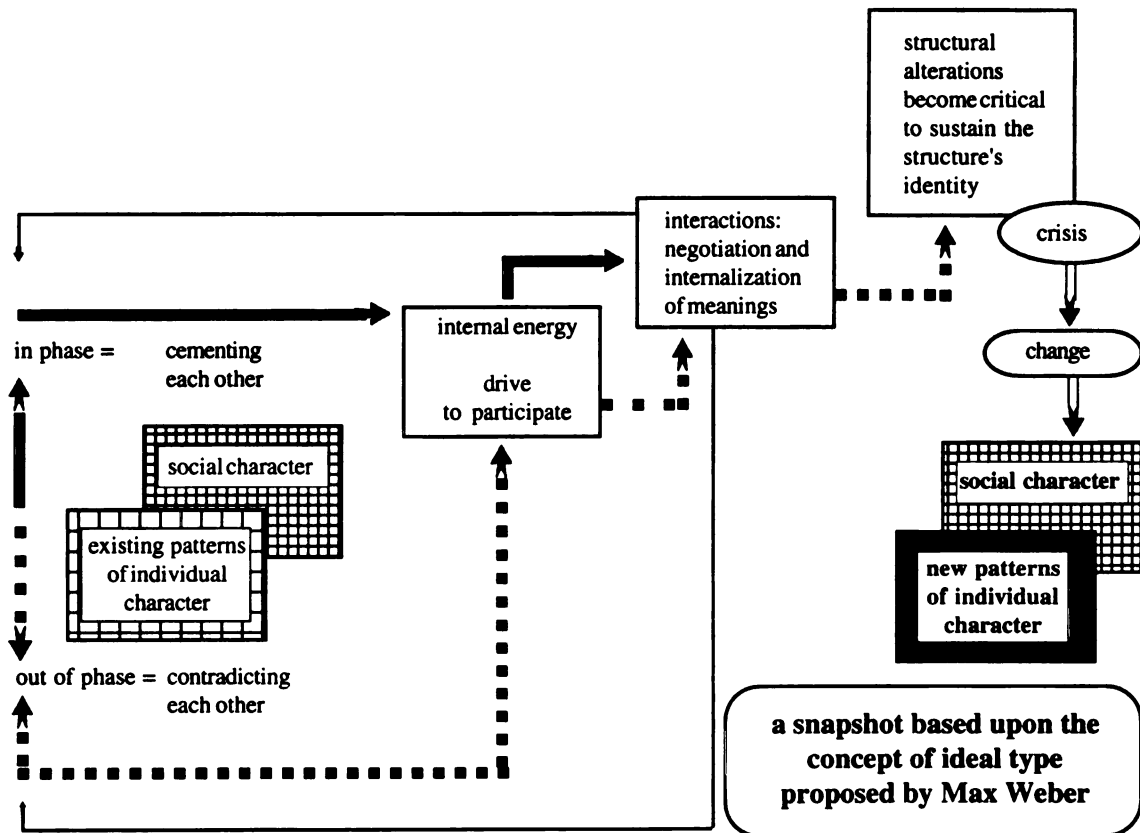


Figure 1. Conceptual Framework

environment for individuals to internalize those negotiated meanings as implied by Fromm (1968). Meanings are internalized through a complex process as I explained on the section on internalization of meanings at page 20. Once internalized, meanings are incorporated into the individual and the social character, thus restarting the cycle. This interplay is one that reinforces cementing relationships that assure stability to individuals and groups, or widens contradictions and instills crisis. An explanation of crisis is provided by Habermas (1973). Contradictions between individual and social character can widen to the point where individuals or groups are compelled to regain stability by making structural alterations to the existing structure. It is at this point that a critical situation can be said to take place. Changes resulting from crisis will reestablish both individual and social character in new terms. This is a process that can be established only by an individual's own initiative.

## CHAPTER III

### SOCIAL MILIEU, RESEARCH SETTINGS AND METHODOLOGY

In this chapter, I will describe the research setting and the methodology used in this study. However, before I begin, I will make an excursion into some historical and contemporary social aspects of Uniontown the place of this study. The purpose for this excursion is twofold to: (1) provide readers with insights into the social milieu that forms the background against which the Support Teachers Program (STP) took place and (2) better understand the context and the setting in which I conducted the study.

Historically, Uniontown's community had demonstrated a disposition towards critical assessment of its education system and searching for solutions. One of the local newspapers which I will name, *The Sword*, to protect suspect's anonymity has concerned itself with educational matters since its early issues. In addition, it is a rich source of historical evidence about these matters. For instance, the December 15, 1847 issue published the following statement from a parent:

We have four public schools which probably average 100 [students] each, and we do think that our schools should occupy a more important station in the public mind than they do, and that more attention should be paid to them by parents and by our citizens generally.

One year later (December 1, 1848), *The Sword* published the following editorial :

As yet no local organization has ever been adopted by our citizens, and as consequence, we are nearly destitute of good schools, indeed without any,



except such as have sprung up under the district system. There are some four or five hundred children in our city growing up in ignorance

The latter were references to the district schools created under a law of 1846 that may be viewed as birth of the U.S. schools system. It is also interesting to note that some of the current problems and issues of concern in Uniontown's public school system were also present in those early district schools. For instance, two segments of society were left out of those early public schools: (1) the affluent and (2) Afro-Americans. The affluent sent their children away for better schooling or, alternatively, to local private schools called "Select Schools". The Afro-American members of society were excluded from the existing schools and had to find their own way to education. For instance, the February 9, 1850 issue of *The Sword* described the recently-created Colored School Association (CSA), organized in January 23, 1850. The CSA's goal was to promote education in the local Afro-American communities. Both groups, for very different reasons, were very critical of Uniontown's public schools.

There are indications that these historical trends were pervasive. For instance, an 1860-era, Uniontown, tourist guide offered indications that a changing demography was leading to a progressive ghettoizing of minorities, especially Afro-American minorities, in Uniontown's urban areas. As shown in the same guide, the response of the affluent community was to move into suburban areas.

Today, these same problems seem visible again. Current issues of The Sword show that Uniontown's community did not approve a millage increase, as proposed by the school district, to finance the current level of expenses. Articles, letters to *The Sword's* editor, and other sections (March 14 and March 26, 1991 issues) indicate that Uniontown's community is still very critical of its public school system. The extension of the problems faced by the schools is summarized in the following quote extracted from the January 1991 issue of *The Sword*:

The Uniontown public school crisis was not born of contemporary circumstances. It began a long time ago. It began when rigid residential segregation - hence, all-black and all-white schools dominated the public school map--was a part of the accepted city mores. It began when there was a master-servant relationship--when the power of the superintendent of schools was absolute. When the word came down from the central administration it was the law. It was not negotiable. The field commanders--the supervisors, principals and assistant principals--carried out the orders of the day and the teachers obeyed like puppets. It began when poorly organized teachers were woefully underpaid, like many other white-collar professionals and public servants, including policeman and fireman. It began when there was strong taxpayer resistance to providing additional revenue to meet the need for higher salaries to attract quality personnel and to upgrade facilities and curricula (January, 1991).

From what has been shown so far, one may infer that Uniontown's communities were generally, critical of the school system and willing to gauge, accordingly, the support they would provide to the schools. As a consequence, the school district and the school personnel, including the Uniontown teachers, were historically forced to analyze their weaknesses and fight for community support.

These inferences are important to this dissertation. They support the assertion that teachers in Uniontown had to survive professionally in a hostile environment. Consequently, self-assessment of their weaknesses and the search for acceptable solutions have always been found in most experienced teachers at Uniontown. Some understanding of Uniontown's social milieu is important to reach a greater understanding of the background in which the STP was placed: (1) the AFT program--representing a specific kind of unionism stressing the concept of "profession as ownership" and (2) the demographic changes leading to concentration of minorities--especially Afro-American minorities--in Uniontown's urban areas.

### The AFT Program

The AFT program is a significant component of the social milieu in which the STP was developed. Part of this program is a distinctive kind of unionism which, since the onset of the Association in 1916, developed around the idea that teaching

professionals should have a strong sense of ownership the decision-making process in schools. Even though the AFT's distinctiveness is sometimes played down its roots of connection with the labor movement gives it a worthwhile and distinctive perception of the teaching profession.

Prior to the early 1900s, life in the U. S. could be described in terms of a pastoral tempo within which the teaching profession should be understood. Teachers' lives could be summarized in terms of isolation. According to Eaton (1975), isolation for both rural and city teachers was a pervasive aspect observed in all persons who taught. The cause of the isolation was twofold. As explained by Eaton, the first cause of teachers' isolation was "separation from other adults and separation from both seediness and beauties of life that give vitality" (p. 2-4). In other words, isolation was a consequence of teachers spending most of their time "monitoring childish whims and in checking immature behavior" (p. 2-4. As Eaton (1975) declared, by the end of the last century American,

"teachers were not allowed to mingle with people deemed socially unacceptable, participate in political affairs, spend their money as they chose, and in the case of the women teachers, not even allowed to fall in love" (p. 2-4). He further explained that sometimes teachers "banded" together but, when they did it, "it was usually at the bequest of a school official with the objective of promoting social interests" (p. 2-4).

However, regarding teachers' professional awareness, "these groups did not become forums for talking about solutions to the pressing school problems" (Eaton, 1975, pp 2-4). In conclusion, to be a teacher meant isolation.

The life tempo in the U.S. was dramatically changed by phenomena such as immigration, industrialization, urbanization, and unionization at the turn of the century. One by one and as a whole, these phenomena made up the substratum for teachers to set into motion a movement to organize themselves. The AFT is one example of this kind of organization. It was founded in 1916 as a result of the gradual formation of various local teachers' organizations.

AFT leadership came mainly from Chicago and New York. In Chicago, for instance, the main issue that helped teachers become involved in taking their organization to a national level was the fight against the anti-union Loeb rule of the Chicago Board of Education (Urban, 1982). One of the most distinctive characteristics of AFT—one that still holds true (*The New York Times*, Wednesday, July 6, 1988)—was its affiliation, since its onset, with the American Federation of Labor (AFL) and, therefore, with organized labor in the USA.

By May 9, 1916, The Chicago Teachers Federation; The Chicago Federation of Men Teachers; The Chicago Federation of Women High School Teachers; The Gary, Indiana, Teachers Federation; The Teachers Union of the City of New York; The Oklahoma Teachers Federation; The Scranton, Pennsylvania Teachers Association; and High School Teachers Union of Washington DC, became the first eight locals and were duly received by president Gompers into the American Federation of Labor (AFL) as the American Federation of Teachers (Eaton, 1975, p. 15).

Even with the help of an already-organized labor institution (AFL), the task in front of the newly born federation was enormous. It was to try to capitalize on the labor effervescence of the early 1900s while, at the same time, attempting to shake up teachers' norms of silence and timidity. To understand the dimensions of this task, one could compare Bagley's and Dewey's views on this subject. William C. Bagley, from Teachers College, was a prominent writer in educational administration. In the 1919 edition of his book, *Classroom Management*, he made a close association between unquestioned obedience by teachers and their efficiency. Their resignation was the only alternative left to teachers that could not yield such obedience (Bagley, 1919).

John Dewey, an important member of the AFT, shared with Bagley the same academic environment of Teachers College (Eaton, 1975, p. 35). His statement about what the behavior norm of teachers should be makes clear a significant gap between what messages were given to administrators and to teachers regarding the understanding of teachers' participation:

We should have a body of self-respecting teachers and educators who will see to it that their ideas and their experience in educational matters shall really count in the community; and who, in order that these may count, will identify themselves with the interests of the community; who will conceive of themselves as citizens and as servants of the public, and not merely as hired employees of a certain body of men. It is because I hope to see the teaching body occupy that position of social leadership which it ought to occupy, and which to our shame it must be said we have not occupied in the past that I welcome every movement of this sort (Dewey, 1916, pp. 99-101).

It is possible to assume that this gap originated within the widely radicalized perspectives about teachers' roles entertained at that time. Against positions such as the one expressed by Bagley, the AFT would propose, with Dewey's support, a leading role for teachers in issues affecting school life and their work. This leading role would address issues such as curricular offerings, quality of the teaching force, and schools' organization. The following excerpts from a manifesto issued in New York in 1913, calling teachers to organize themselves, show that these issues were a concern to the early founders of the AFT.

To the teachers of New York City:

Believing that the time has arrived for founding an organization of teachers on progressive lines, we, the undersigned teachers of the city of New York issue this call to teachers and other citizens to organize an association which shall have for its objectives improved working conditions for teachers and better educational results for children.

Teachers should have a voice and vote in the determination of educational policies: We advocate the adoption of a plan that will permit all teachers to have a share in the administration of their own schools. In no more practical way could teachers prepare themselves for training children for citizenship in democracy (Eaton, 1975, pp. 13-14).

As the AFT proposed an active role for teachers in defining the policy making process affecting schools, it developed a kind of unionism that stressed the need for teachers to become more and more the professionals of teaching. Thus, the concept of

professionalism has been key to AFT's unionism. The origins of this concept can be traced back to the progressive education movement. Many educators who were part of the early progressive group at some point expressed their dissatisfaction with the progressive ideas. They started aligning themselves with a new program of ideas called social reconstructionism. According to Eaton (1975), there were significant differences over unionism among the social reconstructionists. For instance, George Counts and John L. Childs were active in the teachers union movement. But, Kilpatrick and Newlon, although sympathetic, were skeptical of union affiliation. Because of the great importance of Teachers College in shaping American education at that time, these differences caused confrontation between members of the Teachers College faculty. A pivotal issue in the confrontation was the concept of professionalism and the use of tactics of the labor movement to organize teachers into a union. Those labor tactics were not considered as adequate since teachers were taken as members of a profession, not as workers.

AFT's officers were aware of that debate. The organization's concept of professionalism, then, has shown potential for three achievements:

- (1) strategically, to prevent the organization from sliding into a "teachers as workers" idea, which would not be widely accepted by many teachers; (2) tactically, to keep a strong enough association with organized labor, as practiced by AFL, to take advantage of the labor issues that were current in the twenties; and (3) since the strategic and the tactical movements were not clashing with each other, to keep the long term-goal of gaining increased power for teachers as a social group.

This concept of professionalism served as an umbrella under which content evolved within the AFT's program. Professionalism covered, in the beginning, issues regarding the improvement of working conditions or teachers' welfare. When submitted to collective bargaining, these issues would bring immediate benefits for teachers. This can be seen in a study of the role of teacher organizations in making educational policy (Rosenthal, 1969). The activities of nine teacher organizations in large American cities

were examined, four of them affiliated with AFT. The aim was to analyze how and why teachers' participation and relative power had developed in large cities, especially in the first half of the 1960s. The study indicates that in that period, issues related to improvement of teachers' working conditions were the main agenda. The main argument in favor of such an agenda was that "a favorable resolution of matters involving working conditions or economic welfare promises direct, immediate and personal benefits to teachers" (p. 165). Other issues such as improvements in the quality of the teaching force, the education of the underprivileged, curricula offerings or the way in which schools were organized and managed were not given so much attention by teachers' organizations. According to Rosenthal (1969), they were viewed by teachers organizations as "mainly designed to serve the entire system and only indirectly promise to help individual teachers" (p. 165). Teachers organizations did not devote too much energy to such matters.

Since then, the comprehensiveness of the concept of professionalism has undergone significant change. It has moved from the "bread and butter" issues, related to the working conditions and welfare of teachers, toward a longer-term goal of restructuring schools. Therefore, improving the quality of teaching, education of the underprivileged, and method of school management became issues in the teachers' organizations. At the national level, this change was signaled to AFT locals by its national president.

*The Wall Street Journal*, for instance, offers the following analysis of this new phase.

Times have changed, and with them Mr. Shanker. The American Federation of Teachers president--once a national symbol of militant unionism — is widely praised as a respected educational leader who's visions of American school reform have shaken up the status quo. His major theme is the need to "professionalize" teaching, to make it more like doctoring or lawyering. 'Public education in America today is perhaps at the same place the auto and steel industries were 15 years ago,' he says. 'To preserve our industry we can't just support the status quo or minor

cosmetic changes. We can't just put new tailfins on. We've got to build a new car' (The Wall Street Journal, November, 24, 1987, p. 66).

Uniontown's AFT Local has seen the STP as a program that fits this new perception of professionalism, one that is connected with a major and concerted effort at restructuring schools. This is what may be inferred from the following excerpt of a letter from the president of the AFT's local to MU, expressing support for the STP.

The support teacher concept fits perfectly with our career ladder and other peer review processes. The information we are acquiring and the techniques we are perfecting certainly should be useful to the nations' school reform efforts (Letter to the Research Institute's director on May 27, 1988).

This statement was remarkably consistent with the words of Albert Shanker, President of the AFT, taken from a speech given in 1988 and reported in the *New York Times*. The contention of the speech is that the recent wave of educational reform has bypassed 80% of the student population. This means that the changes implemented have addressed the needs of only a small number of that population:

Mr. Shanker proposed during his speech that small groups of teachers should be allowed to design and run customized curriculum in schools. Parents should have an option of enrolling their children in these programs. Further he defended that these programs should involve students of a variety of backgrounds and learning skills. He also mentioned in the speech that he would ask AFT's locals to consider developing plans for such programs. (*The New York Times*, April 1st, 1988)

Thus, according to the letter from the president of the AFT Local at Uniontown, the STP fit the propositions of this statement. It is also worthwhile to note that, by advocating the pursuit of reforms with a wider time horizon, the AFT was actually reinforcing its philosophy of fighting for a concept of professionalism that could lead to increased autonomy for teachers. At the local level, however, not all teachers, even among AFT membership, understood that philosophy. As a result, implementing this



kind of restructuring faced contradictory reactions, as will be shown in the next chapter.

### The Changing Demography

Another significant aspect of the social milieu in which the STP was developed is the demographic change occurring in Uniontown. As mentioned earlier, a tourist guide published in Uniontown in the 1860's, mentioned that minorities living in Uniontown were gradually concentrating within the urban areas. The same source indicated that the response of the affluent groups was to move into suburban areas. I will refer to this phenomenon as one of changing demography and will address some of its implications for my study of teachers' participation.

A comprehensive study of the effects of changing demography upon the mission of a Catholic school was conducted in Australia (Angus, 1986). The school started its activities when a group of Irish priests, referred to in the study as Christian Brothers, came to Australia with the clear mission of working with poor Irish communities. As time passed, those communities evolved gradually into second and third generations of affluent means. The upgrading of living standards of that community brought contradictory reactions among the school's personnel, especially the teachers. Even though the upgrading could be attributed to the action of the school to a certain extent, teachers were unsure about their proper role. Some claimed that the school did not have a mission anymore, for its purpose was not to serve the affluent community. This position was supported by what was perceived as a clash between the values being conveyed by the school and those of the attending students. However, those affluent groups that had emerged from poor families of earlier years were still willing to have their children in the same "good" school they once had, and which they regarded as an important element in their social promotion. For this reason, some teachers and administrators would claim that the school had only to adjust to its new clientele, and, therefore, to change its mission.

Angus' (1986) study describes the effects of changing demography on the mission of a school and on the professional responsibility understood by teachers, in a given historical and social moment. Also, the study shows how teachers may become confused and disturbed by the mismatch between their perceived mission and the expectations of the families and students served by the school. Some participants in Angus' (1986) study were unsure about their social role as educators in the changing social environment they faced.

In Angus (1986) study the question of changing demography is addressed in a context of success. What threw the teachers into confusion as to how to understand their mission was the progress toward affluence made by the poor social groups of other times. Having their minds set to deal with poor communities, the teachers were uncertain about what to do with students coming from affluent communities.

In Uniontown, a similar phenomenon is occurring, although with different historical and ideological configurations. The changing demography is displayed in the movement of minority groups into the urban areas, resulting in a movement of affluent groups to suburban areas. Schools once attended by affluent groups became populated by an increasing number of minority groups. I would like to address this issue of changing demography from a larger perspective, and identify ways in which the situation in Uniontown seems to be similar.

As seen in the beginning of this chapter, the public school system in Uniontown evolved from a design that was not originally conceived with minority groups in mind. In this way, Uniontown seems to mirror a similar national pattern of schooling in places with demographic concentration of minorities. Historically, minority groups were not adequately considered by the public school system since it was mainly designed to provide schooling for affluent groups. For instance, when the civil rights movement brought equal rights for minorities, one of the major gains was equal access to schooling. As pointed out by Aronowitz (1981), minority groups in the civil rights movement fought

for equal access to schooling because they saw school as the main locus of struggle for effective social change. The price they had to pay was gaining access to schools that were not used to considering their cultural heritage.

More recent studies have demonstrated the persistence of this problem. For instance, what places Afro-American students at risk is a conflict between a school's beliefs and its practices. This is characterized, on the classroom level, by a lack of understanding of Afro-American student cultural values, norms, styles, and language (Irvine, 1990). It is also important to take into account the pervasiveness of the crossing over of social mobility and race as an overall aspect of changing demography in some instances. Despite concrete steps towards racial integration in the U. S. schools, some scholars perceive integration more as an icon within persistent racism (Maraniss, 1990).

However, in this dissertation, the phenomenon of changing demography is addressed because of its effects on teachers' participation. Both studies, the one by Angus (1986) and the one by Irvine (1990), support the conclusion that changing demography can have a disturbing effect upon teachers. They may experience difficulty in defining what to do, both in terms of self-initiated changes and in those areas in which their participation is invited.

It is clear that Science and Mathematics teachers in Uniontown were affected by this changing demography. In the schools I observed, this issue came into focus on occasions when teachers', frustrated with their teaching results, blamed the inability of students to cope with the school's demands. Some of the participants in the STP recognized this blame resulted from their lack of a clear understanding of their mission and role. Many of the participant teachers in this study recognized their awareness of these aspects as a result of their engagement in the STP.

### Research Setting and Sites

The setting for this research was the STP. It was first conceived by a task force jointly organized by a state-level education association, not affiliated with the AFT and a funded Research Center of MU. The program was aimed at improving mathematics and science teaching in middle/junior high schools.

The basic assumption of the task force was that grass roots support in school buildings is essential to achieve desired improvements in science and mathematics teaching. The program defined as its goal the establishment of a new educational role in schools, namely, "the support teacher role." This goal was to be reached through restructuring science and mathematics departments. To accomplish this goal, three basic strategic actions were proposed, teachers would: (1) receive additional training, (2) have released time to try and improve their own teaching, and (3) build up a new pattern of relationship with their Peer Teachers while trying to establish themselves as support teachers in their own buildings.

The propositions of the program became known to officials of the AFT, with whom the implementation was initiated in the summer of 1987. As seen before, AFT's perspective on professionalism was an important contextual element for the STP. As a union, the AFT was ready to make more long-term and far-reaching attempts at the professional development of teaching, taking teachers as the main agents of change. AFT helped to implement the program in two ways by: (1) finding a school district that already had a history of good relationships with its local union and (2) getting teachers willing to volunteer to participate in the program. The program was set into motion in 1988, when the Science and Mathematics departments in each one of the four pilot schools agreed to participate in the program. This was followed by identification and selection of a science teacher and mathematics teacher in each school to act as Support Teachers.

The additional training proposed by the program began immediately after teachers agreed to participate. A team from MU/Research Center went to Uniontown and provided the teachers with 18 days of training. This was the beginning of the relationship between the groups referred to in Chapter II as “researchers” and “teachers.” Researchers and teachers then met once every month for two full consecutive days of work. The agreed-upon aim of the meetings was training the prospective Support Teachers. The Support Teachers were trying to develop skills in conducting meetings and in observing and giving feedback on their teaching, while getting acquainted with the most recent research on learning and teaching Science and Mathematics. They dedicated a fair amount of time to reading and discussing issues regarding constructivist approaches and instructional strategies such as group work, student writing, concept mapping and student questioning techniques. They also spent time discussing issues related to the intellectual climate in their buildings and their future as support teachers. Those meetings began February 1988 and continued up to December 1988. As I was a participant observer in those meetings they constituted one of the settings for this dissertation.

In the Summer of 1988, the teachers participated in an intensive, residential training program on the MU campus. This part of their training is usually referred to as the Summer Program; it had a tremendous impact on their preparation for the Support Teacher role.

In September 1988 the teachers started piloting their support teacher role. They were supposed to dedicate half of their time to teaching and half to initiating the support role. In each building, the two Support Teachers organized a resource room where they had journals and teaching resources available. The resource room also served as the Support Teachers’ office. In the same place, they would hold meetings with individual science and mathematics teachers and with groups. Starting in December 1988, I had the opportunity to do full-time observation of two Support Teachers during three consecutive

weeks. On those occasions, Their teaching, their other non-teaching roles and their work with Peer Teachers in the resource room became important settings for gathering data.

After the initial training, the research team provided the support teachers with continued training and technical assistance. Technical assistance and training include the following topics:

- (1) teachers' professional competence;
- (2) cooperative versus competitive and individualistic learning both  
in science and in mathematics;
- (3) children's mathematical thinking and their ways of problem  
solving and comprehension;
- (4) understanding children's reasoning and concepts in science;
- (5) teachers' practices, knowledge, and beliefs;
- (6) meaningful learning;
- (7) the constructivist approach;
- (8) characteristics of exemplary science and math teachers;
- (9) strategies teachers could use for coping with hostile-aggressive  
students; and
- (10) teaching styles.

Although this list of topics is not complete, it provides an idea of the training assistance offered to the teachers. The researchers also assisted the teachers in developing techniques to observe both students and other teachers in science and mathematics classes.

From Fall 1988 until Spring 1991, the project staff spent two full days each month visiting the Support Teachers. The visits usually began with a classroom observation of the Support Teachers doing their teaching. Most of the times these were preplanned visits. The teachers received after-the-event feedback based on this observation. In the language of the researchers, this feedback was described as "working

at Support Teachers elbows.” The next morning all Support Teachers convened in the school boardroom to have a whole day meeting, usually referred to as a seminar. During these seminars, they discussed both theoretical and practical issues derived from events that happened the previous day. These seminars became another important setting for my data collection.

The researchers always traveled to Uniontown by auto. During the trips to and from Uniontown, the project staff would discuss many issues about their relationship with the Support Teachers, their Peer Teachers, and other actors in the STP, such as the district and the union personnel. Since I lacked funds to travel on my own to the research site, I generally rode to Uniontown with the project staff members. Although it was not possible to do any formal data collection because of the intimacy of the conversations that occurred, these trips became an important setting in which to learn about the STP.

In the Summer of 1990, the STP offered teachers and their Peer Teachers a training program that became known as Professional Development Seminars. Participation in these seminars was negotiated in a two-day meeting at MU. Following that, the project staff traveled monthly to Uniontown and conducted a three-hour seminar. The meeting at MU and the seminars in Uniontown were also settings where I collected data for this dissertation.

### Summary of Data Collected

For nearly two years, I followed the development of the STP in the settings mentioned earlier. The data I collected are summarized below.

- (1) Regular meetings with the eight Support Teachers (mathematics and science) were held by the project staff. This amounted to two, full, consecutive working days, per month of technical assistance given during the first year. Thereafter, the meetings were scheduled once a month. Most of these meetings were audiotaped and documented by notes taken by one or more of the participants. Also, in almost all of the meetings artifacts were collected. For these meetings, there are around 150 audiotapes and several different "documents" that tell the story of how the project was developed.

(2) As part of their expected roles, Support Teachers observed classes, gave feedback to their peers, and conducted meetings with them. Support Teachers also kept a log book of their main activities during that period. They have been doing this since the start of the 1988-89 school year. This generated one logbook from each of the eight Support Teachers.

(3) Starting in December 1988, I became part of a group of four external observers who conducted intensive observations of the Support Teachers. I did three weeks of observations or "shadowing," as it was called, of two of the Support Teachers. These observations totaled almost 80 hours of direct contact with the teachers. All the observations were audiotaped. I also did systematic note-taking during these meetings and took pictures of these two Support Teachers' workplace. My intention in using these techniques was to record as much as possible the Support Teachers' own perspectives.

(4) Starting in August 1990, MU held a series of Professional Development Seminars for the Support Teachers and their peers. On one day, Support Teachers and their peers convened for the Seminar. The next day, the Support Teachers met to receive technical assistance as part of the project. I was a participant observer of these seminars and meetings until April 1991. This part of data collection generated around 90 hours of audiotaped information as well as hundreds of pages of field notes.

(5) In 1990, one of the peer teachers received a Distinguished Visiting Practitioner award and spent six months at MU to become more acquainted with research in science education. During his visit, I met with him on a weekly basis to discuss his work. I conducted three extensive interviews with him during his visit.

(6) I have maintained regular contact and conducted interviews with three peer teachers who were regarded as "resistant" to the Support Teachers, to better understand their perspective of the project.

## Research Methods

### Interpretive Research in the Social Sciences and in Science Education

I conducted the research reported in this dissertation using a qualitative and interpretive approach. There has been an increase in the use of qualitative data and interpretive methods in current social science research, as well as in science education research. Within science education, qualitative and interpretive approaches are still incipient. Studies published in the last decade range from the tentative to the more sophisticated use of this approach. In the second category are the studies by Atkinson &



Delamont (1977) and Contreras & Gallagher (1988). As a matter of fact, it was only recently (Gallagher, 1991) that the first effort was made to organize literature using interpretive approaches in science education in the USA.

This recent growing concern with qualitative approaches, rooted in seasoned research traditions such as anthropology and sociology, is sometimes referred to as a sort of re-emergence of the socio-anthropologic traditions (Pfaffenberger, 1988; Bogdan & Taylor, 1975). That is, despite the indisputable dominance of quantitative methods in social science research, especially after World War II, qualitative methods are receiving more and more attention. It is not a new fashion, but a search for sound epistemological grounds that explains this re-emergence. Van Maanen (1982) believed the current use of qualitative methods was the result of: (1) a great deal of disenchantment with the results of quantitative studies; (2) the growing visibility of interpretive methods, especially those being used in fieldwork ethnography; and (3) a more concerted effort to use an epistemological base for social research that is not based upon positivist assumptions (Van Maanen, 1982).

I utilized the following qualitative, interpretive research principles to conduct the research reported here.

- (1) The investigator is an important instrument in both the collection and analysis of data (McCracken, 1988). While quantitative researchers can sometimes delegate the analysis of their data, qualitative researchers cannot, because interpretation is the essence of qualitative analysis. Thus, qualitative researchers express their own instrumentality by interpreting the research data.
- (2) To perform their interpretive capacity properly, qualitative researchers have to maintain constant contact with their data.
- (3) Qualitative investigators frequently need to make sense out of contradictions. One way to do this is by identifying breakdowns in social interactions and seeking to understand them. This involves a search for coherence which requires successive and interwoven interpretations (Agar, 1986).
- (4) Contrary to their quantitative counterparts, qualitative researchers are not seeking to reduce human life to a set of analyzable variables. Rather,

they strive to understand the process of interpretation by which new definitions become part of a human group's set of stable meanings (Blumer, 1969). They need, therefore, to examine many small units of data in different contexts.

(5) Qualitative researchers are constantly coding and re-coding data to decide whether these support working hypotheses. This process is actually a more sophisticated interpretation using several analytical decisions. It has to be performed by the researcher because he/she is the main source of the necessary judgments himself. Also, during this process, data are organized in a variety of structures that sometimes overlap or even contradict each other (Bogdan & Taylor, 1975).

During my research, I made an effort to harmonize the principles discussed above with the use of microcomputers to handle the qualitative data I accumulated. In doing so, I developed a computerized system to handle qualitative data that I named the Monteiro Data Organizer (MDO). My concern in using a microcomputer to handle data led me to draw considerable input from Pfaffenberger (1988). He analyzed the nature of qualitative research to identify possible contributions that computers might make to performing data storage, retrieval and analysis.

In the following section I will present the system I designed. Additionally I will demonstrate that using a microcomputer system is not inconsistent with the interpretation performed by qualitative researchers.

### The Monteiro Data Organizer as a Tool in Interpretive Research

#### The Role of Interpretation in Qualitative Data Analysis

The literature cited above suggests that interpretation is a key element in successful, qualitative data analysis. When researchers are interpreting, they have flashes of insights concerning the potential relevance of different pieces of their data. To keep track of these insights, they need some sort of data organization to enable them to link and associate those different pieces of data. As I experienced the need to organize those insights simultaneously, quickly, and accurately, I decided to make use of a microcomputer.

I stated elsewhere (Monteiro, 1991) that microcomputer technologies boomed at precisely the same time qualitative research was re-emerged. However, I microcomputers had negligible effects on qualitative research, when compared with their effects on quantitative research. One of the probable reasons for this is the association between computer technologies and the handling of large, repetitive calculations. Since the invention of the microprocessor chip, microcomputer technologies have improved in terms of expansion of memory, power, speed, optical display, and analogic/digital conversion of sound and images (Calhoun, 1981). Hence, the tremendous development of microcomputer technologies has progressed beyond the capability of just handling large calculations. Still, until just recently quantitative, not qualitative, researchers have taken advantage of microcomputers' availability. The use of quantitative methods in the social sciences, for instance, was largely influenced by the feasibility of manipulating large amounts of information provided by computers. Microcomputers disseminated that feasibility among researchers by breaking the dependency on hard-to-access, mainframe computers. As a result, a close association between microcomputers and quantitative research methods developed.

The close association between microcomputers and causal explanations with quantitative support (Pfaffenberger, 1988) had a negative effect upon qualitative researchers' prospects for using microcomputers. That is, qualitative researchers developed a relative disdain and skepticism towards quantitative methods (Kirk, 1981) and their symbols, including the microcomputer. Until recent years, qualitative researchers' rejection of computer technology was consistent with: (1) their effort in building a non-positivist base for social research and (2) the computational orientation of the available technology. However, these reasons are no longer significant. First, qualitative methods are well-accepted. Second, computer technology can no longer be associated with large calculations only. Therefore, a gap seems to exist in the current understanding and use of microcomputer technologies by qualitative researchers.

One of the contributions of this dissertation is an attempt to bridge this gap by demonstrating the use of a microcomputer for organizing and analyzing the research data. In order to analyze the data gathered, I developed a data organizer, the MDO. MDO was developed as an application of Hypercard, using a Macintosh microcomputer.

Developed in 1987 (Nielsen, 1990), Hypercard, presents a complete cycle of hypertext's possibilities used in developing MDO. A simple way to describe a Hypertext is to say that it is a set of organized information. In other words, it consists of a number of pieces of information (text, sound, still images) linked with each other. Each piece may be considered as a unit of information. Technically, in a Hypertext, existing pieces of information are electronically organized as nodes connected by pointers called links. The size of the nodes and the number of links between them may vary with great flexibility. This gives rise to a web of relationships, permitting the user to go anywhere within his/her research database, "traveling" with great freedom from one piece of information to another (Conklin, 1988; Goodman, 1987; Nielsen, 1990; Pfaffenberger, 1988).

Qualitative researchers were using computers before Hypercard made possible the actualization of Hypertext's potential. Software such as "ASKSAM" (Jacobs & Aron, 1987) and "ETHNOGRAPH" (Pfaffenberger, 1988) are some examples. However, three features make the Hypertext environment more appealing to qualitative researchers. First, it allows researchers to construct connections among different kinds of data. Second, it gives researchers the capability of handling information in sound formats. Third, it gives researchers the freedom to interact with the data they seek to interpret.

#### Major Components of the Monteiro Data Organizer

In developing MDO, I considered: (1) requirements of qualitative methods, as previously indicated; (2) hardware and software availability; (3) the possibility of MDO

being used by an individual or by a research group; and (4) the need to handle information in written, graphic and sound formats.

The system currently uses: (1) a Macintosh IIfx microcomputer with 100 MB hard drive and 6 MB RAM; (2) a Microtech cartridge drive using 45 MB removable media; (3) a Mac Recorder; and 4) a Apple Scanner.

MDO is a Hypercard application, supported by word processing and graphic software. It is structured in interconnected stacks that hold the different kinds of information being gathered. These stacks are described below:

(1) Raw field notes can be stored in graphically-digitized format, using a scanner. They can also be entered in conventional word processing fashion. The emphasis on the graphic format is the preservation of note-taking originality, when that is important. For instance, orientation of text in note-taking, drawings, graphs, and other rather personal ways of note taking are powerful tools of recall that would be lost when typed. Expanded field notes can be produced without destroying the original raw notes.

(2) Documents collected during the research process are stored in two ways. First, they are organized in an event-oriented information card. This stack of documents works as a kind of catalog for existing documents. However, the event or events to which the document is related are the main focus. Referents are established to ease the way towards the search and codification of data. Second, the document may be stored in a digitized format, using a scanner, in order to be electronically accessed.

(3) Audio-recorded information is first organized into a catalog and also oriented towards events. A set of referents is constructed to ease the process of both coding and locating relevant material. Further, segments of sounds can be digitized for purposes of intrinsic analysis (regarding the content of the segment itself) or extrinsic analysis (regarding the comparison of different segments of sound). Segments of sound can also be digitized to provide context to transcripts, notes, documents, reflections, hypotheses, or assertions.

(4) Segments of sound may be transcribed and stored to be analyzed as a written piece, or to be compared with the corresponding sound segment. Putting text and its corresponding sound side by side provides for a more contextualized analysis of the events they represent.

(5) Analytical, methodological, and reflective memos are stored in other stacks which have been developed as supportive tools for analysis. Those memos are important components of the process of interpretation that happens during all the phases of qualitative research. Their interconnection with the other stacks permits quick detouring into them, to enter or verify

data. This is useful when the researcher needs to add comments about insights resulting from the analysis of specific pieces of data.

From a technical perspective, it is important to remember that the major limitation of the system is related to managing sound. Sounds, such as the ones coming from audio-recorded interviews, can be digitized and stored by using the MacRecorder hardware and software. However, storage of audio information consumes a large amount of memory space. For instance, a three and a half minute segment of sound will require about 1.1 megabytes of memory to be digitized with reasonable sound quality. The effect of this limitation should be made clear by the following information. Managing strips of sound longer than three and a half minutes will take a computer with four megabytes of RAM memory to its limits. The implication of this limitation is that a dramatic constraint is placed on the definition of units of sound for analytical purposes. Of course, the kind of limitation described before can be lifted. However, this can only be done by imposing an increase in the cost of hardware. This point must be considered since the advantage of being able to digitize segments of sound will be more apparent when doing comparative analysis of different segments by having two or more pieces of sound loaded at the same time. In that case, a larger RAM memory may be needed in order to compare and contrast multiple segments of sound.

As experts keep working on ways to compress digitized sound information, researchers willing to use microcomputers as a tool may have more hope of having better support for their work.

## CHAPTER IV

### RESEARCH FINDINGS

#### Entering the Field

During my participation as an independent observer in the Support Teacher Program (STP), I became interested in further study teachers' participation in efforts to restructure their working environment.

In December 1988, I was hired to do an "independent observation" of two support teachers participating in the STP. The job was an interesting challenge to me. I had expertise in training science teachers constructed within a different cultural background, in Brazilian context. In addition to being literally a stranger, because of my foreign nationality, I was also a complete stranger, to the STP. Yet, the STP directors were interested in having an autonomous, independent observation of changes effected by the program. The STP directors viewed my graduate training in fieldwork research methods and my sociological perspective as important assets. Additionally, my unfamiliarity with the STP was considered a positive element in the independent observation required.

The observation I performed was negotiated with the participating teachers prior to the start of my observation. Thus, my entrance was less problematic because the

teachers were already part of an established project. Later, I indicated my interest in studying their participation in the program as the basis for this dissertation. By that time, I was already considered by the teachers as a regular, accepted visitor to the settings and sites I wished to research.

My task during the independent observation was to closely follow the daily work of one Science and one Mathematics teacher. I observed and documented their activities while they performed both their support and regular teaching roles. I conducted my observation in three different weeks. It entailed whole-day, constant companionship between me as observer and the two teachers. Due to this long companionship, the process was called “shadowing.” I came to be known within the group as “Shadow,” This nickname was applied to me, with a certain touch of humor, on occasions when I was introduced to other people in the building.

This shadowing experience had many similarities with those described by qualitative researchers doing long-term observation in school settings, and, particularly, the following one by Wolcott (1973), where the term “shadow” was used for the first time.

Before extending my invitation to Ed to participate in the study I reviewed the kinds of activities I intended to pursue with him as a “shadow”: Maintaining a constant written record of what I observed in behavior and conversations; attending formal and informal meetings and conferences; accompanying him on school business away from the building as well as occasionally accompanying him in non-school settings; interviewing “everybody”; and, with his permission, sifting through notes, records and files (p. 3).

The observation I performed was not restricted to the two teachers. They had to interact with their Peer Teachers in their department and in the building. In addition, they had to attend meetings with their Peer Teachers and other support teachers who were being trained in other buildings. I followed them as a “shadow” to those meetings. During that time, I became acquainted with all of the teachers participating in the STP.



As a result of this, I was involved with those teachers in a process that could be described as a “focused interaction” or “encounter.” According to Goffman’s (1981) conceptualization, a focused interaction:

...occurs when people effectively agree to sustain for a time a single focus of cognitive and visual attention, as in a conversation, a board game, or a joint task sustained by a close face-to-face circle of contributors. . . . I call the natural unit of social organization in which focused interaction occurs a focused gathering, or an encounter, or a situated activity system (p. 7).

After some time in the field, I perceived that, in order to understand the changes the teachers were reporting, I should make an in-depth investigation of two questions. First, since many teachers were accepting the proposals of the STP and changing their practice accordingly, what was the process by which those changes were taking place? Second, what was the nature of the resistance of the small number of teachers said to be resisting the STP proposals? As my observations progressed, I became convinced that both the teachers who were accepting and those who were resisting were using their acceptance or their resistance to probe their own experience. As a result of this, they were participating in the implementation of the STP. I decided then to pursue this question beyond the more evident labels of “traditional” and “changed” teacher. Thus the focus of my dissertation became teachers’ participation in their changing workplace.

As I stated in Chapter I, participation is defined here as more comprehensive than taking part in something. Rather, participation means that teachers may play a role in determining both the shape and the ethos of the educational enterprise set into motion in school. Therefore, it became important to understand how those teachers involved in an attempt to restructure their working environment participate in that effort.

Having decided to study teachers’ participation, I observed a group of four science and four mathematics teachers in the STP. I will refer to those teachers as Support Teachers. I also observed four other teachers, colleagues of the Support Teachers, in two different buildings. I will refer to them as Peer Teachers.

Using interpretive research methods, I studied them as they participated in the restructuring of their workplace and incorporated a new professional role, that of Support Teachers.

### An Outline of the Findings

Next, I will outline some of the more salient findings in this research and present the interpretive framework I used. This outline is intended to offer a summary before a more detailed examination of data, which is the core of this chapter. The interpretive framework facilitates connections between theoretical underpinnings and the findings. Thus, the purpose of this outline is to offer readers an overview of the findings.

In this study, both support and Peer Teachers were experienced, seasoned teachers. A number of them described themselves as “pretty traditional teachers.” The teachers were working in an environment being effected by two significant social elements: (1) the professionalism of teachers as pursued by AFT and (2) the demographic changes responsible for the increasing concentration of minorities within urban areas. The interplay between these two elements affected the teachers I studied. In varying degrees, these circumstances exposed the inadequacy of their teaching expertise, especially when dealing with students coming from minority groups. Prior to the STP, one constant complaint teachers discussed in lounge conversation was that students could not learn what the school was offering. The teachers were experiencing successive realization of the limits of their expertise, both in terms of their ability to solve their teaching problems and in terms of what they were lacking.

Findings indicate that participant teachers incorporated the new role of support teaching in their working environment during a process that included both accepting and resisting the STP program’s proposals. The findings also indicate that teachers’ traditional character was shaken by the external social components mentioned above (i.e., changing demography and AFT’s professionalism). On the one hand, these elements

were out of the teachers' control. On the other hand, both elements were happening in a highly unionized town where teachers' involvement in decision making was appreciated.

Teachers were already wondering that traditional teaching was not working anymore. However, they usually blamed it on the students' inability to learn. Most of teachers were perceiving the mismatch between teachers' past experience and the needs of the new kinds of students. This combination of elements was producing contradictions in teachers' behavior prior to the arrival of the STP. As a matter of fact, most of the teachers who first began the program indicated that dedicating their time to the STP was due to their dissatisfaction with the results they were achieving with their existing expertise.

The STP arrived when some of the teachers I studied were already deeply frustrated with their traditional ways of teaching. Based on the conceptual framework in Chapter II, one could say that those teachers were experiencing a latent crisis. That is, for these teachers their previous experiences was not working, and new experiences that could improve ability to cope was not yet in place.

Such contradictions are inherent in an established critical situation. Those contradictions forced most of the teachers to examine their own experience in search of a more comfortable way of handling their professional life. This happened within the realm of the STP. However, the teachers whom I studied still approached the proposals oscillating between belief and skepticism.

During the training period, the STP directors encouraged teachers to pursue their search for new grounds for their expertise. Within this process, they associated their expertise with the authority of the project staff to whom they assigned an advanced status, as compared to them, in terms of research-based knowledge. As the program evolved, and they had an opportunity to revise their expertise, they became more able to impart their own expertise --strengthened by the project proposals-- to their Peer

The program provided them with an appropriate and legitimate way to pursue that search without having to face responsibilities for eventual failures. However, not all of the teachers performed the examination of their experience in the same fashion. Some teachers followed an approach of acceptance as described before, while others took a resistant stance regarding the STP's proposals. As a result of their specific ways of participating, each teacher's retrospective assessment became the starting point for individual transformations. In both approaches, I found examples of teachers being confronted with the inadequacy of their teaching practice within the environment enabled by the STP program.

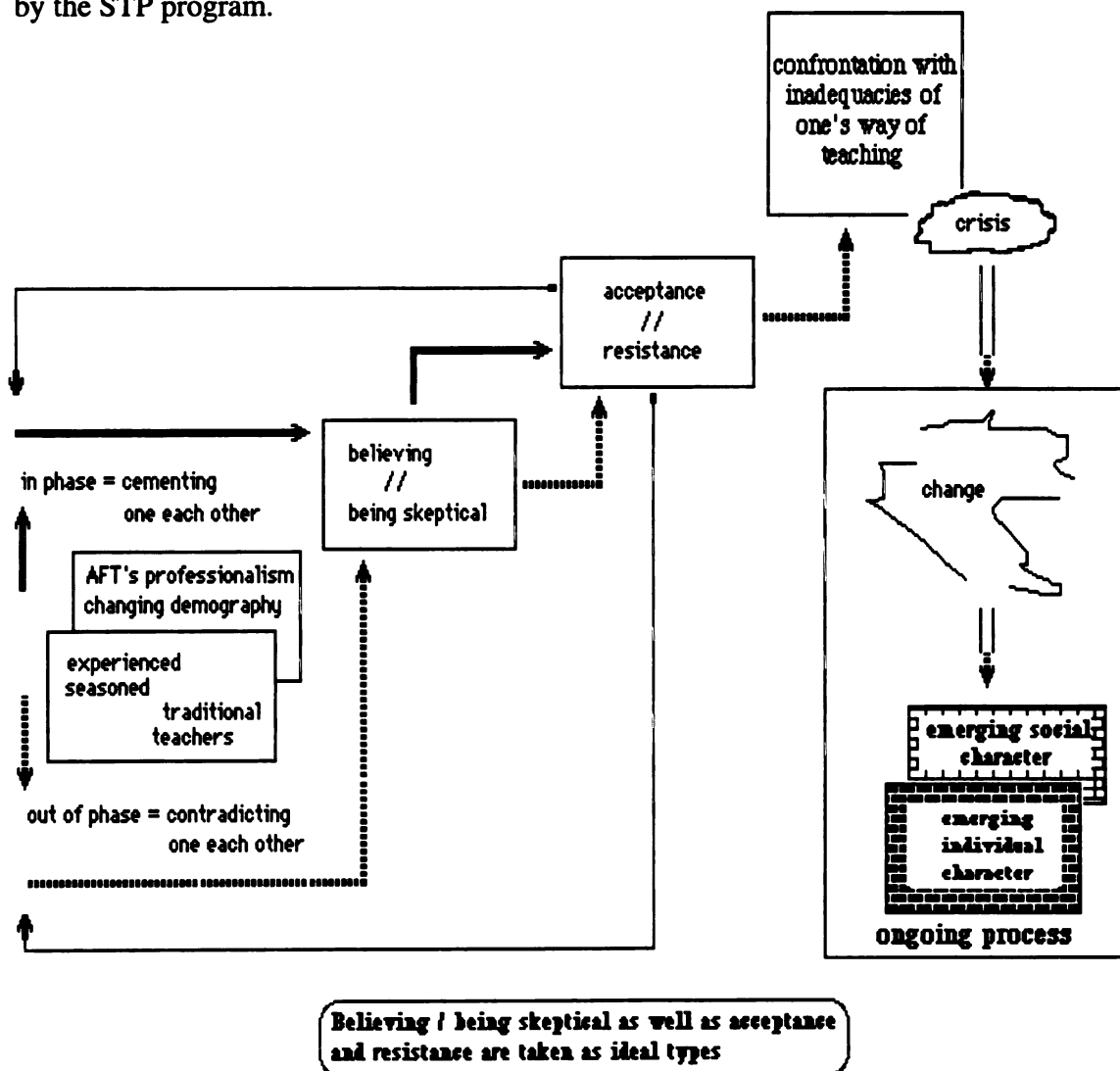


Figure 2. Interpretative Framework

In this chapter, I will expand on these research findings. Figure 2 presents an interpretive framework to enable the reader to see the connections between the theoretical framework presented in Chapter II and the findings reported in this chapter.

Figures 1 (on page 30) and 2 correspond to one another. Figures 1 illustrate ideal types at a conceptual level while Figure 2 the provides an application to my study on teachers' participation.

The following are relationships between pictures one and two

Figure 1	Figure 2
Concept Level	Study Level
social character	structured around AFT's concept of professionalism and Uniontown's changing demography
existing patterns of individual character	teacher's individual character is shaped in terms of experienced, seasoned teachers viewing themselves as traditional teachers.
internal energy and drive to participate	internal energy and drive to participate comes from tension between believing and being skeptical.
interactions, negotiations and internalization of meanings	the process of interaction evolves around negotiation of meanings in which the teacher sometimes adopts a posture of acceptance, sometimes resistance and, at other times, oscillates between them.
structural alterations become critical to sustain structure's identity	teachers' professional identity was shaken when they were confronted with inadequacy of their current way of teaching.
crisis	teachers were in a crisis stage when they found out that students were having misconceptions resulting from their teaching.
change	change resulting from crisis is an ongoing and lengthy process

## The Support Teacher Program: An Insider's View

This chapter presents segments of interactions transcribed from tape-recorded material. The following are the transcription symbols that may be found within the text:

(( ))	Contextual notes
( )	Unintelligible utterance(s)
(pause)	Long pause between utterances
--	Short Pause within an utterance
[ ]	Simultaneous utterance(s) by two or more speakers
[	Utterance by one speaker interrupted by an utterance from another speaker
:	Prolongation within an utterance
::	Long prolongation within an utterance
//	part of the original narrative is omitted

To describe the STP I will rely on Mr. Kevin's account. On several different occasions, the Support Teachers gave me accounts of what happened in the very first meeting when teachers and researchers were together discussing the STP. I chose this particular account because it represents what the Support Teachers said to me on different occasions. Also, I chose it because Mr. Kevin's narrative put the program into an historical perspective that helped me to understand it more from the teachers' point of view.

Although the narrative I will present next is a continuous and integrated piece of communication, I have segmented it. I have done this so as to introduce before each segment both assertions and remarks I found to be helpful in the interpretive process.

The teachers in Uniontown perceived the AFT local as the initiator of the whole process. This can be seen in the following segment of the narrative. In truth, the program was made possible by long-term cooperation already existing between the union and the school board.

Ah--my recollection is that this full event started in the Fall of 1987. And, what happened was that the director of math called a meeting of the department chairman of the junior high schools. And at this meeting the

President of the Federation of Teachers ((referring to the president of the local of AFT)) was there and wanted to say some things to the people of the school. And what he said to us was that he was interested in a program whereby teachers could share ideas and // novel ways of teaching certain mathematics or science concepts.

The teachers I observed were pretty much aware of the problems affecting science and mathematics and which required an effort to restructure teaching. All of them were experienced teachers and some of them were currently department heads. Their account of those problems may be summarized by what this teacher described as “kids turning off or shutting down” science and mathematics as they moved on to the higher levels of schooling:

This all stemmed, I guess, from the basis that both math education and science education were not in the kind of condition that they should be in. That there should be an improvement. What was happening was when the kids, the students, go to the high school they are somewhat turning off or shutting down, and not taking as much math and science as we would seem to need in this technological age.

The next segment of the narrative demonstrates that the AFT Local considered teachers' expertise to be “good” and worthwhile enough to be shared and disseminated.

So he ((the AFT Local President)) proposed that there are some quality teachers in the school system, teachers that have been around for a long time, and he was going to retire in a very short time and he was wanting to find out what made this teacher a good teacher. And, what were some of the ways in which he taught math that made him a good teacher. And ah-- somehow he was using the idea that there was no vehicle to share ideas, and share ways of teaching.

The participant teachers consistently perceived the STP as: (1) a result of an initiative by the AFT and its local in Uniontown, and (2) a joint venture between AFT and MU. I observed that the board's role was rarely mentioned. In addition, I noticed that the support teacher's role was understood as something that evolved with the unfolding of the project.

And--so--what he was doing was asking us to think about a program that was brought to his attention by the American Federation of Teachers from the MU/Research Center. // he kind of just--told us in this little brief idea // what he thought that program might be about. And what he did was he set up a meeting for people from MU to come down to Uniontown and make a presentation to us. And//at that time , at the meeting at the Board, that included the people of MU, the program was explained a little more in detail as to what the // program would be. At that time they said that they wanted a pilot program for a Support Teacher // the Support Teacher would be a half classroom teaching teacher and a half other teacher. And that other teacher was not really exactly spelled out verbatim as to what the other half would be. But they basically knew that there would be a three class-period teaching day and a three-class-day doing something else. And I don't know if any of us really understood what we were going to be doing for the other time.

The program managers considered all members of the science and mathematics departments to be prospective participants. The department heads were asked to reach a consensus about whether or not their departments would participate and who to nominate to be the Support Teacher trainees. The AFT Local officials insisted on these requirements. They believed that in so doing they would ensure participation from the bottom up. The participant teachers I observed did not question this notion. However, all of them had some knowledge that the program was first conceived at MU and its funded Research Center. Mr. Kevin's account and perspective seems to indicate that he shared the AFT local's perspective of a bottom up start for the program.

So based upon that information when the professors from MU talked to us // they thought that four would be a workable number for both math and science. And, basically, from that meeting we had to talk to the other people in our departments and we had to ask them if they would be willing to cooperate in this venture. And, we more or less had to get a unanimous agreement among the department members, as to whether or not they would be willing to participate in this program, because we didn't want to have some people that would be agreeable to work, and other people that would not be willing to work. And this was all stated before we even knew exactly what a Support Teacher would be or who the Support Teacher in each Building would be also. So, based upon that information, the Department chairmen went back to the schools and talked to their peers, in their departments.



The Union's local also required the mathematics and science departments in each building to participate. In the following quotation, we find the teacher attributing that requirement to the "MU people". He probably did that because at that time the MU researchers were the active counterpart in the dialogue with the teachers. It is important to note in Mr. Kevin's account that some schools did not qualify for the STP because their teachers did not reach an agreement in which both the science and the mathematics departments would participate in the program.

I think we then had a follow-up meeting to that. Because at that time we were trying to get the commitments of the four schools. And, basically that was on a first-come first-served basis as to first of all the schools had to agree. And in some cases if they didn't have unanimous agreement, and that was in both math and science, it couldn't be just in math and not in science. // the MU people wanted to have both the curriculum fields, from the same school. Not have math in one school and science in another school. They wanted both in one school! So that eliminated some schools right away, because some schools could not reach an agreement. // And for those four schools that were willing to accept this role then we (started) from there.

Competition among, and selection by, Peer Teachers were both part of the process by which the individual teacher trainees were finally chosen. This selection can be viewed as the juncture of two power sources present in the program. The juncture is the point at which the teachers and those who conceived the project needed to negotiate power. That is the program was conceived at MU but its implementation needed to be based upon teachers' consent. However, that was not the actual outcome. According to Mr. Kevin's account, the decision about participation was a mixture of agreement among the teachers and selection by AFT officials based upon a rating process.

Now what went from there was the selection of the Support Teachers themselves and this was done by--(( he took some time reflecting and then said)) Well, in some schools it was done differently. In some schools there was only one person, in the Department, that applied. Therefore they just automatically were granted the position. In some schools, where there was more than one person that wanted it, there was a decision-making process organized by the Union which sent out a kind of a rating form or a survey form that was to be filled out by the opposing teachers. To give you a

specific example, in my school there were three that wanted the Support Teacher position. Myself and two other ones. And what happened was that, the other two people got a form to fill out on me. I got a form to fill out on the other two, and so forth. And based upon those ratings, plus the (ones) of the principal of the building, and plus the recommendation of the Union officials, all those components weighed in to make up the decision-making process of who was ((going to be)) the support teacher.

All the teachers I observed made clear to me that in the beginning they did not understand the aims of the program. This point is clear in Mr. Kevin's narrative. Also, he describes their teachers' individual transformations in terms of their changing outlook and way of teaching as a result of their participation in the STP.

Once that decision was made // Once those eight teachers, four in science, four in math were selected, // we started between January or February of 1988, ah -- until the end of the school year in June, of 1988, with in-servicing of the eight teachers. And by that in-servicing I meant that Perlan and John (MU faculty members) came down to Uniontown, a couple of days each month and worked with us for two days in the Board of Education. Ah--two days per session, and explained to us what exactly was going to be our position. And this is kind of where things got a little--changed. What I think we perceived at the beginning to be as a Support Teacher turned out to be much more than that. Ah--we were more or less thinking on the lines that Mr. Elly ((the AFT local president)) had said we would be trying to--find out those things that made up the, you know what novel ways, what ideas or what unusual ways in what a teacher teaches a certain aspect of the curriculum. To make it be something that we could share with other teachers. And that perhaps could produce a better environment to learn and also ((become)) better teachers in that subject area. But what we found out was that it entailed a lot more. Not only it would entail--It entailed a lot of a--. First of all it entailed--((thinking)). Most of our lead teachers, in fact I think, may be all eight, will probably agree with this was that it entailed us to change us teachers ourselves. It made us change our outlook and our way of teaching.

On various occasions during our relationship, teachers would refer to their individual transformation as a result of their participation in the STP. They liked to describe themselves as moving from a traditional to a more "constructivist" or "constructionist" view of teaching, one that is based upon students' understanding.

And the professors introduced us to what they call a constructionist point of view of teaching math and science. And that caused us, I think who // I think by the most part all of us were pretty traditional teachers if we can use

that word 'traditional.' And, to change from being a traditional teacher to a teacher that is conceptually or constructively based, was a change not only in ourselves, but then to effect that kind of change in the people that we work with. During this course of time there was a big transition // it involved the eight teachers observing each other in classroom observations, and talking about what we were doing. // if we were teaching for understanding, // if the kids were learning what we were teaching. // and a lot of techniques on teaching that // broke away from the traditionalist way of teaching, and went to a more student-based or-- student-centered way of learning.

### A First Look at How Teachers Participated

Ideas can become powerful forces, but only to the extent to which they are answers to specific human needs prominent in a given social character (Fromm, 1968, p. 308).

In trying to understand how the teachers I studied participated in the STP, I began with an assumption based upon Fromm's (1968) concept of social character. Fromm (1968), introduced the concept of social character to explain both the constitutive traits of a group's culture and its internal contradictions. "Social character" is a useful concept for understanding teacher participation because it is concerned with the aspects of character structure common to most individuals in a group.

The social character comprises only a selection of traits, the essential nucleus of the character structure of most members of a group which has developed as the result of the basic experiences and mode of life common to that group (Fromm p. 305).

Based on Fromm's (1968) concepts of individual and social character, I assumed that the disposition to accept or resist, reject or submit, to what the STP proposed was already a constitutive trait of the individual as well as the social character of the participant teachers. To investigate this assumption, I made a number of assertions that I will discuss in the coming sections.

### **Believing and Being Skeptical**

The teachers studied first reacted to the STP proposals by alternating between believing and being skeptical. Believing and being skeptical will be described as behavioral alternations derived from individual accomplishments and frustrations.

The vignette I will present refers to Mr. Kesini, one of the support teachers. It describes one instance in which he alternated between belief and skepticism.

In May 20 1988, during one of its preparatory meetings, the STP's staff decided to observe Mr. Kesini's classroom. Classroom observations were to become a regular practice in the program. The primary purposes for those observations were to: (1) find out more about each participants' teaching, (2) improve their own teaching by means of providing immediate feedback to them and (3) model skills for the future task of support teaching that would include peer observation with subsequent feedback.

The interaction I will describe next took place during the post-observation feedback Dr. John, one of the STP's researchers gave to Mr. Kesini. Dr. John's feedback followed his observation of a lesson in which the students had been studying weather symbols using a newspaper weather page. The transcribed dialogue concerns air pressure symbols.

It is relevant to note Mr. Kesini's ambivalence towards the proposed innovation and also his behavior alternating between belief and skepticism regarding innovation. It is an important piece of data to understand the ideal types of believing and being skeptical. These two types were the Support Teachers' first motivation to participate the STP.

First, Dr. John observed that Mr. Kesini did not probe his students with questions that required reflection. At the beginning of the interaction, Mr. Kesini did not agree with that observation and he resisted the idea that he was not probing his students. To Dr. John's observations, he interjects, "I always do that." However, at the end of this

interaction, one can see Mr. Kesini beginning to agree with Dr. John's observations when he finally says "right!"

Dr. John: "For instance, one of the things I would suggest is that you could have asked // What does 143 mean? You would have this here, what does 143 mean?"

Mr. Kesini: It was there, I always [do that.] ((very soft))

Dr. John: [Yeah!] and then the next one is -- what ((does)) 987 mean? And, and what symbol would you put in front? -- See? Well, when there is a high number you put a nine in front, and so it will be 998.7

Mr. Kesini: Right!

In feedback sessions similar to the one reported here, the purpose was to help teachers gain awareness of strong and weak points in their teaching. That was probably the reason why Dr. John kept stressing his message, as if he was not paying attention to Mr. Kesini's interjections. In the dialogue above, Dr. John kept stressing his point until Mr. Kesini agreed and said, "right!"

After this first agreement, Dr. John's strategy was to point out the differences between what the STP proposed and what Mr. Kesini practiced. The next segment shows the use of that strategy

Dr. John: OK? That will be the millibar ((structure)). You might ask questions about why is pressure important --to review that. So that you can maintain a high pace--and you know--Because -- I see you as a pressure cooker teacher. You're not a laid back teacher.// You have a different style and I respect that style. But what I want to do is to help // What I am suggesting is a way that you can use your style to increase student engagement // and review // ideas that you are trying to get across.

(pause)

Now give me your reaction to that!

In the next segment Mr. Kesini gives his reaction and, although he first expresses agreement, he soon demonstrates his first ambivalence towards the proposition.

Mr. Kesini: Fine! . . ((with a half smile))

Then, he makes a disclaiming statement.

Mr. Kesini: I don't know what kind of reaction [to give] I will try it!

Dr. John, however, tries to push Mr. Kesini beyond his ambivalence.

Dr. John: And what do you predict?

Mr. Kesini's answer was evasive. According to Mr. Abe, a graduate student member of the STP staff who witnessed that interaction, the situation became rather uncomfortable. Dr. John tried to keep the conversation going and he offered Mr. Kesini a way out of his discomfort. He did so by inviting Mr. Kesini's opinion on eventual problems in dealing with the proposed strategy of probing students' understanding by questioning them.

Mr. Kesini: I don't [know!]

Dr. John: [You predict] problems with it. You foresee any difficulty!?

The following segment shows a break in the dialogue. Mr. Kesini reaffirms his past experience and demonstrates that the proposed changes would not be easy.

Mr. Kesini: I just have to give it a shot and see what happens to that. Here again you're trying to break a pattern of 23 years --You know I've been like this ((referring to his teaching style)) for 23 years--breaking that pattern is going to be tough as hell but I'll give it a try.

Recognizing Mr. Kesini's discomfort, the researcher backed away and tried presenting the changes as minimal, when compared to Mr. Kesini's teaching pattern.

Dr. John: I am suggesting that you don't break the pattern very much. It is just -- that's a little thing to change and instead of going on to the next topic, stop and say 'OK! Now, I am on this topic, what are some questions I can ask to check understanding?'

On many occasions, the staff referred to this event in cautioning teachers about feedback strategies and implications. For instance, Dr. John said: “I almost scared Mr. Kesini out of the project by pushing too much the issue of changing.” I have also heard that event remembered on occasions when the project staff and the other support teachers were together.

In the following conversation, I will highlight part of an interaction where Mr. Kesini made it clear that he could use the STP propositions in his teaching and still not believe in the STP’s proposed way of teaching. First he stated his skepticism by using the analogy of coaching.

Mr. Kesini: It’s like coaching -- I only coached one way. And -- you know -- if I read books on that stuff I can do it their way -- but I don’t believe in it.

Then, in the sequence of the interaction, Dr. John requested that he state his belief in the STP’s proposals.

Dr. John: But you believe in [this? ]

Mr. Kesini: [Yeah! ]

Dr. John: [I think] you do.

One has to be aware that this interaction happened in the presence of the entire group of science teachers. Perhaps this could explain Mr. Kesini’s evasiveness and ambiguity. However, again, the researcher pushed Mr. Kesini beyond his ambiguity, almost to the point of a declaration of conversion.

[Yeah I do, ] I keep talking to people in school about it and I think 'don't forget the one guy who converted you a little bit,' I talk with them about it, you know.

On another occasion, during one of the monthly meetings between the support teachers and the MU researchers, at the Uniontown Board of Education, in Uniontown I observed another instance of alternation between believing and being skeptical.

This meeting was the first to be held in 1990 after the start of the school year. These monthly meetings had a predictable structure. The people of MU would be already in the room when the teachers arrived. Usually, Mrs. Polly would come in before the others and bring a box of donuts that teachers would enjoy upon arrival, along with morning coffee.

The demarcation between the coffee time and the actual beginning of the meeting was fuzzy, but was always indicated by an agenda question by one of the MU people. The agenda would then be negotiated and established and the meeting would flow in a very informal fashion. A report about what the teachers did in the past days was always the first part of the agenda, but not always mentioned during the negotiation. Everything happened as if that was taken for granted. During the report, all teachers would participate in examining problems, alternative solutions and suggestions for further action to be taken by the one reporting.

During my observations of these meetings, I took advantage of my accepted role as shadow to quietly observe the unfolding interactions among the teachers and between them and the MU people. These meetings were important because various philosophical, pedagogical or strategic issues would be discussed and actively clarified. Subject-matter issues were the most commonly discussed.

The instance I will mention next came from one of these reports I observed. Mr. Kevin was reporting on the beginning of the school year in his building. After his report, the other support teachers commented, debated some points and gave suggestions. I will present Mr. Kevin's report and interaction with Mr. Kevin and Mrs. Cyle, as a context for understanding the explanation of teachers alternating between belief and skepticism.



Kevin: Well, ((clearing his throat)) we had a kind of stormy beginning.

Someone: Stormy?

Mr. Kevin proceeded, describing how he had a meeting with his fellow mathematics teachers and the issues with which they were dealing. He mentioned that he was concerned about talking with the teachers about teaching for understanding, and “making sure we were doing it in our classroom.” He said in his report that he addressed the issue by stressing to his Peer Teachers “Of course, we were not practicing it.” In the report he mentioned that four teachers began debating whether or not they were teaching for understanding. Two thought they were, whereas two others did not.

These meetings were building level replications of the seminars the support teachers had with the people from MU. In those replications, the support teachers would impart to their Peer Teachers the information they acquired from the STP staff, as well as try to affect changes in their Peer Teachers' teaching.

Concerning one of the teachers who said she was “teaching for understanding,”

Mr. Kevin said:

Mr. Kevin: I don't feel comfortable with her idea of teaching for understanding. And, (she said) they ((the teachers)) always try to teach for understanding. ((Dr. Perlman laughs)). Yes what I see and what I hear is that they want the kids to know how to do the math, but I don't interpret that as understanding and yet they do.

Mr. Kevin proceeded to report on how he got into an argument with one about her approach to teaching for understanding. Here is what he said:

Mr. Kevin: And we had, ((an argument)) and even Mrs. Carol jumped in when we had this thing. And she just kind of got a little heavier and I guess they're being somehow resistant. I think so and it just kind of clashed a little bit. In the afternoon she calmed down and we had a little talk and got her involved.

During his report Mr. Kevin offered his interpretation of what made the teacher angry, and why the meeting “became heavy,” as he described it. His interpretation:

Mr. Kevin: But I guess she thought I was being negative about her approach and I was just trying to get her to question herself and her practice and what she was doing with her kids.

Mr. Kevin also reported how the other teachers reacted in the days that followed that meeting. He explained that they actually requested that he schedule more formal meetings of the department so that they could discuss further the issues presented in that first meeting. He also mentioned the reaction of the particular teacher with whom he had the argument. In his words:

Mr. Kevin: // Well they wanted formal meetings more often and that was one request (of them). And she invited me to come into her class because she was concerned that her lesson was not -- that she did not have a good flow to her lessons. That she // that her lessons were really choppy and weren't flowing correctly, whatever she was concerned about // and so she wanted me to go observing her class.

Finally Mr. Kevin presented his impressions after observing that teacher's class, and his assessment of her way of teaching. It is important to remark that in observing the teacher's teaching, Mr. Kevin was replicating the observation plus feedback procedure that I mentioned earlier being used by Dr. John with Mr. Kesini. In other words, Mr. Kevin was already performing his role of support teacher.

Mr. Kevin: So I did (observe her class) and ((clearing his throat)). We haven't had a chance to talk about it yet. But I see some things that she is doing that--she does always, and are not neat things to do. Instead of letting the kids talk, she does more talking. She didn't listen to responses from them that will be, I think, helpful for, not only for her being able to see how the kids were thinking about her ideas that could be beneficial for the class as a whole. She kind of tells them what they should be thinking rather than letting the kids talk (to her). So, but I do think that on the positive side she is starting to realize that there are things that she can do and that we can do together--we are going to do a lot more. ( ) I think she came along pretty relaxed when she got ( )--might have something to do with the fact that she and Mrs. Grace were interacting more. (( Mrs. Grace is another support teacher in a building other than the one where Mr. Kevin works.))

As I said before, it was usual in these meetings that one teacher's report would generate discussions about many problems, suggestions for interventions, alternative solutions, and further actions to be taken by the one reporting. All of the Support Teachers would participate regardless of their specific subject matter affiliation. For instance, Mrs. Cyle, who is a science Support Teacher, offered the following explanation for the happenings in Mr. Kevin's meeting with the mathematics teachers:

Mrs. Cyle: My, that is very threatening to say, 'I don't understand. I don't know.' ((The utterance became very soft and difficult to understand furthermore, others interjected making it difficult to understand what was told in the sequence.))

It was literally impossible to transcribe the ending of Mrs. Cyle's sentence. However, she expressed her empathy with the observed teacher who was confronted with inadequacies and had to recognize this.

Mrs. Lite, who is a mathematics Support Teacher in a different building, continued this pattern of participation as she interacted with Mr. Kevin in the following example:

Mrs. Lite: What I was thinking is like all of sudden we've made her ((the teacher with whom Mr. Kevin was having the meeting he reported before)) aware that there is a shopping list. This [is not her first year].

Mr. Kevin: [she said she didn't feel comfortable] ((referring to the teacher in his meeting)).

In the continuation of this interaction, Mrs. Lite's comments on this teacher is an example of a critical situation. Mr. Kevin saw in that teacher's behavior an instance of resistance to his approach to teaching for understanding. However, Mrs. Lite perceived the teacher's behavior with a different perspective. Here is what she said:

Mrs. Lite: OK. this is not her first year. So what made her to change? You know, what made her aware that she is no longer comfortable with the way things are flowing? ( ) She is aware that it ((her way of teaching)) never bothered her before and all of sudden, now, she is not sure.

At this point, Mrs. Lite changed the subject in the sentence. The one doing the action became “we” instead of the “she” used before. This new way of constructing the utterance with “we” is seen next as it contrasts with the ongoing use of “she”:

Mrs. Lite: At first **we** don't wanna buy in and then **we** don't really know how to give in -- OK, so, **she's** buying, you know, you say 'come on in.' So you tell her 'well, ( ) you need to do this.' That was (what) **she** wants you to do. Sit down and tell me step by step what I need to do. Maybe take the same lesson and show her how you would approach it. Not just say, 'well you need to do this, that and the other.' Just like telling the kids ( ) 'take that map and put it over there and I want you to do the page so and so and I want you to do the problems so and so and so ( ) leave a margin'--I think **she** needs to be ( ) may be **she** will come in and observe your class, that may be the best experience for her.

During my observation, I did not notice the change from “she” to “we.” However, listening to the recorded interactions again, I noticed the change. I started reflecting about the meaning of this. In the next month, I had an opportunity to mention that to Mrs. Lite, and she gave her explanation for the change. According to her, in the process of trying to implement the STP with their peers, “we” the Support Teachers sometimes forget our own path to change and how we move on by sometimes believing and doubting. “I know that,” she said, because I joined the group later, and “I did not have as the others did, a starting training.” She mentioned to me that in many opportunities she was really skeptical about what the people from MU were proposing. At some point she was able to accept it, but still she was not able to put it into practice. Only after talking about the ideas many times was she really able to merge them with her daily practice in her classroom. “That’s why,” she said, “I can see that teacher not really giving a hard time to Mr. Kevin.” Instead, she may be seen as “learning while being skeptical.” That was a very short conversation with Mrs. Lite, but one that enlarged my understanding that teachers could participate in the STP while being skeptical about its propositions.

### Vision of the Support Teacher Role: STP's Message and Negotiation of its Meaning

Next, I will assert that the vision of the Support Teaching role was constructed jointly by the teachers and the researchers during their interactions. In order to contextualize this argument, I will refer back to the interaction between Dr. John and Mr. Kesini, reported earlier. What was it that Dr. John was talking about and Mr. Kesini was supposed to believe? In other words, what was Dr. John proposing that elicited Mr. Kesini's ambivalence (showed in terms of believing and/or being skeptical)?

In the specific interaction presented previously, Dr. John was concerned with demonstrating Mr. Kesini's failure to probe students with questions requiring reflection. In actuality, this issue was part of a larger set of issues that constituted what I will call "the STP message."

I was introduced to this message in a national seminar attended by science education researchers. Dr. John made a presentation about the history of the STP program. In his speech he presented a summary of the STP's message. My summary of his presentation follows:

First, he gave his understanding of the role of support teachers. He said:

Right from the beginning the staff was concerned in providing the teachers with skills in conducting meetings, observing and giving feedback on teaching, and providing leadership in the department to improve the intellectual climate.

Dr. John went on, stating that teachers should be given additional training and research based information, in order to fulfill this role. He described the content of the training offered to the Support Teachers. This point is important to mention because that content is indicative of the STP's message. He presented the content in a transparency and said:

In the inception ((of the program)) we agreed that they ((teachers )) should be reading and analyzing recent research on several issues:

- the learning in science;
- the teaching in science;
- constructivism;
- instructional strategies such as group work, writing, concept mapping, questioning techniques;
- supervision and peer coaching;
- techniques to conduct meetings.

Dr. John's historical account of the STP supports my assertion that prior to working with the teachers I studied, the STP staff had an idealized message about what teaching practice should look like. I started my observations with the impression that the STP's message was researchers' manifestation of their vision of what support teaching should be. My observations proved that first impression to be wrong. The vision of the support teacher role was negotiated during a long interactive process between researchers and teachers and depended on the latter's active participation.

The STP's message was organized around two axes: (1) research-based elaboration made by the staff, individually or as a group and (2) propositions upon which they would reach an agreement, even though they were not clearly sponsored by all the members of the staff. However, that message, in the viewpoint of the teachers I studied, was not necessarily carrying the vision of what the role of support teacher should be. I learned over time that the STP's message reached the participant teachers and contributed to changes in their own vision of teaching, by improving their awareness of their strengths and weaknesses. It contributed to, but did not solely constitute the vision of support teaching.

Analyzing my data, I came to the conclusion that the vision of the support teaching role was a joint construction involving the researchers' message and the teachers' pre-existing experience. The vision was the result of cross-fertilization between teachers' experience and research-based elaboration, or an agreed-upon set of propositions that were embedded in the STP's message. Supportive evidence for my

conclusion came from data the teachers provided on various occasions when they were interviewed.

Next, I will present two of those cases. They are important because they are empirical indications that meanings and external needs, as suggested by Fromm (1968) and Blumer (1969), are internalized in processes of interaction involving negotiation.

The next two segments were taken from a recorded interview done in April 1990. The characters (besides the interviewer) are one female (Mrs. Grace) and one male (Mr. Trackman). Both were seasoned, science teachers in two different schools. The interviewer was trying to get their perspective on the changes they underwent while being trained, the former as a support teacher and the latter as a visiting practitioner at MU. The importance the teachers attribute to their own experiences in their careers is the key aspect to note in these interactions.

Mr. Trackman, a seasoned teacher with 21 years of teaching experience, told of his experiences as aAfro-American student and why he ended up in a teaching career. His story shows how deeply rooted his teaching experiences are. He said:

Mr. Trackman: Oh, that's a long story but I'll make it short. In my junior year in college I was in, actually I was in the pre-med. program. I wanted to become a doctor. And doctors from Bigtown came to our university to interview a group of youngsters. And one doctor in particular pulled me off to the side since I was the only black kid. I didn't realize it at the time. He pulled me off to the side and he asked if I had ten thousand dollars. And I looked at him and I said, "No." I said, "Why?" He said, "Well, you'll need ten thousand dollars."

Interviewer: For what?

Mr. Trackman: He never explained.

Interviewer: For the fees?

Mr. Trackman: I guess. I don't know. But, by him saying that I turned around, and left that meeting, and went over, and changed my major to secondary education, biology.

Interviewer: OK. But then why did you become a teacher? Why did you choose to go into teaching instead of something else related to medicine?

Mr. Trackman: I just found out that I got along well with kids. But I never knew it was my calling then. Then in college, like I said, I made that change, then I decided I'd try teaching since I didn't know anything else I could get into. Medicine was my ultimate dream and that was knocked out from underneath me so I tried it.

Interviewer: But why science?

Mr. Trackman: I liked the biological science mostly. And I enjoy the outdoors because I'm a fisherman. And I like to track animals and follow them and see how far I can get without them noticing me. Because of my love of science, I mean the outdoors, I just felt that maybe science was the best thing and biology fit right into it.

Interviewer: OK. Now, how would you describe this change process? Did the change in your thinking occur as a one time thing or was it continuous or is it just // now? Can you trace the change in your vision?

When I asked him to describe the changes he had undergone, Mr. Trackman expressed his view that the vision of teaching, towards which he was moving, was actually an outgrowth of his feeling that he was a "free wheeling teacher."

Mr. Trackman: The change in my vision?

Interviewer: Or is it a change at all?

Mr. Trackman: Oh, my vision, I think, has changed. I think you can see that just from this conversation here. But it didn't change that much because I also realized, and I'm not honking my horn, I also realized that I fit into a lot of the schemes of these things because I was one of those free wheeling type of teachers. I was willing to take risks. And I'm always willing to take a risk. And whether it, how would we say it? Some people say it--whether it passes or fails doesn't matter to me that much. What matters to me is what did we learn? And if we learn something from it, so be it. And if it didn't meet the particular criteria, that maybe someone else set up or I set up or a student set up, then what were those things? What did we learn and then how can we get to that point? That's what I like. So I'm really a 'way out', I guess you might say, free wheeling, risk-taking type teacher. I don't mind trying anything new that's going to help a kid.

Mrs. Grace, also a seasoned teacher with 21 years of science teaching experience had two things in common with Mr. Trackman: (1) a lengthy teaching experience and (2)



coming into science teaching as an alternative to another profession. Here is what she said:

Interviewer: Why did you become a teacher?

Mrs. Grace: Why did I become a teacher? Um, I don't know, to tell you the truth.

I think it was because probably I enjoyed working with kids and, I think, back in the sixties I wasn't interested in secretarial work. The motivation was definitely to go to college; there was no other. You know, to me there was no other choice, and, ugh science was definitely the area I was most interested in. And, I had thought that one time, and--I know this is a round about way of answering it, but I thought of one time becoming a pharmacist, but ugh, it was too expensive a field to be in and I found myself in the college of education. I guess because I really, you know, enjoy working with, you know, other people and it fit my interests.

Mrs. Grace was far more explicit than Mr. Trackman in indicating her perception that the vision of the support teaching role was a product of her own construction.

Interviewer: So what you are saying is both the training sessions by making you read and discuss on constructivism and your interaction with other science teachers, the discussions with them and discussions with the MU staff, all influenced your thinking?

Mrs. Grace: All these things. Yeah, I mean reading the article//and Dr. John, the two, you know.

Mrs. Grace went on, saying how important the process of change was for her; to be doing things that would provide her with exposure to new ideas. For instance, getting excited about teaching, reading articles and working together with other teachers. She saw it leading to two results: "starting to be open" and "getting out of isolation."

Interviewer: Oh! OK, now ugh how would you describe the progression of your change in thinking?

Mrs. Grace: I don't know how to approach that.

Interviewer: Oh! OK was it a one-time event or, or was the change continuous?

Mrs. Grace: [[Oh sometimes it was spurts.]]

Interviewer: Huh?

Mrs. Grace: Sometimes it was in spurts.

Interviewer: Spurts, I like that!

Mrs. Grace: Um, you know something would really hit me, you know, and I, as soon as there was a point of awareness, then I started looking, you know, for, what I was doing, becoming aware.

Interviewer: For example?

Mrs. Grace: Um, OK one of the first things, like I said, we were hit with, was looking at our own misconceptions and questioning ourselves. OK, ugh now how was that interpreted? How am I getting? Am I setting up something incorrectly, you know, and really looking at things, and taking time, and asking the kids to play back instead of me just-- you know-- and I'd run out and give all the information.

In the next segment of this interview, Mrs. Grace's narrative indicates some of the positive signals of her change in practice. She said:

Mrs. Grace: I think I'm doing a real good job, taking time, cutting down on the amount, not--and just trying for quality instead of the quantity, but I mean I continually throughout, you know, tried to perpetuate, you know new techniques.

I probed Mrs. Grace with a question that is important to take into consideration in understanding her perspective. Her answer indicates that she did not attribute the changing in her teaching to the STP's message or to the content of her training, (either taken alone or together). Rather, she indicated that her participation, (i.e. reaching awareness of her misconceptions and constructing [or better reconstructing] her own experience) accounted for her transformation. Mrs. Grace's account shows the contours of a critical situation.

Interviewer: OK so when you say the change was like a spurt and it hit you, it hit you from what has been said, (or) what you have read?

Mrs. Grace: In other words what I've constructed, when it's made sense and it's almost like I've constructed my own, the, but it's been in spurts, I

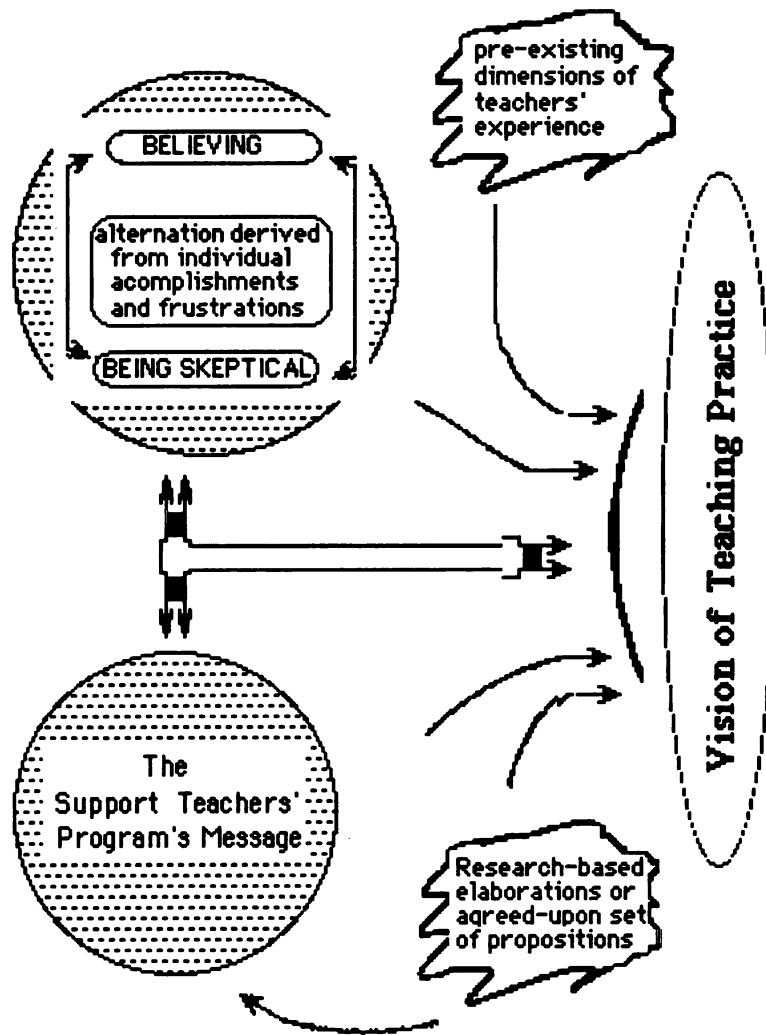


Figure 3. Construction of the Vision of Teaching in the STP

think there was-- uh resistance to change at first. We all had, you know all of us knew we needed a change, but we weren't sure how, you know, how to, and at--sometimes it's like--working with the other teachers it's kind of looking for a foothold or, or an opening, you know but, but with a lot of the reading and then just taking more risks, you know, it's been easier to take the risks as we've gotten encouragement and that and then you know and, and like I said it's still spurts, and, that--but how I am now I can't go back to the old method.

My findings indicate that, in the STP, the process of constructing the vision of teaching practice was a joint action. It occurred during a long-term process of interaction and negotiations between teachers, their peers and the researchers involved. It is relevant to remark that this construction was going on at the same time that support teachers and their peers were vacillating between skepticism and belief, acceptance and resistance. Habermas (1973) has suggested that the interplay between new and old is part of the process of crisis and its resolution. This is shown clearly in Mrs. Grace's account.

Figure 3 (on page 84) illustrates both the complexity of, and input into the construction of the STP vision of teaching. Figure 3 indicates that the STP message, when codified and transmitted to the teachers, entered into an interplay with their pre-existing experiences rather than reaching them in a void. This is indicated by a two-headed arrow connecting the two parts within the circle. In addition, two-headed arrows indicate that what happens with teachers and researchers both influence in and receive influence from the vision of teaching practice being jointly constructed.

Also, Mrs. Grace's account indicates that her ambivalence between belief and skepticism was being resolved as she gained awareness of her own teaching practice. She recognized the importance of the STP in terms of providing encouragement for her risk taking in attempting to change her teaching, but she stressed strongly her awareness as her turning point.

As I spoke with various other teachers, the majority of them indicated that, at some point after experiencing ambivalence or contradictory reactions to the STP's

proposals, they reached a point of awareness that something had to be done, on their side as teachers, to improve students' learning.

Therefore, it is fair to state, that the ambiguity or contradiction represented by being skeptical while participating in the program did not disrupt their participation. Rather, it contributed to the quality of their participation. The data support this belief, especially as advanced in Habermas (1973) view of crisis: That no transformation -- either individually or in society -- is possible without a critical stage where structural changes have to be made to keep the structure's identity stable.

Implied in Mr. Kesini's interaction with Dr. John, in Mr. Trackman's, and in Mrs. Grace's accounts of their experiences is that contradictory reactions -- such as belief and skepticism -- were equally valid choices for channeling their participation. They were all active participants in the STP and contributing to the fulfillment of its purposes.

As the data indicate, the teachers were reviewing their practices in light of what they were learning in the STP. Thus, STP became for them an environment in which to: (1) express their ambiguities, (2) feel dissatisfaction with themselves and (3) fully realize their traditionalism. In doing so, they reached the critical stage summarized by Mrs. Grace: "But how I am now I can't go back to the old method." From that time on, her only choice was to adopt new practices, which required her personal transformation.

The data I have presented thus far indicates that the Support Teacher Trainees displayed contradictory reactions. The participant teachers were volunteers and believed to be accepting STP proposals.

I observed other reactions to the STP's proposals that led teachers to check their own experiences from another viewpoint. My findings indicate that teachers participated in the STP not only by accepting its proposals but also by resisting them. The next section will provide detailed examination of those aspects.

### Acceptance and Resistance as Forms of Teacher Participation

As I described earlier, during my period in the field, I conducted close observations of the group of four Science and four Mathematics teachers who were participating in the STP. For the most part, I observed those eight teachers as they participated in the seminars designed by the MU people to provide them with technical assistance

For triangulation of data, I also observed four Peer Teachers of the science teachers. My motivation for observing the Peer Teachers was the recurrent use of the terms “resistance” and “resistant,” applied to some Peer Teachers during the seminars I mentioned above. Data for this part of the dissertation will refer mainly to Mr. Trackman and Mrs. Kelly, science teachers in one building, and Mr. Simpson and Mr. Star, also science teachers, but in another building. I will not include all their stories in this report. However, my observations and interviews with these teachers were very important to my understanding of the issue of resistance.

I conducted these observations in two different contexts. Mr. Simpson, Mrs. Kelly, and Mr. Star's observations took place in a set of seminars, parallel to the ones I described earlier in this section, designed for the professional development of the Peer Teachers. I will call them “Type II Seminars”, to distinguish them from the meetings of the support teachers, which I will refer to as “Type I Seminars”. Although the Peer Teachers were not required to attend the Type II seminars, more than half of them actually did so. At that time, the Support Teachers were involving their peers more actively in the restructuring process and the Type II seminars were viewed as an opportunity to advance that process.

Data gathered during those observations support the assertion that the ethos of teachers' participation included acceptance as well as resistance to STP's proposed changes in their practices. My findings indicate that teachers did participate in the STP project sometimes with one disposition, sometimes with the other, and some other times

by oscillating between acceptance and resistance. This means that resistance was also a valid way of participation used by some teachers.

This idea is illustrated in the following figure.

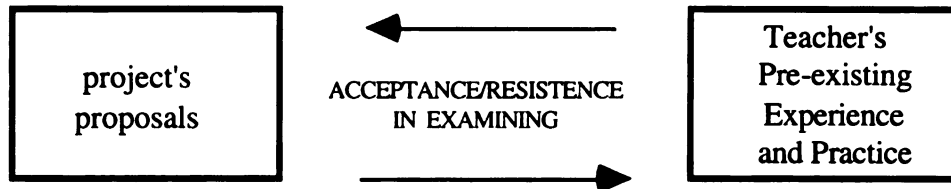


Figure 4. The Ethos of Teacher's Participation

Some of the teachers I studied valued their pre-existing experiences more than that which the STP was proposing. They sometimes displayed a disposition to resist STP's propositions. It took me some time to realize that. When I first focused my attention on the issues of resistance and acceptance, I had my mind set to look for teachers rejecting the STP program and its ideas.

Quite often Support Teachers in the Type I seminars referred to their “resistant” peers. When I heard this, my first impression was that they meant “rejection.” Rejection happened as well, but not to the point of compromising the program as a whole. For instance, among the teachers in the building where I did the shadowing, only one teacher could be said to be rejecting the STP. Informal conversations with the Peer Teachers and their interaction with the support teachers led me to rethink my first impression. I suspected then that I was looking in the wrong direction as far as understanding resistance. The idea that resistance and acceptance could be part of the same process of participation took shape after reviewing an interview I had with Mrs. Polly and Mrs. Cyle. Mrs. Polly was the mathematics teacher and Mrs. Cyle was the science teacher being trained to be Support Teachers in the building where I did the shadowing. This

happened in May 1989, when Mrs. Polly was giving me her assessment of the past year's chained set of tasks (mentioned earlier) in her building.

She gave me a long interview in which she told me how much her mathematics department academic environment had improved. The improvement was visible to her in the way the seventh and eighth grade teachers reacted to their academic meetings. As she explained it, they were now seeing more meaning in their meetings, as compared with previous years. She described her Peer Teachers in mathematics as follows:

They're willing to get together and I'm going to have to be the person that says, 'Let's have a meeting. Let's pick a date and do it'. But they are willing to do it. So there's been a lot of progress along those lines too. They're enjoying the communication that exists at the meeting.

This reference to teachers' reactions to meetings is significant, especially because departmental teacher assignments were planned more for administrative than teaching purposes. I had observed this during my shadowing period in her building. For instance, teachers had to take a vote on administrative issues such as: (1) whether or not a program like the STP should be adopted, and (2) managerial curricular questions such as which book to use. However, in our interview about five months after I initiated my shadowing, she described teachers getting together in meetings to discuss their ways of teaching. This was something very different from voting about administrative issues. This was a higher and more positive level of participation. However, as we continued our conversation, she mentioned that resistance still existed within this overall positive environment of participation. She said:

As far as an overall look at this whole program thus far this year, there has been frustration at times over the obvious resistance of some of the people. // not all resistance has disappeared. That I think has been the biggest frustration. But there's been a lot of improvement there, too. I mean, some of the people have come a long way in a year's period of time, further than I really thought they would.



Mrs. Polly and Mrs. Cyle gave me their own explanations for the resistance. I found in their explanations that both resistance and acceptance were explained in terms of insufficient information given to them about the STP.

Once, in December 1988, Mrs. Cyle was talking with me about her perception of the STP and its evolution. In the following segment she mentions that STP was seen by most of the teachers as something that would not come to impact them, but their students. She said:

Well -- When we first heard about the project, the idea was -- and if memory serves me correctly -- it was that we have a program that's going to help improve the students' learning if we want to participate. We had no idea just what it was going to involve, what it was going to entail. Most of us thought we were getting involved in something that was going to have a direct effect on the students.

Mrs. Cyle also indicated to me that resistance took shape as the teachers began to participate in the STP and to perceive that their teaching was the primary target for the STP-initiated changes. Here is how she indicated this:

Mrs. Cyle: As we got into the program more and more and more, it wasn't ((that)) the ultimate aim was a direct effect on the students, but the change had to come from the teachers. And that's--that was the misconception of most of the teachers on the faculty. They wanted something, as long as it was going to change the kids. But when they found out that it was going to involve them, they began to resist. In fact, I've had more than one tell me that if they'd known what this was all about they would have never voted to have had it come in. But that's because it means that they have to change and change is hard. It's much easier to blame the kids, it's much easier to find something that the kids are going to do to get more learning, but it's very hard for the teacher to have to take on the responsibility.

I learned from Mrs. Cyle that resistance was structured during the process of participation initiated by the teachers. It is important to note that, whereas strategically it is possible to set stages of development for the program, the social phenomenon involved is a continuum. One can speak of training teachers as a first stage and having them affect their Peer Teachers as a second stage. The process of interaction, however, is such that everybody is participating in a whole social process. In this sense, the resistance that

started taking shape developed within a process of participation. The STP, in fact, managed to appropriate this social phenomenon to its own advantage. It did so by implementing what I previously termed a chain of tasks (that is, training the support teachers and having them affecting their Peer Teachers all at once).

Mrs. Polly also perceived that the information given in the beginning of the STP was insufficient. However, she took this in a rather positive way, as being wisely meted out, so as not to scare people away from the program:

Mrs. Polly: They [people from MU] were wise enough not hitting us with too much all at one time. I guess one example I could give was that they, at the beginning, told us that we were going to be in observing. I mean--You know--they never said we weren't going to do that, but they didn't put a heavy emphasis on it. They put the emphasis on 'the things that you are going to do are going to help to improve student learning' ((stressing)).

She did not suggest that the information provided was misleading. Rather, she indicated that the given information helped to create a consensus among the teachers. She saw a purpose in the way the information was provided. According to her understanding, the MU people were in fact modeling for the prospective support teachers the way they should approach their Peer Teachers.

Mrs. Polly: None of us are going to argue with the fact that we want to improve student learning. And of course, now we realize that they were modeling to us what they wanted us to do in turn. We could not come in to our people ((referring to the peers)) and say at our first meeting, 'and by golly every last one of you is going to change everything you're doing now.' ((stressing))

As if talking about her own experiences as she bought into the STP proposals, she explains how a process of change must be established. She stresses the need for teachers' active agency in this process, both in terms of gaining awareness and in building new internal structures.

You can't do that. It has to be done slowly. The awakening of the whole picture has to come slowly and it has to be something that you build up

within yourself--You have to realize that it's necessary, that it's important, and come to some conclusions on your own.

Next, Mrs. Polly indicated what, in her perspective, was the basis of her participation. She does not necessarily believe in giving full information just for the sake of information, but rather in giving just enough information to start up the process of joint action.

Mrs. Polly: If we had walked into that first meeting and they would have said, 'now you're going to be in and observing "X" number of times and you're going to have to hold "X" number of meetings, and you're going to have to do'--we all would have said, 'No. We're not!' ((stressing)) Because that really would have frightened us off immediately (pause) So they were wise in not giving us a total picture right away.

When she talked with me and gave her understanding of that situation I took it as a reasonable viewpoint. However, in our interviews she did not demonstrate awareness of the disempowering potential of such an understanding. Mrs. Polly was willing to accept only a partial picture of a complex task in which she had asked to engage. By accepting partial knowledge as compared to that which was necessary to accomplish a task she was contributing to, and legitimating, a rather perverse power relationship, that of suppressing opportunities to learn. As Mills (1955) points out:

Only when mind has an autonomous basis, independent of power, but powerfully related to it, can it exert its force in the shaping of human affairs. Such a position is democratically possible only when there exists a free and knowledgeable public, to which men of knowledge may address themselves, and to which men of power are truly responsible. (p. 613)

So far in this section, I have marshaled data that indicate that: (1) "resistant" was a label mostly applied to Peer Teachers, even though Support Teachers also recognized they were sometimes resistant, too; (2) both resistance and acceptance were structured as a result of the perceived meaning of the information provided about the STP, in the beginning; and (3) resistance should not be confused with rejection.

In the follow-up, I will provide data to support the assertion that participation, displayed as resistance, also involves a comprehensive revision of teachers' pre-existing experiences and practices. Findings in this research suggest that resistance to proposed changes, required from observed teachers, increased awareness of their own limits, This improved the understanding of their own experiences and practices.

Having described snapshots of the processes involved in establishing a crisis from the viewpoint of acceptance, I will now do the same with respect to resistance. In order to do this, I will highlight my observations of Mr. Simpson.

Mr. Simpson was the first teacher described to me as being resistant. This happened after I observed a repeated use of the term, applied to Peer Teachers, by the support teachers in their meetings. During my shadowing, I asked Mrs. Cyle to give me examples of resistance. The first teacher name who came to her mind was Mr. Simpson. Here is what she said:

Mrs. Cyle: Oh--Uh--Mr. Simpson initially saying that he did not--you know--he'll try almost anything but don't ask him to do group work. He did not want to even think about group work because he was afraid of losing control. I think from yesterday he may be trying a little bit more of it. His first idea, I think his first check was when we were talking about misconceptions, he came back that very first day and put up a mind structure that he was going to prove us wrong. You know. He had probably taught that lesson very well and they were going to be able to do well on it. And he was very surprised that they didn't know what he thought they knew. So, it's been slow coming, but I think he realizes that we've got to try and do some other things.

Mrs. Cyle's description did not quite fit the label of "resistant," if Mr. Simpson's resistance was to be understood as rejection. Furthermore, in clarifying her proposition, she explained that he was resisting performing some of the proposed techniques (group work, in this case), not the core of the propositions. In fact, as I observed her teaching, she was struggling with the same questions as Mr. Simpson. She was also attempting to do group work in her classes and had the very same concerns about being able to maintain control. Having been already skeptical about resistance being the same as

rejection, after my interview with Mrs. Cyle, I dropped the idea for good. What I was facing was a different method of participation.

Mr. Simpson was not prepared to check his experiences against the STP's proposals. He decided to check the STP's proposals against his experiences instead. He felt a need for more clarification about the program and expressed that at its onset, a time when the project staff was not yet ready to provide a full picture of what a support teacher was supposed to be. When they proposed to pilot the program, they were proposing a fully collaborative enterprise. That was not completely clear to Mr. Simpson and the project staff did not fully understand his reaction. He decided to be a vigilant observer of the program. That was considered to be resistance.

Next, to marshal support for my assertion I will present data from my observation of Mr. Simpson. Once, I did ask Mr. Simpson about his personal history with, and within, the STP. He said:

Mr. Simpson: I was there in the beginning. The staffs of the Junior High science and math departments were invited to a meeting at the Board of Education Building to hear of a new program that would enhance our teaching techniques.

He is referring to the same meeting Mr. Kevin described earlier in this chapter.

He proceeded:

Mr. Simpson: One question was asked at that meeting that I will never forget. The question set the tone for me to be labeled a 'skeptic'. I should say it was not the question but the answer that has kept me on the defensive.

Mr. Simpson is referring to the meeting I mentioned before where the STP's basic ideas were explained to the teachers, before they were asked to decide whether or not to join the program. Mr. Simpson's statements indicate his perception of what the STP was about one that is quite distinct from that of other participants as I described earlier in other parts of this section.

Mr. Simpson: Question. Has this program ((the STP program)) ever been attempted before? Answer. Yes but it was not successful for reasons that we had no control over. This mystery has always haunted me. The president of the AFT in Uniontown spoke of this being an opportunity to share the best of our ideas. To the best of my knowledge, we were not informed that the program would reteach us how to teach. Ancient proverb: never volunteer.

Based on his profile, perhaps “challenger” is a better name for Mr. Simpson. I interpreted this piece of his understanding of the STP within the frame of ideas about teacher's professionalism, as presented in chapter III. I believe that Mr. Simpson made up his mind at the very beginning of the program that he should be radically alert about his professional autonomy. He viewed the STP as one more attempt to invade teachers' already impaired professional autonomy. I observed his behavior on various occasions when he participated in the Type II seminars. He was always inquisitive and eager to ask questions in terms of "why", and I learned by talking with him that he had his reasons for this. As an experienced teacher, he had a good historical perspective about what had not worked before, and why it had not, although it had been imposed on teachers in the name of educational reform.

In a long interview on April 25 1991, we talked about how, in his perception, teachers had been treated so far by reformers. In that conversation I learned many interesting things about Mr. Simpson. For instance, being of immigrant origin he had to struggle a great deal for his professional education. Because his family neither had the knowledge to advise him nor did they value education to the point of really helping him, he had to make decisions on his own about his education at a very early age. He became accustomed to taking a highly critical approach to opportunities and ways of doing things. He maintained this perspective while participating in the STP.

Mr. Simpson's resistance of the STP's proposed changes constantly challenged other teachers' acceptance. The following quote is from an interview with the science support teacher, Mrs.. Cyle, who was working with Mr. Simpson. The quote illustrates

that, in a way, his challenge helped Mrs. Cyle keep herself alert about the outcomes of the project.

Mrs. Cyle: He'll try almost anything but don't ask him to do group work because he is afraid of losing control. I think from yesterday ((referring to a meeting she had with her peers as part of the project)) he may be trying a little bit more of it. His first idea, I think his first check, was when we were talking about misconceptions. He came back that very first day and put up a mind structure that he was going to prove us ((the two support teachers)) wrong.

However, in resisting, he was unknowingly contributing to the process of legitimizing other teachers' acceptance, as the next piece, from the same interview seems to indicate.

Mrs. Cyle: You know, he had probably taught that lesson very well and they ((the students)) were going to be able to do well on it. And he was very surprised that they didn't know what he thought they knew. so, it's been slow coming, but I think he realizes that we've got to try and do some other things.

In an interview Mr. Simpson expressed some of his ideas about the relationship between researchers and teachers. The following segment of the interview mentioned above serves to summarize his perspective.

First, he makes it clear that the researchers' agenda is not necessarily the same as the teachers'.

Mr. Simpson: Well you're interested in getting your research (done), and--the people from MU are interested in conveying their ideas, because that's what they are interested in at a particular time. But everyone else looks at it as another program coming along--because we have--every so many years, it appears or it feels like someone comes up with a new and better idea and --how many times can you listen to that new and better idea and say this is great!?

Mr. Simpson was adamant in his irritation over the never-ending plethora of "fantastic" ideas invented by researchers and which they imposed on teachers. As he described it: "That is hard to swallow."

And here we go again! ? ((stressing))

You know--it is the same thing. Everyone has--someone comes along with data, research, whatever you might wanna call it, and then come up with something fantastic ((stressing)). Where does a person like myself and everyone else in the school draw the line and say (pause) You know--is this going to work or is this another one of those ( ) like the others!? Now every program has its merits. Don't get me wrong. There are some things that I learned in the past that I still use today. I feel like I use them--I feel like I use the ideas whether I will do or not another approach but -it is always a new and fantastic idea. It is hard! It's hard to swallow! It really is!

Although it involves a different route than acceptance, resistance, also, involves a comprehensive revision of teachers' pre-existing experiences and practices. Therefore, both acceptance of proposed changes and resistance to them are significant ways for teachers to improve their understanding of their experiences and practices. For instance, as the STP program unfolded, Mr. Simpson, did assess his previous experiences to make sure he could keep his autonomy as a professional. His examination was not made necessarily for the purpose of changing, but instead for the purpose of being assured of the possibility of keeping his choices open, including eventually trying some of the ideas presented by the program. In talking about this aspect of his reaction to the STP, he did not see himself as resistant. Rather, he perceived himself as skeptical; as he described it, "resistance - no, foot dragging - yes."

As we continued our conversation, he indicated that he underwent an examination of his practice. However, in the next topic, he asserted that the reason for the examination was professional autonomy rather than anything else:

Mr. Simpson: Even with a program like ours, we are still independent. If there is an aspect of the program that I don't feel comfortable with, I won't use it! We are supposed to be an educated lot. Yet, because we must perform everyday many (times), a teacher has a very large ego. We don't like to be told that what we are doing and the way we are doing it is wrong. Resistance to an untried program and methodology not completely written is called scrutinizing. If we ((teachers)) did not observe, inspect, and criticize and critique, who would?



It is important to take note of the choice of words that Mr. Simpson used to talk about the STP program. Referring to the STP, he said "Even with a program like ours..." Although his mood was still resistant, he clearly expressed a sense of ownership in considering the STP "our" program. In this entire segment Mr. Simpson was affirmative about the STP, although using a negative way to articulate himself. I interpreted Mr. Simpson as saying: "yes, I would try the ideas proposed by the STP, as long as I am comfortable with them and, as long as my autonomy as a teacher is preserved. As he said: "we ((the teachers)) are still independent."

Mr. Simpson's transformations were rather different from those of some of the other teachers I observed. In his case, individual transformation, started from the perspective of his skepticism and disposition to assess his past experiences and to positively value them.

It is a commonly accepted that one can participate in something about what one have substantial knowledge. However, restructuring educational settings may involve working to bring a vision into real existence, without completely knowing what the whole picture will look like. In the next section I will report findings about how my subjects came to realize all that was involved in the STP and how they felt about that.

### The Coalition

As I explained earlier in this chapter, the STP program was an ongoing project by the time I began my observations for this study. Sometimes I found myself curious about aspects of the program and my participant observation provided me with no answers. For instance, in the winter of 1991, I was observing a meeting in which the support teachers and the researchers were interacting. Among other issues, they discussed ways of making the STP more visible and solving problems of temporary financial support. The focal point of part of the discussion was an alternative, suggested

by the researchers, that teachers should pay credit hours to MU so their technical training could continue. That suggestion elicited a strong response by one of the teachers. He asked: "Are you suggesting that we pay for your affordability?" He said. The other teachers supported him indicating that they had assessed this and other alternatives at their own meeting some days ago. The researchers and teachers finally agreed about the issue and decided to write a proposal to a funding agency. The key aspects were that the teachers: (1) began meeting on a regular basis and (2) had their own ideas about what to do in difficult situations. These key aspects had an effect of bonding the teachers together to face the challenges of the new role of Support Teacher.

I was aware of those meetings and their purpose (discussing how Support Teachers would do their job). However, I was unable to attend and observe them. In my field notes I referred to those meetings as "the coalition" due to its importance in helping me understand how the teachers I was studying realized what the project would involve and their feelings about it.

The study progressed and the question of knowing when that realization started became important to me.

In my field notes, I recorded three opportunities that provided answers about the coalition. The first was an occasion when I was talking with Mr. Abe, the graduate student who assisted Dr. John on this project, and he explained his perceptions about the STP. On the second occasion, I had a conversation with Dr. John about the program's start. The third was an interview with Mr. Kevin during which we discussed the coalition's early days.

Next I will try to summarize those three actor's perspectives because I believe they provided an answer to my concerns. During the time I was doing my research I had many opportunities discuss the STP with Mr. Abe. Once we spoke while he organized the STP documents into files and we began discussing the importance of documentation in qualitative research. He caught my attention, saying: "for instance, look at this

document! It contains the schedule for what became known as the 1988 Summer Program." Then, after a short pause, he added: "Just looking at the document, nobody would guess that a revolution happened there, in the meeting." I was curious and asked: "what do you mean?"

In summary, he told me that teachers came to MU and stayed on campus for almost a week. That was after seven months of training at Uniontown. As part of the summer program and as support teachers for their schools they were supposed to organize a plan for the next academic year's intervention.

The first day ended with a cookout meeting at Dr. John's house. Next morning they asked for a private meeting with Drs. John and Perlan to talk about the task they were required to do. They spent the whole night, after returning to campus from dinner, discussing among themselves what they did and did not intend to do. As Mr. Abe recollected, they were all very tired. However, it was only after speaking with Drs. John and Perlan that they started doing their advanced planning for the coming academic year. According to Mr. Abe, after that night, teachers really took responsibility for the Support Teacher role.

Dr. John referred to that event once when we were talking about the STP program's beginning. In his opinion, the teachers' stay at MU together for a week, was influential to their effectiveness as Support Teacher. I asked him his opinion of what happened. He said that no one still knows what really happened that night. However it had visible effects on teachers' engagement. According to Dr. John, that was the biggest turning point for the teachers because they decided, as a group, to try the support teacher role. They also formulated some plans of action that would help them initiate the program when the school opened a few days later. That decision came after almost seven months of listening to, and interacting with, the researchers' ideas of the role of a support teacher.

I also had a chance to discuss the Summer Program with Mr. Kevin about. According to him, teachers from Uniontown came up to MU and stayed a week on campus for more in-service training, working preparation and planning for the fall of 1988. Fall 1988 was the initial year of the-three year pilot program. Then, he said, "We were off and running for the school years of 1988/89, 89/90 and 90/91."

I saw an opportunity to get an insider's perspective on how the coalition started and its implications. So, I said to him: "Some people say that this summer session was the actual starting point of the coalition." He replied:

"Yes, exactly. I think it all came together when we were all on campus here."

Mr. Kevin told me about the in-service training and the concentrated information to which they were exposed during the first seven months of the program in Uniontown. In his words

So much had been packed on us and packed upon us. We got so much in a short amount of time that it was almost overwhelming to all of us and we felt a certain amount of frustration.

He also told me that while they were in Uniontown with their heavy teaching load and other concerns, frustration did not surface. However, being on campus at MU caused it to surface. The following excerpt from our interview demonstrates how he perceived the starting point of the coalition.

Things finally just kind of all came together when we were up here on campus. We would spend concentrated days in classrooms with John and Perlan. Afterwards going back to our rooms we would get together, eat dinner together, seat down and study together. We would talk together and try to see if we all could make sense of this whole past six or seven months, whatever it was that we had been working on. We still were not sure of what that was that we were expected to do. And exactly how to do it, even though we worked trying to prepare for that. I think we all sat down and shared our ideas and frustrations. // and from all that came like you said a coalition. A kind of a bonding, if you will.

We talked more about the relevance of the summer program, especially for the participant teachers. Mr. Kevin viewed the Summer Program as the actual start for most of the support teachers. Mr. Kevin's perception was an answer to my concern about when the teachers I studied realized all that the project would involve. His perspective also provided an insight into what those teachers felt about their proposed role. They started with information that did not make much sense to them. Acquiring information in that way generated many frustrations. By sharing their frustrations and the new ideas about teaching, they began putting things together and were able to make a conscious decision, one that they were unable to make when they first decided to be part of the program. All that seemed to have happened when they left a posture of isolation and moved toward their coalition. Here is how he referred to that:

I think we finally took charge of our positions. We were kind of laying back until then because we all felt somewhat unsure of ourselves. But I think we got to the point where we were just pressured enough into it and that was forcing us to come together. That was what happened I think, up here.

Findings in this section, demonstrate that the teachers I studied took a great deal of time to feel comfortable about working to actualize the Support Teacher vision. In addition, my findings demonstrate that only when they felt themselves really "in charge" of the task they were comfortable about its practice.

## CHAPTER V

### Overview Conclusions and Suggestions for Further Investigation

This final chapter is divided into three parts. First, I will present an overview of the study, including research questions, methodology and findings. Second, I will present a set of conclusions that summarize what I learned with the research. Third, I will present suggestions for further investigation.

#### Overview

In this research, I dealt with the empirical task of learning how teachers participate in restructuring their practice. To date, I believe this issue has not been studied in appropriate terms. Reformists often state that teachers should actively participate in the efforts at restructuring. However, there has been little investigation on the nature of their participation. Mainstream research on teachers' participation was conducted under the burnout perspective (Hoover-Dempsey & Kendall, 1982; Penny, 1982). However, the burnout perspective does not address all of the complexities of the question as implied by Vavrus (1987) and Barnett (1985).

I conducted this investigation to learn how a group of teachers participated in a project that was designed to restructure their workplace and what was involved in the process of participation.

Support Teacher Program (STP), an ongoing project with a focus and an environment appropriate to learn about the questions in my research, greatly facilitated my learning process. STP is an attempt to restructure the Science and Mathematics departments in four schools located in a middle-sized midwestern, city in the United States. My pseudonym for the city is "Uniontown." STP's primary mission is to develop a new role, called support teacher. Thus I "negotiated entry" (Erikson, 1986) with teachers participating in the STP, to study and learn about their participation. From December 1988 through March 1991, I recorded the participant teachers' interactions in various stages of the STP's development.

The primary question in my investigation dealt with how those teachers were participating in restructuring their professional roles within the context of modifying school practices. Although the major question remained the same throughout the investigation, as evolution occurred the viewpoints, within which I focused the question, evolved.

On different occasions, I became interested in learning how the teachers were negotiating the meaning of their new roles with researchers and among themselves. In addition, I became interested in understanding how the teachers perceived their socialization into the new roles. Finally, I directed my attention to the role socialization of those accepting and those resisting the STP. My purpose was to learn if and how that socialization was different. As a consequence, as seen in Chapter IV, the nature of resistance became another important focus of the dissertation.

I conducted my investigation within a critical ethnography perspective. From the beginning, I advanced a conceptual framework to make explicit the interpretive lenses I used for the observations and data analysis. The framework draws from sources in social theory primarily the concept of crisis (Habermas, 1973; Habermas, 1981), the symbolic interactionist's argument (Blumer, 1969), psycho-sociology (Fromm, 1968) and tools of interpretive investigation (Weber, 1949). I then derived an interpretive

framework from the theory and used it in data interpretation and analysis. This framework is an application to this study of ideas used on Figure I to conceptualize an ideal type of participation

In the process of doing the study I made an effort to harmonize principles of ethnographic research used in my investigation (Agar, 1986; Bogdan & Taylor, 1975) with the use of a microcomputer to handle the qualitative data I was accumulating. In doing so, I developed a computerized system to handle qualitative data that I named the "Monteiro Data Organizer" (MDO).

### Conclusions

This section covers two kinds of conclusions. First, in parts 1-7, I will summarize what I learned from a theoretical, methodological and empirical standpoint as I studied the Support Teachers and their Peer Teachers. Second, in part 8 I will refer to the use of a computer as an instrument in my qualitative research.

#### 1. Changing Teachers' Practices

I have learned that experienced, seasoned teachers, such as the ones I studied, can make crucial changes in their teaching practices. Teachers, in this study went through a range of changes. I observed in them the following: (1) became more disposed to listen to criticism regarding their current teaching practices; (2) began self-initiated conversation among themselves about STP's ideas to improve science and mathematics teaching; (3) actually attempted to put into practice STP's ideas within their classrooms; and (4) began actively sharing with others the expertise they acquired during those attempts. It seems fair to say that teachers moved from being "listeners" to being "practitioners" of the STP's ideas.



## 2. Participation and Critical Situation

Teachers' participation in the STP, can be explained in terms of searching for a way out of critical situations. The idea of critical situations is derived from the concept of crisis. Habermas (1973) asserted that we can speak of crisis when structural alterations become really necessary for the continued existence of a structure (individual or social) and its identity is threatened. The consequence of crisis is twofold. Upon reaching a critical point, two possibilities are open. Either it assimilates alterations and overcomes the crisis or it begins to collapse. The focus of this research was the first possibility most of the teachers observed went through and overcame critical situations or crisis while participating in the STP.

## 3. Critical Situation and Individual Agency

During interviews with my subjects I tried to uncover the process by which critical situations were encountered. As a number of them agreed, that was associated with how teachers entered the program and how the support teaching role was negotiated between teachers, researchers and among themselves. Teachers being trained as support teachers and their Peer Teachers bought into the STP program by their own agency. Self agency was expressed in two ways. First, they voted, in each building, to be part of the program. That vote set teachers as participants in the program, no matter what was the predisposition of each one of them individually. As their participation evolved, self agency was further expressed, and by their own initiative, they tried ideas coming from the program. It was then that critical situations emerged. During our conversation, they acknowledged two social elements as having significance to them: (1) the professionalism pursued by AFT and (2) the demographic changes occurring in Uniontown. These two elements contributed to the climate for teachers' participation in the restructuring proposed by the STP. The first, brought an increased responsibility to teachers, although stressing their ownership and autonomy. The second, a concentration of minorities

within urban areas which increased diversity among students. The STP program added a third element, an opportunity for teachers to increase their awareness about the effect of those elements on their teaching expertise.

The interplay between these elements exposed, in various degrees, the inadequacy of the existing teachers' teaching expertise, especially when dealing with students coming from non-affluent and minority groups. It was their acknowledgment of that inadequacy that actually set up a context to negotiate the meaning of their new role of support teachers.

#### 4. Contradictory Nature of Participation

The teachers I studied participated in the STP program in two pairs of apparently, opposing ways: believing and accepting, being skeptical and resisting. The inclusion of categories such as "being skeptical" and "resisting", does not imply the idea of rejecting the STP program. During my observations, I heard about teachers who could fit the category of rejecting the STP program. However, they were not a pattern I focused on in my study as they essentially refused to participate. A key conclusion in this study is that being skeptical and resisting are both valid forms of participation. My data suggest that those two paired forms of participation unfolded as a process in which critical situations were encountered and overcome.

#### 5. Critical Situation as a Turning Point

Findings indicate that teachers participated in the program by means of accepting and/or resisting the proposed changes. Using Fromm's ideas about individual character, one can say that those teachers' traditional character was shaken by the social elements mentioned before. Teachers in this study were already realizing that traditional teaching was not solving their teaching problems. In their context, the usual habit of blaming teaching problems on students' inability to learn, was not satisfactory anymore. I will

call this phenomenon a mismatch between teachers' experience and social needs represented by students' diversity. That was already perceived by most of the teachers and was producing contradictions in their behavior before the STP arrival. Through their involvement with the STP, the teachers were becoming more and more aware of that mismatch. During my study, I learned that the more they became aware of that mismatch, the more they retrospectively assessed their own practices. As a result, they became more receptive to the STP ideas.

I asked some teachers if they had a specific issue, event or conceptualization that acted as a turning point toward being more receptive to the STP proposals. One of them said it has happened to him when he had a chance to deal with the issue of his students' misconceptions. That conversation took place in the presence of several other teachers while we were waiting for a meeting to start. Most of them agreed with their colleague, acknowledging students' misconceptions as having an impact on them that motivated them to look for new styles of teaching. Therefore, I concluded that they began a process of change after realizing the inadequacy of their practices when measured against students' actual learning or, to use the insiders' words, their "misconceptions." That realization was critical for them to move toward new ideas.

## 6. Resistance and Acceptance as Patterns of Participation

In this study I tried to understand how believers differed from skeptics. In Chapter IV, I indicate that the research question related to this issue changed during the study. I began the study looking for patterns of rejection. Then I focused on looking for examples of teachers who were not willing to be part of the STP program. However, the teachers I studied approached the STP's proposals in an oscillating pattern, sometimes believing and at other times being skeptical. Therefore, resistance and acceptance can both be forms of participation. Believers were not different from skeptics because believers accepted and skeptics resisted the STP program. They were living through

contradictions in their profession that were forcing most of them to assess their experience and at the same time to search for a different style of teaching. What was different was the departure point from which they assessed their existing experience.

In the acceptance mode, teachers used STP propositions as a parameter to assess their experience. The main concern was to see what had to be changed in their teaching style to match the requirements of STP program. In the resistance mode, teachers used their preexisting experience as a parameter to assess the STP propositions. The main concern was to substantiate preexisting experience. However, in the resistance mode the teacher's own expertise was more valued than it was in the acceptance mode.

Although teachers performed this assessment in two different and apparently opposing fashions, they underwent individual transformations as a result of their participation. According to my findings, the different perspectives produced the same qualitative result. That is, teachers were confronted with the inadequacies of their teaching practices and changed.

## 7. Power Relationships

I stated in Chapter I that this dissertation's main purpose is to address teachers' participation as negotiation of meaning. The aim is to offer a contribution to understanding some elements that would help in describing the nature of teachers' participation. To achieve that purpose, I observed a group of teachers while they interacted among themselves and with a group of university professors I called researchers.

To conduct the research, I developed a theoretical framework detailed in Chapter II. That framework is based upon sources within the social sciences and draws mainly from the following traditions: (1) symbolic interactionism and interpretive sociology (Berger & Luckman, 1966; Blumer, 1969; Schutz & Luckman, 1973; and Weber, 1949); (2) critical theory (Habermas, 1973); and (3) social psychology (Fromm, 1968).

The reason to advance a set of conceptual perspectives and use them during the research, was the need in terms of Interpretive Sociology, to establish the theoretical lenses I used and the light they would throw on the social phenomena I was to interpret. According to Weber (1949):

Without the investigator's evaluative ideas, there would be no principle of selection of subject-matter and no meaningful knowledge of the concrete reality (p.82).

The symbolic interactionist's argument played a considerable part in helping me to make sense out of my observations. The main point in this argument is that people construct their social world through their interpretations and actions. Therefore, the argument strongly stresses negotiation of meanings as a way to construct social order at a given level.

Sometimes when I was conducting my observations, I observed situations where power relationships surfaced. I will give some examples. The methodological strategies I used to observe teachers' participation focus on negotiation because that was the main purpose of my study. Moreover, since domination and control are not necessarily negotiated issues, the research approach I used for the observations (symbolic interactionism), although very important in describing the negotiation of meanings, was not the most adequate to unveil power relationships. Therefore, I concentrated my research on the flow of understanding in interactions, rather than in their discontinuities. The study of power relationships would be more appropriately done by focusing on the discontinuities. That is what the literature suggests, since power relationships can be found in the background of social processes involving negotiation of meanings (Hammersley & Woods, 1976).

Having said that, however, qualitative researchers cannot claim that their eyes are closed to events other than those at the focus on their research. The following examples of power relationships are important on two counts: (1) as a reason why people

involved in programs, such as the STP, should care to do further research on the issue of power relationships and (2) as a possible answer to the question of why the STP program seems to work well in Uniontown.

**Example 1. Mrs. Polly's Case: Knowledge Flow as a Source to Structure Power.**

Mrs. Polly's case is an example of power expressed in terms of knowledge. Also, it is an instance of power relationships defined from a micro-level perspective. Micro-level analysis, unless it is pursued historically over many events, does not serve the purpose of generalizability. Therefore, the example I present in the following paragraphs serves the purpose of stating that power relationships were present in the STP program. However, Mrs. Polly's case cannot be used to establish how power relationships were structured in the STP program. But, by accepting limited information to carry out a complex task and being a person expected to disseminate information about that task, she may become a potential social agent in structuring domination if, and only if, she actualizes that potential as I will explain further in this section (see also Clegg, 1989, pp. 66-85).

Mrs. Polly was a mathematics teacher I observed while doing my research in the STP program. We talked many times about what being a support teacher would mean to her and how she would go about starting to work with other teachers. She did not necessarily believe in giving full information just for the sake of information, but rather in giving just enough information to start up a process of joint action. She got that perspective from her own experience as one of the teachers who voted to be part of the STP program. She said:

If we had walked into that first meeting ((the one which launched the STP program)) and they would have said, 'Now. You're going to be in and observing "X" number of times and you're going to have to hold "X" number of meetings, and you're going to have to do'--we all would have said, 'No. We're not!' ((stressing)) Because that really would have

frightened us off immediately (pause). So they ((the researchers)) were wise in not giving us a total picture right away.

In my presentation of the research findings, I pointed out the disempowering potential of such an understanding. By accepting partial knowledge, she was legitimating by herself a rather perverse power relationship, that of reducing opportunities to learn.

By using Mrs. Polly's case to illustrate the issue of power I am in no way implying she is anything but an exceptional mathematics teacher. However, Mrs. Polly's case is potentially problematic from the perspective of power relationships. One can speculate that, although her interpretation of what the researchers said may not be what the researchers actually did say, such an episodic event could develop into a predisposition, after which she might reproduce the behavior, and legitimate it as a form of domination. Since it was a one-time occurrence one can draw no conclusion from Mrs. Polly's case beyond speculation. However, calling attention to Mrs. Polly's case serves the purpose of cautioning managers of programs similar to the STP program about the possibilities for unintended structuring of power relationships. Mills (1955) is a conceptual source for this analysis. He stresses the need for "an autonomous basis, independent of power, but powerfully related to it" (p. 613) in order to have democratically-ordered human affairs. He continues (p. 613) by stressing the need for a "free and knowledgeable public" to balance relationships in which the goal is to transform complex social affairs.

#### Example 2. Uniontown's Case: Exchange Relationships and Relative Distribution of Power

As part of the conceptual framework of this study, I dedicated a section to what I named "The AFT Program" (AFT). The main argument in that section is that AFT managed to incorporate an ideology involving the idea of "teachers as professionals" who should have a strong sense of ownership over decision making. In Uniontown, AFT's ideology found a fertile land to develop, due to a unique balance of power achieved in the

years prior to the STP program. Three, important, social actors were identified as responsible for that equilibrium: (1) an assistant superintendent who initiated cooperative work with teachers and organized labor; (2) a strong local AFT president who recently succeeded in negotiating teacher contracts (which allowed him to be a "real partner"); and 3) a group of teachers willing to support the assistant superintendent and the local AFT president's alliance so that teachers would benefit by maintaining control over their work and workplace. Uniontown is probably one of the few places where such an agreement has survived for as many as 10 years.

The STP program in Uniontown seems to fit the model described by Coleman (1977) where equilibrium of power can be achieved by engagement in an exchange venture. Coleman's argument states that, when actors are willing to gain control over issues about which they are strongly concerned equilibrium is possible when the actors give up control over those events where they have little or no interest. It follows that power is relatively evenly distributed (Coleman, pp. 183-184).

The STP program for instance was possible due to that relative distribution of power. The Major university had developed an outline of a plan to improve the quality of teaching and students' learning in mathematics and science. That plan was brought to the attention of the Assistant Superintendent who thought it fit the school system's plans to hold teachers more responsible for their practice. On the other side was the AFT local President who also saw participation in the plan as an opportunity to maintain teachers' control over the issue of quality in teaching. The Assistant Superintendent's important requirement (together with the MU researchers) was that the two departments (science and mathematics) should both participate. The AFT local President's important requirement was that teachers in each building should take a vote to decide whether to participate or not. However, nothing would have worked unless teachers, through their participation, were willing to assume increased responsibility as a price for keeping their



professional autonomy and control over the changes. It was their vote and willingness to participate that set in motion under the STP program in their workplaces.

Based upon Uniontown's case, one can make the argument that successful attempts at restructuring are those that are a combination of well-articulated ideas plus social agents in context, having reasonable participation in establishing the frameworks of power and the decision-making process.

#### 8. Using a Micro Computer for Organizing Qualitative Data

In terms of methodological conclusions, I have learned that a microcomputer can be effectively used as a tool for organizing qualitative research data. I have learned this in the process of designing and using the Monteiro Data Organizer (MDO). As the name suggests, MDO is an organizer. It has two organizers. The first one organizes sound information from audio or videotaped data. It has fields to organize: (1) generic information, (2) the transcription of sound data and (3) analytical comments about the sound data. The second, is a text organizer that organizes pieces of data (mainly expanded field notes) in a pre-analysis mode. Some other aspects of MDO are the following.

(1) With Mac Recorder™ hardware and its software (SoundEdit™) as well as the Microsoft™ word processor installed in the same hard disk, MDO will interconnect these software and make them available for handling data. For instance, MDO will open word processing files and allow the qualitative research analyst to move back and forth between them and the organizers in the data base.

(2) MDO will perform “copy and paste” operations within the database as well as between the database and word processing files.

(3) MDO will open any stored segment of sound (important bits of an interview for instance) allowing fine micro-analysis of pieces of sound information by using SoundEdit™.

(4) As data are handled within the database MDO allows their organization into categories of insights, assertions and evidence one can marshal to support the other two categories.

## Implications for Practice and Educational Research

### Implications for Practice

The present study makes two major sets of conceptual contributions for educational reform based upon the Weberian concept of ideal types. The first contribution includes the notions of believing and being skeptical. This study has demonstrated that teachers participating in the STP program oscillate between the two positions in the process of gradually reaching awareness of problems in their existing teaching experiences and alternative solutions. The second contribution includes the notions of acceptance and resistance as equally valid channels for teachers to assess their existing experiences. These contributions have implications for educational reform on three levels. First, they confirm a common-sense appreciation about the need for lengthened time frame for the identification, negotiation and implementation of meaningful reform. Second, these contributions signal to the managers of reform, the need to provide an open and supportive environment for teachers to change. As conceptualized here, change includes perceiving, living through and, hopefully, overcoming professional critical situations. Third, these contributions signal the need to recognize, appreciate and assimilate resistance. Reform efforts will especially benefit from distinguishing resistance from rejection and support the participation of those who resist or seem to resist. Within a structured relationship, supporting resistance can be an important way to sharpen ideas and to keep at higher level, the teachers' awareness of what there is to be changed.

These contributions also have implications for the community of teachers. The study has demonstrated the importance of ownership and self agency in the process by which teachers practices are restructured. Ultimately, it has indicated that teachers are able to participate in a restructuring process with researchers, provided that researchers

work with them in context, negotiating meanings and strategies for change. Work in context here suggests that researchers and teachers agree about a set of basic principles with the aim of keeping their relationship in a state of relative equilibrium. As I mentioned earlier in Chapter II, this kind of strategic context already existed in Uniontown. Uniontown's negotiated context is the key to the success of its STP program.

### Implications for Further Research

The interpretive framework used in this study drew, among other sources, from symbolic interactionism as proposed by Blumer (1969). Symbolic interactionism was used primarily as the basis for the identification and description of processes occurring during the interactions in which the teachers were involved. The many opportunities where teachers were observed together in the seminars illustrated this. As I identified and described these processes of negotiation, I was able to establish believing and being skeptical, as well as acceptance and resistance, as valid processes of participation. This is the major contribution of the investigation reported in this dissertation and certainly a significant first step toward understanding the participation of teachers in restructuring their practices.

However, as I argued in Chapter II, although an interactionist approach is useful for identification and description of processes of negotiation, it does not serve as well, in methodological terms, the purpose of studying power relationships that might surface in those processes. I have chosen the approach of identifying and describing processes of negotiation because this is a necessary step, should power relationships be further addressed. The literature indicates that overlooking the micro level in studying social phenomena in schools has been a basic problem among scholars studying power relationship issues (Aronowitz, 1981). The problem to which Aronowitz (1981) calls

attention can only be solved in a more extensive and methodologically-focused kind of study, for which the time span of my doctoral program was not enough.

Since this research laid the groundwork for further investigations of power relationships, raised as a result of teachers' participation, this should be a next step for further investigation.

The STP's training and technical assistance program included strategies derived from various traditions including constructivism, Piagetian psychology and student's spontaneous conceptions. Focusing on those strategies was not the scope of this study. However, teachers I studied were noticeably mindful of their student's misconceptions. Moreover, they acknowledged the awareness of that as an important input to their reaching a turning point toward adhering to the STP proposals. That occurrence indicates that another question for further research is the assessment of different strategies, in increasing teachers' awareness of their teaching problems.

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