Action research, a term first used in the 1940's by Kurt Lewin, implies the application of tools and methods of social science to immediate, practical problems, with the goals of contributing to theory and knowledge in the field of education and improving practice in the schools. Collaborative action research suggests that each group represented in the process shares in the planning, implementation, and analysis of the research; and that each contributes different expertise and a unique perspective to the process. Problems in conducting collaborative action research include initiating a collaborative project between school and university; addressing the concerns of all participants; and participating in the processes of collaboration which occur between the project's inception and the production of its results. The Action Research on Change in Schools project proposes to examine the relationships among teachers' developmental stages, action research in schools, and individual teacher change. (BW)
ACTION RESEARCH ON CHANGE IN SCHOOLS: A COLLABORATIVE PROJECT

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Introduction

During the past eight years, educational researchers and practitioners have turned to methods of collaborative action research as a way of meeting the investigative needs of all members of the educational community. Action research, a term first used in the 1940's by Kurt Lewin, implies the application of tools and methods of social science to immediate, practical problems, with the goals of contributing to theory and knowledge in the field of education and improving practice in the schools (Kemmis, 1980). Collaborative action research suggests that each group represented in the process shares in the planning, implementation, and analysis of the research, and that each contributes different expertise and a unique perspective to the process (Hord, 1981; Tikunoff, Ward, and Griffin, 1979). Today's collaborators often include school district personnel, university faculty or educational research and development center staff, and federal education agencies which provide financial support and guidance. In the first part of this paper, I will present an historical overview of the use of action research in education. I will then describe the basic assumptions and expectations which continue to characterize collaborative action research projects in education. Finally, I will present a brief description of the Action Research on Change in Schools Project as an example of a current action research research project.

Collaborative Action Research: History

In the early 1940's, Kurt Lewin used the term action research to describe research which united the experimental approach of social science with programs of social action which addressed major social issues (Kemmis, 1980). Lewin, a social psychologist, believed that social problems should serve as the impulse for social inquiry. From the research which followed, theory would emerge, and necessary social change would be achieved.
Lewin (1948) suggested that action research could take two forms: comparative research on the conditions and effects of various forms of social action, and research that led directly to social action. In either case, "Research that produces nothing but books will not suffice" (Lewin, 1948, p. 203). Kemmis (1980) summarized Lewin's goals for action research as follows:

Knowledge (theory) about social action could develop from observation of the effects of action in context: simultaneously, social needs and aspirations might be met because action programs were aimed at addressing them directly (as action not as principles which might later be applied in action).

(p. 15)

Kemmis (1980) suggests that Lewin's adoption of methods of action research stemmed in part from a growing awareness after World War II of significant social problems, including the rights of the individual, prejudice, authoritarianism, and industrialization. Lewin challenged the traditional role of social scientists, whom he felt needed to address these problems directly: "Socially, it does not suffice that university organizations produce scientific insights" (Lewin, 1948, p. 206). In order to understand and change social practice, social scientists had to include practitioners from the social world under investigation in all phases of their research. Practitioners had to understand that only through the use of the social sciences could they "hope to gain the power necessary to do a good job" (Lewin, 1948, p. 213). By working together, social scientists and practitioners could discover new theory and take action which addressed important social concerns.

Chein, Cook, and Harding (1948) summarized action research in its early stages, noting the unification of theory and practice through the interaction of practitioner and social scientist:

(Action research) is a field which developed to satisfy the needs of the socio-political individual who recognizes that, in science, he can find the most reliable guide to effective action, and the needs
of the scientist who wants his labors to be of maximal social utility as well as of theoretical significance.

(p. 44)

The action researcher studied problems which grew out of the community, rather than his or her own knowledge, and worked to make discoveries which could be applied in the community setting.

Practitioners had to be involved in action research not only to use the tools of social science in addressing their concerns, but also because their participation would make them more aware of the need for the action program chosen, and more personally invested in the process of change (Chein et al, 1948). Lewin advocated the incorporation of group work into the research process because of the power of group interaction in producing commitment and change in attitude and behavior (Kemmis, 1980; Lewin, 1952). Chein et al (1948) suggested that when practitioners were involved in all phases of the research, the degree of precision of the research findings was less important than the appropriate direction of the resulting action or change. Lewin (1948), however, insisted that action research involving practitioners was as scientifically valid as any other:

This by no means implies that the research needed is in any respect less scientific or 'lower' than what would be required for pure science in the field of social events. I am inclined to hold the opposite to be true.

(p. 203)

Stephen Corey (1952, 1953) was among the first to use action research in the field of education. He argued that the scientific method had never become an important part of educational practice, and that most educational researchers arrived at generalizations with no intention of doing anything with the results of their research. Through action research, however, changes in educational practice would be more likely to occur because teachers, supervisors, and
administrators would be involved in inquiry and the application of findings. Teachers themselves supported Corey's assumptions:

We are convinced that the disposition to study, as objectively as possible, the consequences of our own teaching is more likely to change and improve our practices than is reading about what someone else has discovered regarding the consequences of his teaching. The latter may be helpful. The former is almost certain to be.

(Corey, 1953, p. 70)

Corey had more limited claims than Lewin for the results of action research. He believed that the value of action research lay in the extent to which it led to improved practice, and that the generalizations which emerged from action research applied to the present situation rather than a broad, representative population. Corey may have recognized what other action researchers like Kemmis (1980) would later experience: the difficulty in producing both generalizable theory and improved practice through action research.

Corey, like Lewin, emphasized the need for researchers and teachers to work together on common concerns. Cooperation among teachers and between teachers and researchers increased the likelihood that participants would be committed to changing their behavior if the study indicated change was necessary. It provided a support group within which members could risk change and experimentation, and prevented those involved from being manipulated or coerced. Instead of being subjects of an experiment, teachers became the experimenters. Cooperation also provided a greater range and variety of perceptions and competencies from which the group could draw, and increased the probability that the study would be within the realm of possibility (Corey, 1953).

Corey felt that only minimal differences existed between scientific research and the common sense problem-solving methods used by practitioners,
although he argued that action research required more careful and systematic inquiry and interpretation than the common sense method. In the action research process he outlined, teachers defined a problem, hypothesized or predicted consequences of a certain action, designed and implemented a test, obtained evidence, and generalized from the results. Action research used in this way would help practitioners clearly define their problems, try out new practices, and gather evidence to test their worth. Teachers and administrators would then have a basis for future decisions and actions.

Between 1953 and 1957, interest in action research in education declined. Action research was attacked as methodologically poor and unscientific, and researchers withdrew to the universities to produce studies more acceptable to their colleagues. Practitioners, too, questioned whether or not action research lived up to its promises of helping them improve school practice and began to use other action-oriented methods of inquiry, such as evaluation (Kemmis, 1980).

In 1957, Hodgkinson wrote a critique of action research in education, in which he presented the basic arguments against its use. Practitioners, he said, lacked familiarity with basic techniques of research, and "research is no place for an amateur" (Hodgkinson, 1957, p. 142). Teachers did not have time to do research, and the time they did put into research detracted from their teaching. The use of substitutes for teachers engaged in action research also diminished the quality of students' education, and placed an extra financial burden on the school. Hodgkinson argued that no one had ever examined what happened to teachers after they put the results of their research into practice. He suggested that teachers might actually become more resistant to change because they could defend their present practice by saying that it had been researched and proven good, a defense based on the false assumption that the class or classes researched represented all future classes.
According to Hodgkinson, action research detracted from education in ways other than its negative effects on pedagogy. Within a school, action research required a group leader who was sensitive to individual and group needs. "If people of this sort are not available, group cooperation and consensus may be difficult or impossible to obtain. This could lead to failure concerning the action research, distrust of the teacher for colleagues, and a general lowering of school morale" (p. 143). Action research also emphasized the separate local school and threatened a consistent nationwide program of education.

Finally, Hodgkinson argued that action research was not really research, because it did not meet the criteria of valid scientific methodology. Action research did not go beyond the solution of practical problems, and often did not involve controlled experimentation because of teachers' lack of training in research. Action researchers did not look for broad generalizations in the field of education, nor did they relate their findings to a larger body of theory or knowledge. Hodgkinson's conclusions directly contradicted Lewin's belief that action research was valid scientific inquiry:

> Perhaps it would be better to define action research as quantified common sense rather than as a form of scientific, empirical research.  
> (Hodgkinson, 1957, p. 146)

Sanford (1970) points out that the shift away from action research and back toward a distinct split between science and practice was advocated in the 1960's by the social science establishment in addresses at annual meetings and public panels and in reports from commissions. This led to further splits in training, so that colleges and universities produced experts in model building, research design, and experimentation, or experts in planning, execution, and evaluation.

Federal funding agencies institutionalized the separation of scientific inquiry and social practice during this time period (Sanford, 1970). Between
1954 and 1972, the federal government's goal in educational research and development was to promote "improvement oriented change" (Guba and Clark, 1980, p. 9). Federal education agencies used a social science model, in which university scholars applied for federal funding, did their research, and presented the funding agency with a report of their findings. The federal government made no provisions for linking the research to development or dissemination processes so that it could be used to create change in schools. Only after the passage of the 1972 Education Amendments Act which established the National Institute of Education did the federal government begin to fund educational research and development centers which coordinated efforts for research, development, diffusion, and adoption (Guba and Clark, 1980).

Because of the critiques of action research as unscientific and unproductive and the emphasis in the social sciences and federal funding agencies on the separation of research and practice, action research in the 1960's and the early 1970's became inquiry done by practitioners with the help of a consultant (Ward and Tikunoff, 1982). During these years, action research was used to provide in-service teacher training and to improve practice rather than to produce generalizable results or theory.

Action research emphasizes the involvement of teachers in problems in their own classrooms and has as its primary goal the in-service training and development of the teacher rather than the acquisition of general knowledge in the field of education.

(Borg, 1965, p. 313)

The consultants or scientists involved in action research projects served as "democratic leaders" who would "stimulate and develop the talents of the group and train and supervise the participants" as they planned, conducted, and evaluated their research (Good, 1963, p. 234).

An example of this focus in action research is Schaefer's (1967) proposal that teachers use action research to make their school a center inquiry, rather
than a distribution center for information. Through their investigations, teachers could find better ways of teaching a diverse student population the skills and knowledge they needed in society while simultaneously contributing to their own intellectual health, growth, and professionalism. Schaefer did advocate school-university collaboration in action research, but the goal of inquiry remained the professional development of teachers and the production of situation specific, immediately useful knowledge.

In the mid-1970's, new and expanded views of action research in education began to appear, first in Britain as the result of continued interest in action research in other fields, and later in the United States (Kemmis, 1980; Ward and Tikunoff, 1982). The resurgence of action research as a cooperative venture which simultaneously contributed to knowledge in the field and improved practice reflected growing researcher dissatisfaction with traditional research methodology and design and teacher dissatisfaction with available in-service programs designed to help them improve their practice.

In the 1970's, researchers began to question the applicability of quantitative, experimental methodologies to educational settings and problems. Traditional research methods tended to restrict the researcher's focus to short run events, isolated variables, and a limited range of meanings, creating an oversimplified picture of a complex classroom reality (Hall, 1975; Mishler, 1979). The experimental method also required that conditions be held constant throughout the experiment and yielded data about the effectiveness of a project only after it had been completed. Both of these requirements conflicted with a teacher's need to modify and improve a "treatment" throughout the process, and therefore limited the usefulness of the research as a decision making tool for practitioners (Pine, 1981). Clifford (1973), Mishler (1975), Mosher (1974) and others saw action research as a method which would help researchers more successfully examine the contexts and context-dependent actions and meanings in
which learning occurred while helping teachers address their more immediate teaching concerns.

Another reason for the shift back to action research was researcher and teacher dissatisfaction with the linear model of research and development in which researchers validate new knowledge, develop it into a practical format, and disseminate it to practitioners for adoption (Krathwohl, 1974). This process created a gap between the researcher and user, and usually resulted in little or no implementation of research findings at the classroom level. Research infrequently reached practitioners, and when it did it was often reported in language which had no meaning for them. Teachers usually felt that much of the research available to them lacked practicality and was inconsistent with classroom reality (Fisher and Berliner, 1979; Huling, 1981).

The linear model of educational research and development also imposed implementation models and procedures on practitioners who had no ownership of or commitment to research in which they had had no part (Clifford, 1973; Hall, 1975; Huling, 1981). Elliott (1977) explains that teachers must become conscious participants in the development of theories which arise from their practical concerns in order to make fundamental changes in their practice. Only through participation in planning and implementing new practices and observing and analyzing their effects will teachers accept and use research findings. Again, in the 1970's, action research was seen as an alternative to the traditional, linear model of scientific research, because it included practitioner involvement in research which would be of immediate use in the school setting.

Practitioner involvement in action research also addressed growing concerns during the 1970's that traditional staff development programs did not meet teacher needs. Action research would provide teachers with the opportunity to gain knowledge and skill in research methods and applications, and to become
more aware of options and possibilities for change (Tikunoff, Ward, and Griffin, 1979). Teachers participating in action research would become more critical and reflective about their own practice. Elliott (1977) quotes one teacher involved in an action research program who said, "Indeed the value of this research to us may be in the analysis the teacher make of their methods and their whole approach to teaching" (p. 13). Teachers' heightened perceptions and understanding gives them greater control over their own behavior and makes them independent of others for professional growth (Elliott, 1977; Mosher, 1974; Pine, 1981). McLaughlin and Marsh (1978) saw staff development through action research as a model for professional growth and an ongoing process of problem solving and program building within a school.

The revival of collaborative action research as a method of educational research in the 1970's and 1980's is reflected in several projects currently underway or recently finished. All of these projects involve school teachers and university faculty or research and development center staff. Ward and Tikunoff (1982) group the reports of these studies into two categories: those which report research findings of collaborative action research projects, and those which focus on the process of conducting collaborative action research. Examples of reports of research findings include Clark and Florio's 1981 investigation of the process of writing instruction, and Filby et al's 1980 study of the effects of class size on academic performance. Reports on the process of conducting collaborative action research include Tikunoff, Ward, and Griffin's (1979) Interactive Research and Development on Teaching study, which found that interactive research and development can produce rigorous research and stimulate staff development under certain conditions; Little's (1981) study of staff development in a school district; and Hord's (1981) study which focused on the collaboration between a research and development center and a school district whose goal was to raise student performance on achievement tests.
Another recent study is Huling's (1981) Interactive Research and Development project in which she tried to determine the effects of participation in a collaborative action research project on teachers' concern for and use of research findings and practices. She found that teachers who participated in the project demonstrated significantly greater changes in concern about the use of research findings in their practice, higher levels of research and development skills, and more positive attitudes about using research findings in their teaching than teachers who did not participate.

Action research, initiated in the 1930's by Kurt Lewin, and adapted by educators in the late 1940's, has re-emerged as a viable method for conducting educational research which contributes to knowledge in the field and improved practice. In recent studies, the method itself has become a topic for inquiry with the assumption that an understanding of the elements underlying successful collaborative action research will lead to more effective research designs and processes in education.

Expectations of Collaborative Action Research

Ward and Tikunoff (1982) point out that the underlying premises and requirements of current action research projects closely resemble those applied in action research conducted thirty and forty years ago. The key to action research past and present appears to be its collaborative nature, through which the needs of both researchers and teachers are met.

Action research aims to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually acceptable ethical framework.

(Rapoport, 1970, p. 499)

Despite the fact that the specific forms and definitions of collaboration differ from project to project, each "grounded by the participants and institutions
they represent" (Ward and Tikunoff, 1982), certain common expectations about the process of collaborative action research emerge.

These expectations can be grouped into three categories:

1) participation in the research process: teacher and researcher roles;
2) staff (practitioner) development: expectations and outcomes; and
3) conditions or requirements necessary for successful collaborative action research.

Although the categories contain some overlapping elements, I will present each as separate, and then discuss some of the problems involved in carrying out a collaborative action research project.

1. Participation in the research process: teacher and researcher roles

Hord (1981) distinguishes between cooperation and collaboration, suggesting that in the former, participants reach some agreements but proceed individually toward self-defined goals, while in the latter, participants work together on all phases of a project which provides mutual benefits. Little (1981), Oja and Pine (1981), and Tikunoff, Ward, and Griffin (1979) also emphasize that in collaboration, teachers and researchers set common goals and mutually plan the research design, collect and analyze data, and report results. They claim that the involvement of both groups in every stage of research, development, and application allows for the connection of theory and practice throughout a project, and provides both teachers and researchers with the "opportunity for reflection and for unexpected insight into situational realities" (Little, 1981, p. 4).

Most collaborative action research focuses on practical problems defined by the participating practitioners (Elliott, 1977; Rapoport, 1970; Wallat, Green, Conlin, and Haramis, 1981). The researcher, or social scientist, may provide related theoretical problems, or plan additional research in conjunction
with the teachers' project, so that the research addresses and contributes to both practical and theoretical issues and concerns. Tikunoff, Ward, and Griffin (1979) describe this sharing of responsibility as follows:

... collaboration is viewed as teachers, researchers and trainer developers working with parity and assuming equal responsibility to identify, inquire into, and resolve the problems and concerns of classroom teachers. Such collaboration recognizes and utilizes the unique insights and skills provided by each participant while, at the same time, demanding that no set of responsibilities is assigned a superior status.

(p. 10)

Wallat et al (1981) point out that "parity and equal responsibility" in collaboration "do not mean that each member has an equal role in decision making or input during all phases of the study. Role shifts occur depending on the needs of the situation. Continuity is provided by the researchers through the communication and collaboration network they establish with those involved in the study" (p. 94). In collaborative action research, researchers and practitioners contribute from the knowledge and skills which they have to a jointly defined research project and process.

In assuming these roles, both researchers and teachers must become conscious of possible differences in perceptions and assumptions which result from their different positions in the field. To avoid conflicts, teachers and researchers must maintain open communication throughout all stages of the process (Wallat et al, 1981). For teachers, this may require a willingness to discuss their own problems and limitations, to share in the activities and ideas of others, and to be open to learning new skills and behaviors of use in the research process (McLaughlin and Marsh, 1978; Pine, 1981).

Researchers must convince university peers and funding agencies that working in schools is viable research (Fisher and Berliner, 1979; Rapoport, 1970), and must themselves accept that "getting their hands dirty" in classroom
complexities is an appropriate and rewarding research process (Pine; 1981, p. 13). In order to make collaboration successful, researchers must learn to work with teachers as peers and be sure that their work supports rather than interferes with teachers' ongoing school responsibilities. Bown (1977) suggests that university researchers should understand that

... collaboration is an endless series of daily acts which respect equal partnership in joint undertakings rather than a flag to be saluted annually with glib rhetoric.

(p. 7)

2. Staff development: expectations and outcomes

Kurt Lewin advocated action research into social problems in part because he believed that social change depended on the commitment and understanding of those involved in the change process (Lewin, 1948). Action research in education has often been seen as a way of involving teachers in changes which improve teaching practice. The assumption, based on Lewin's work, is that if teachers work together on a common problem clarifying and negotiating ideas and concerns, they will be more likely to change their attitudes and behaviors if research indicates such change is necessary (Hall, 1975; Hodgkinson, 1957). Elliott (1977) and Little (1981) both suggest that collaboration provides teachers with the time and support necessary to make fundamental changes in their practice which endure beyond the research process.

Another expected outcome of action research in education, beyond change in practice, is teachers' professional growth. Collaboration provides teachers with many different perspectives of problems and solutions from colleagues and university faculty. Through action research, teachers also gain new knowledge which helps them solve immediate problems, broaden their general knowledge base as professionals, and learn research skills which can be applied to future interests and concerns (Mosher, 1974). As a result, teachers become more...
flexible in their thinking, more receptive to new ideas, and more able to solve problems as they arise (Pine, 1981).

Hall (1975) suggests that action research also benefits the community in which it occurs, in this case the school or district, as well as the individual teachers who participate. Hall and others claim that through the process of collaboration, teachers tend to arrive at research questions which address school or district concerns rather than the problems of an individual teacher in the group. Their research results can then be used in the school or system as well as in participating teachers' classrooms (Borg, 1965). Teachers who have participated in collaborative action research projects also say that the process created new patterns of collegiality, communication, and sharing in their schools which carried over into and improved other activities and projects (Little, 1981). Collaborative action research seems to address staff development concerns for school and district growth as well as for individual teacher change.

3. Conditions necessary for collaborative action research

Successful collaborative action research appears to depend on teacher characteristics, school organization and climate, available resources, and research project structure. Teachers who have a sense of their own efficacy and who are willing to discuss their concerns and experiment with new ideas will be most likely to contribute to and benefit from action research efforts (Hall and Hord, 1977; McLaughlin and Marsh, 1978). Rainey (1973) also suggests that teachers who have some knowledge of research techniques and who can cooperate with other faculty and students will be successful participants in action research.

Elliott's (1977) study indicates that the school context affects teachers' willingness and ability to participate in the process of action research. Corey
(1952) and Pine (1981) suggest that teachers need an atmosphere in which they are free to identify problems for inquiry, experiment with solutions, and express and share ideas with colleagues and administrators. Some of this freedom comes from an administration which recognizes collegial rather than hierarchical authority, and allows teachers to make decisions which influence their practice and inquiry (Schaefer, 1967). Ideally, the administration not only provides teachers with the freedom to experiment, but also gives them the recognition needed to legitimize their project and ensure its continuation in the future (McLaughlin and Marsh, 1978).

Administrative support may take the form of resources such as time and the technical and material assistance necessary to the research project's success. Many who advocate collaborative action research claim that time restraints often limit the research. In 1967, Schaefer said that teachers needed reduced teaching loads in order to step back from and reflect on teaching and learning. More recently, as economic and demographic pressures decrease the amount of in-school free time available to teachers, those writing about action research suggest only that "participants must be willing to devote the necessary time to joint endeavors" (Hord, 1981, p. 9). Although the question of how to provide it remains unanswered, agreement exists that time is a valuable resource and a necessary condition for successful collaborative action research.

Action research also requires technical assistance and material support, which may include xeroxing, locating literature, and designing data collection tools. Teachers may need training in research techniques or new classroom practices and the input of observers or consultants in their classrooms as they conduct their inquiry. At times these resources can be provided by the university participants in the project; in other cases the school or system may agree to support the project in these ways.
The final set of requirements for successful collaborative action research concerns the organization of the project itself, and includes jointly-defined goals, frequent communication among participants, and strong leadership. Hord (1981), McLaughlin and Marsh (1978), and Wallat et al (1981) all stress the importance of negotiating and articulating clear and specific goals from the outset of the project. Clear goals provide all participants with a sense of the project's value and what they will gain from it and establish a shared frame of reference from which hypotheses and future plans can be generated. Commitment, shared control, and participants' roles and functions can all develop from mutually defined goals.

Shared goals imply patterns of communication which facilitate interaction. Communication between university researchers and teachers can often break down due to differences in language, perceptions, and expectations which result from their different positions in the field (Holley, 1977).

Given this natural breach of language, and more importantly the thinking it represents, a collaborative research effort must take special pains to ensure that the different members of the collaborative team use the same language and understand each others' concerns.

(Mergendoller, 1981, p. 6)

Frequent interaction among participants in the research project, through team meetings and more informal discussions, is a requirement of action research which helps to overcome communication difficulties and contributes to mutual understanding of goals, techniques, and perspectives (Corey, 1953; Hord, 1981).

Hord (1981) also calls for strong leadership in a collaborative action research project, by someone who can set a positive example as a collaborator. This often means that the leader must disperse his or her power, sharing control and allowing others to delegate and assume responsibility. Hord's comments and Bown's (1977) suggestion that researchers must be sensitive to the demands of the collaborative process on teachers, are among the few references to group
leadership or to the characteristics of university researchers which contribute to successful collaborative action research. This lack of emphasis may reflect the fact that those reporting on action research tend to be university researchers; teachers themselves infrequently report on the research process or findings, although several of the reports (Hord, 1981; Little, 1981; Tikunoff, Ward, and Griffin, 1979) take teacher responses into consideration in discussing characteristics and requirements of collaborative action research.

4. Problems in conducting collaborative action research

Many of the problems involved in carrying out collaborative action research stem from the same element which contributes to its value: its collaborative nature. The first problem is initiating a collaborative project between school and university. Ferver (1980) points out that universities tend to be more interested than schools in participating in collaborative research. Practitioners have found internal resources for solving their problems and remain skeptical of university people's interest in or ability to solve the problems schools presently face. Ferver also notes what he calls "problems of match" between schools and universities which make mutual goal setting and research design difficult. These problems of match include discrepancies between what university faculty are funded, trained, and rewarded to do and what schools want them to do, and between the theoretical, information-giving orientation of the university faculty and the problem solving and staff development needs of the school.

A second problem arises from the idea that action research should address the concerns of all participants. University researchers approach a collaborative project with the expectation that it will lead to generalizable results which can be shared with the educational research community. Teachers expect to find ways of improving their teaching or their school, and they
emphasize the importance of using the project as a way of sharing ideas with colleagues and reflecting on their own practice (Florio, 1983). Differences between researcher and teacher concerns may lead to different perceptions of acceptable group processes and research outcomes, and may create conflict or frustration for both teachers and researchers.

Collaborative action research which focuses on the concerns of practitioners may not always be able to produce both generalizable knowledge in the field of education and improved practice. Kemmis (1980) explains that traditional educational theory has not emerged from his study:

Preliminary analysis suggests that the theoretical prospects for action research are only moderate, if 'theoretical' payoff is measured in terms of the literature of educational researchers. ... If theoretical payoff is defined in terms of the development of critical communities of practitioners, then the results are far more encouraging. (p. 13)

Others have claimed that teacher development is not always an outcome of collaborative action research. Like Hodgkinson (1957), Broadfoot (1979) argues that teachers are unlikely to make any major changes in their practice over time even as participants in a collaborative action research project, because of their investment in the educational system as it stands. It may also be the case that some of the research carried out collaboratively has no more use or meaning for teachers than most traditionally conducted research. Oja (1980) suggests that teacher growth through involvement in action research may depend on each individual's stage of psychological development. Some project participants may be more willing and able than others to experiment and change.

The third problem arises in the processes of collaboration which occur between the project's inception and the production of its results. Hord (1981) explains that each teacher or researcher who participates in a collaborative project has "an individual interpretation of the meaning of the process, and the
extent of his/her contribution to it will rest on that individual presumption" (p. 4). This suggests that even if university researchers and teachers are using the same language, they may be attributing different meanings to the same words. Collaboration entails trying to discover and account for the diverse meanings, interests, and requirements of the individuals involved as the group identifies a researchable problem and designs, implements, and analyzes its research (Borg, 1965; Little, 1981).

Hodgkinson (1957), Hord (1981), and Mosher (1974) call for good leadership in collaborative action research to be responsive to individual and group needs and concerns, but they do not explain leadership techniques or characteristics which would help or hinder individual and group growth. Pine (1981) explains that collaboration requires a conscious effort, although he, too, leaves out specific means for achieving positive interaction:

We gratuitously assume collaboration will happen if we bring people together as members of a task force or committee. It is essential to have people focus in right away on what collaboration demands ... Collaboration is a dialectical and dialogical process with a lot of give and take and its use in action research requires that university faculty and classroom teachers build trust, communicate, and solve problems from the beginning. Action researchers need to prepare themselves for dealing with the conflicts which naturally emanate from the interface of the different norms, behavioral regularities, and values of the university and school. Collaboration is not achieved naturally. It is a sophisticated process which must be taught and learned deliberately.

(p. 27-28)

ACTION RESEARCH ON CHANGE IN SCHOOLS

The Action Research on Change in Schools project consists of two research teams which comprise a National Institute of Education sponsored project entitled A Two Year Study of Teacher Stage Development in Relation to Collaborative Action Research in Schools (Oja and Pine, 1981). This project proposes to examine the relationships among teachers' developmental stages,
action research in schools, and individual teacher change. By examining the process in which teachers engage while carrying out an action research project in their school, the principal investigators, Sharon N. Oja, University of New Hampshire, and Gerald J. Pine, Oakland University, planned to investigate the following questions:

1) To what extent do teachers' stages of development (ego, moral and conceptual) influence and affect the changes they undertake?

2) How do the contextual variables of the school, i.e., role definition, rewards, expectations, norms, social climate, structure, etc. affect individual teacher change?

3) What is the role and impact of action research on the promotion of individual change? (Oja and Pine, 1981, p. 1)

Oja and Pine incorporated many of the expectations and assumptions about collaborative action research into their project design. For example, in this project, it was expected that:

- University and school people would work together for two years on a research project which addressed problems defined by the teacher participants.

- Teachers would be involved in every step of the research process, from problem definition to presentation of results.

- Weekly meetings would allow for frequent and open communication among team members.

- Teachers would receive staff development credit for their time spent on the project.

- Each team member would contribute his or her unique insights and skills to the research project and process.

- Teachers would learn new research skills and experience personal and professional growth as a result of participation in the project.

- University researchers would investigate theories of teacher change and growth in collaborative action research, fulfilling their professional needs.
In their proposal, the principal investigators explain that their study is, itself, action research, in that it will improve educational practice and contribute to theories of teacher change and growth. The investigators assume that their study will provide insight into the design and implementation of staff development problems that encourage teacher growth and improved instruction. They suggest that their approach is one of "ongoing tentativeness" (p. 39) which allows for continuous revision of questions, hypotheses, and generalizations as data is collected and analysed. "Tentative generalizations will lead to probes about individual change which will lead to new data which are then accumulated with existing data so that tentative generalizations may be revised, which will then lead to the revisions of the problem(s) and probe(s) which lead to new data, and so forth" (p. 41).

The principal investigators chose to implement their study in two junior high schools, one in New Hampshire, and one in Michigan. The schools were matched for size, grade levels, racial distributions, number of students qualifying for federal aid, and history of school change. In September, 1981, the principal investigators sent a letter to all teachers in each school introducing and briefly describing the project. Each then held an introductory meeting for interested teachers at their respective sites. Eight to ten teachers at each site indicated an interest in the project. All were interviewed and asked to complete a number of questionnaires, including the Loevinger Sentence Completion Test (1970), Rest's Defining Moral Issues (1974), and Hunt's Assessment of Conceptual Level (1973). The principal investigators used questionnaire responses to choose five teacher participants from each site who represented a range of subject areas, interests and stages of development.

In October, 1981, each group of teachers began meeting with one of the principal investigators and a research assistant, whose role was to document team meetings and provide research assistance to the team. Each team met weekly
from October, 1981 until May, 1982, and again from September, 1982 through May, 1983. The team's goal was to conduct a research project in an area chosen by the teachers and to report its results to NIE and wherever else it felt such a presentation would be appropriate. The New Hampshire and Michigan teams worked independently of one another, with the exception of a joint weekend meeting in May, 1982. At this meeting, team members from each site shared and compared progress and problems and their tentative research proposals which would be sent to NIE in June.

Despite the fact that the New Hampshire and Michigan teams worked independently of one another, both teams focused their research on an aspect of school scheduling. During early discussions of their respective school contexts, both teams noted that scheduling affected the teaching and learning conditions of their school. The New Hampshire team ultimately focused on the effects of organizational changes in the school on teacher morale. The Michigan team surveyed teachers, parents, and students about scheduling practices in the school in order to make recommendations to the school principal about future scheduling modifications. Teachers involved in the projects in both schools reported that their work as members of a collaborative action research team had provided them with valuable experience and an opportunity for personal and professional growth.

SUMMARY

This paper has presented a brief history of collaborative action research, a summary of its primary characteristics, and a description of one action research project currently being completed. Further investigation is underway on the Action Research on Change in Schools project, including a study of the research process and group process experienced by the New Hampshire team (Smulyan, 1983), an examination of the effects of the school context on the two
teams (Pine, 1983), and an analysis of the relationships between teacher stage of development and participation in the project (Oja, 1983). All of these studies will be available from the National Institute of Education, or through the project office at the University of New Hampshire.
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