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Four middle school physical education teachers' experiences during a collaborative action research staff development project

Butt, Karen L., Ed.D.

The University of North Carolina at Greensboro, 1989

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FOUR MIDDLE SCHOOL PHYSICAL EDUCATION TEACHERS' EXPERIENCES DURING A COLLABORATIVE ACTION RESEARCH STAFF DEVELOPMENT PROJECT

by

Karen L. Butt

A Dissertation Submitted to the Faculty of the Graduate School at The University of North Carolina at Greensboro in Partial Fulfillment of the Requirements for the Degree Doctor of Education

Greensboro
1989

Approved by

Dissertation Advisor

APPROVAL PAGE

This dissertation had been approved by the following committee of the Faculty of the Graduate School at the University of North Carolina at Greensboro.

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10/6/89
Date of Acceptance by Committee

9/21/89
Date of Final Oral Examination

BUTT, KAREN L., Ed.D. Four Middle School Physical Education Teachers' Experiences During a Collaborative Action Research Staff Development Project. (1989) Directed by Dr. Thomas J. Martinek. 191 pp.

The purpose of this study was to describe four middle school physical education teachers' self-reported experiences during collaborative action research staff development projects. Specifically, the research explored 1) the teachers' self-reported perceptions about various aspects of their teaching before, during, and after their involvement with collaborative action research projects, 2) the teachers' self-reported expressions of instructional autonomy and any modifications to that during their participation in collaborative action research projects, 3) the teachers' self-reported opinions of collaborative action research as a vehicle for improving instructional practice, and 4) the results of the teachers' collaborative action research projects.

Four teachers volunteered to participate. Two were female, one black and one white, and two were male, one black and one white. The teaching experiences ranged from a second-year teacher to a teacher with 19 years' teaching experience.

Three data collection methods-- interviews, transcribed tapes of workshops and work sessions, and teacher logs-- were used. All interviews and workshop and work sessions were transcribed in order to provide an accurate record of all verbal transactions. Participants were given the opportunity to correct and clarify any portion of the transcriptions.

In analyzing the data, the researcher sought to discover themes, patterns, and differences related to various aspects of the teachers' teaching, instructional autonomy, and the teachers' opinions of action research as a vehicle for improving instructional practice among the four case reports. The themes that emerged related to the teachers' teaching included management of class time, individualizing instruction, student learning, teacher self-growth, relationship with students, individualized development, students enjoying physical education, fitness, and teacher communication skills. The themes that emerged related to instructional autonomy included: the teachers' preferred learning style, self-growth, planning and reflection.

The following conclusions were drawn: 1) the teachers all experienced an increase in understanding of their instructional practices; 2) all teachers reported being more conscious of their decision-making practices; 3) action research was reported by all teachers as a useful vehicle for improving their instruction; 4) an increase in instructional autonomy was experienced in varying degrees by all four teachers during their participation in collaborative action research projects; 5) three teachers were able to change their teaching to varying degrees; and 6) all teachers developed a sense of becoming an agent of their own change.

ACKNOWLEDGEMENTS

I would like to express my gratitude to the faculty at the University of North Carolina in Greensboro. They have helped me to appreciate the breadth of the fields of physical education and education. I appreciate especially the contributions of Dr. Thomas Martinek, Dr. Kate Barrett, Dr. Sarah Robinson, and Dr. David Strahan, the members of my dissertation committee.

I have worked most closely with Dr. Martinek and am aware of and grateful for the enormous amount of time that he has spent in seeing this project through to fruition. Dr. Martinek's invitation to join him in his work with the Greensboro city schools has been an invaluable learning experience. His willingness to introduce me to and include me in experiences in the field of physical education beyond the University has been a real plus.

Dr. Barrett's special contribution has been to help me organize my work and to improve my writing skills. She has been most generous in giving of her time in this way.

I am thankful to Dr. Robinson for her acuity and problem solving ability at points when I felt stuck. Her advice, critiques, fairness, and patience were sustaining during difficult times.

Dr. Strahan's belief in me and respect for me as a potential scholar created an atmosphere that encouraged real growth in thinking. His humanity and caring were greatly appreciated throughout my work at the University of North Carolina in Greensboro.

Deserving of special mention for their assistance are Gail Braverman, Diana Schaub-George, Dr. Mickie McCormick, and Ann Sebren. My friends and fellow students are much appreciated for sharing their time and for their emotional support.

A special thank you needs to be extended to the staff of the Greensboro Public Schools, the administrators, and especially the four physical education teachers for their interest, time, and participation in this research. I hope that the teachers' participation has been of value to them as well as to me.

Finally, I'd like to express my gratitude to some family members. Thank you to my mother, Dr. Judith Butt, for her continuous encouragement, being a good listener, reading many drafts, and knowing when and how to push to get me back on track. To my father, Clifford Butje, I owe a debt of gratitude for his continuous interest and support. Not to be omitted are my aunt and uncle, Drs. Carol and Daniel Hittleman, also researchers in the field of education, who were often sounding boards and givers of good advise. Having a family who are so available has been a special gift.

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CHAPTER I

INTRODUCTION

Critics frequently bemoan a decline in the quality of American education. They blame falling test scores and the increasing number of illiterate high school graduates on poor teaching. During the 1970's, this concern stimulated a number of privately and federally funded research projects. The studies emerging from several of these projects focus on the relationship between teaching practices and student learning. Results of these investigations indicate that teachers who use practices such as reviewing previous lessons, stating clear objectives for the lesson, and providing learning environments which foster high student engagement, tend to have students who, on the average, learn more. Thus, it has been suggested that if teachers were to become more effective, student learning will increase.

As a result of these research findings, many school districts and teacher education institutions have renewed their commitment to the improvement of staff development programs. A review of staff development literature reveals that numerous models were generated from these research efforts. Although these models tend to vary in terms of content, context, and format, all share the long-term goal of changing or

improving instruction in order to increase student learning (Guskey, 1985). Few educators today would argue against the importance of using staff development programs for improving classroom practice.

One common practice used in many staff development programs is for a researcher to provide some type of in-service training or workshop based on current research findings (Tikunoff & Mergendoller, 1983). The researcher then studies and reports the effects of the intervention. Unfortunately, these linear (research, development, dissemination, adoption) types of staff development research efforts have had little impact on the improvement of instruction (Huling, 1982; Jacullo-Noto, 1984; Tikunoff & Mergendoller, 1983). Several reasons might be suggested for this apparent lack of impact. One reason may be the absence of teacher participation in the research process; teachers frequently feel no sense of ownership in the research process (Arends, Hersh & Turner, 1978; Hite & Howey, 1977; Howey, K. R., 1980; Tikunoff & Mergendoller, 1983). Cameron-Jones (1983) suggested that ownership in the development of the research questions may be a prime prerequisite for getting teachers to 1) actively participate in the research process and 2) use the results of the research for improvement of instruction.

Another reason for the apparent lack of impact on improvement of instruction associated with linear staff development models may be that many teachers perceive researchers as ivory-towered academicians who are unaware of the realities of the classroom. Consequently, researchers' findings

are not deemed credible or applicable to the classroom (Griffin, 1983; Huling, 1982). Furthermore, not all teachers seem interested in conducting research on their own practices, and many may not realize the benefits that can be gained from using research results in teaching (Huling, 1982).

In order to address these concerns, Ross (1983) suggested that teachers should have some type of systematic instruction to help them develop the appropriate research skills and confidence needed to engage in research. Almond (1984) elaborated on this view when he suggested that staff development programs are needed in which teachers can conduct classroom research together, offer mutual support, communicate with one another, and share their findings.

Tikunoff and Mergendoller (1983) suggested that research skills are an important and powerful part of a teacher's professional repertoire: "When used to analyze and adjust instruction, they [research skills] provide the basis for developing a deeper understanding of the classroom environment and the process of instruction" (p. 211). Tikunoff and Mergendoller (1983) further asserted that this "deeper understanding" should be the major goal of staff development. While studying an alternative to the linear staff development model, Santa, Isaacson, and Manning (1987) found that when teachers were involved in the study of a new method or problem (research) in their own classrooms, they became more open to alternatives.

One of the more promising approaches to staff development that encourages teachers to study their own practices is action research (Cameron-Jones, 1983; Edwards and Barnes, 1985; Jacullo-Noto, 1984; Oja, 1984; Ross, 1984; Simmons, 1984). Action research in education is defined by Corey (1949) as the process by which classroom teachers study their problems in order to evaluate their decisions and actions. Action research is carried out by teachers whose main purposes are to understand and to improve their professional practices. It is an ongoing process during which teachers participate in the research experience. Action research is a cyclical process and the results are integrated into the context of the teachers' own settings (Corey, 1953).

One type of action research is collaborative action research. Ward and Tikunoff (1975), Oja (1984), and Pine (1979) have helped define collaborative action research as a type of research in which members of a research team share in the planning, implementation, and analysis when inquiring into, investigating, and solving classroom concerns of teachers. The research team generally includes one or more teachers and an outside facilitator (researcher). The collaborative action research model, therefore, focuses on a process whereby teachers and researchers work together to formulate and conduct research based on teachers' concerns relative to the context of their instructional setting (Martinek & Butt, 1988a).

The theoretical underpinning for collaborative action research draws heavily from the work of Kurt Lewin, a social psychologist in the 1930's and 1940's, who worked with minorities on "democratically" solving their own problems. Lewin stressed giving groups a strong voice, from the very beginning, when studying and resolving their problems. He believed that groups innately had the ability to be able to acquire autonomy and use that to improve their situations.

A common theme found in most collaborative action research models is that all participants bring their own expertise to the situation (Oja & Pine, 1981). The teachers bring their classroom knowledge (content knowledge and instructional strategies) and the outside facilitators bring their research know-how. Thus, collaborative action research reflects a "work-with" rather than "work-on" philosophy (Ward & Tikunoff, 1975). It has the potential, therefore, to dispel the commonly held beliefs that researchers are unaware of the realities of the classroom and concerns of classroom teachers, and that teachers do not have the know-how to conduct research.

There are several aspects of collaborative action research that help to ensure positive outcomes from a staff development viewpoint. First, collaborative action research gives teachers the opportunity to choose the "what" and "how" of the research project. Because collaborative action research takes place in the teachers' classroom, it focuses on job-related issues which the teachers consider real and important. Second, the collaborative

action research model provides an opportunity for participants to practice, under guidance, in real work settings as part of their training. Guided practice is especially important during the implementation stage because teachers, as learners, are encouraged to work in small groups and to learn from one another. This can reduce the threat of external judgments because peer participants provide the teacher with feedback.

A third aspect of collaborative action research that helps ensure positive outcomes from a staff development viewpoint is that collaborative action research provides teachers with a staff development opportunity that is spread out over a period of time. Collaborative action research projects vary in length; however, they are ongoing processes enabling teachers to adapt innovations or changes to their own situations.

Finally, collaborative action research provides choices and alternatives that accommodate participant differences. Each collaborative project is designed for an individual teacher. The teacher adapts the project to her or his own learning and teaching style, level of skill, time frame, and any other individual differences.

According to Griffin, Lieberman, and Jacullo-Noto (1983), educators and researchers generally agree that the major outcomes of a successful model for staff development should be the promotion of positive changes in the following: 1) teachers' instructional practices, 2) students' learning and behavior outcomes, and 3) teachers' beliefs and attitudes. Bogdan and Biklen

(1982) suggested that change in education is serious and complicated because "the goal is to improve life for people" (p. 193). They suggested that people who try to change education must first take into consideration what participants think because it is they that must live and work with the changes. Bogdan and Biklen (1982) further suggested that it is the participants' perceptions of the situation and their concerns with the change process that are crucial if the change is going to work and last. The origins of research on perceptions of groups dates back to Lewin's work with minorities in the 1930's and 1940's.

Guskey (1985) hypothesized that most staff development programs are unsuccessful because they fail to take into consideration "what motivates teachers to engage in staff development and the process by which change in teachers typically takes place" (p. 6). Therefore, the major focus of this study will be to describe the four physical education teachers' self-reported experiences during collaborative action research staff development projects. In doing so it is important to specify the boundaries of such research. This researcher sought to balance generalizability with the idiographic description. While the results may be limited in terms of generalizability the richness will provide clues to the voices of the participants.

Statement of the Research Problem

This study describes the self-reported experiences of selected middle school physical education teachers during their involvement in collaborative action research staff development projects. Specifically, this research will

1) describe the self-reported perceptions of four middle school physical education teachers about various aspects of their teaching before, during and after their involvement with a collaborative action research staff development project,

2) describe the four middle school physical education teachers' self-reported expressions of instructional autonomy and any modifications to that during participation in collaborative action research,

3) describe the four middle school physical education teachers' opinions of collaborative action research as a vehicle for improving instructional practice, and

4) describe the four middle school physical education teachers' collaborative action research projects.

Definitions of Terms

1) Action research is defined as the process whereby classroom teachers study their concerns in order to evaluate their decisions and actions (Corey, 1949).

2) Collaborative action research is defined as a type of action research in which memebers of a research team (teacher and facilitator) share in the planning, implementation, and analysis when inquiring into and investigating classroom concerns of teachers (Ward & Tikunoff, 1975; Oja & Pine, 1981).

3) Instructional autonomy is defined as a teacher's self-direction in making decisions in various aspects of her or his teaching, learning, and planning.

4) Staff development is defined as a systematic attempt to promote change in teachers (Griffin, 1982). The terms "in-service" and "staff development" will be used interchangeably throughout this paper.

Assumptions

The following assumptions are accepted as part of this study:

1) Formal interviews, transcribed workshops and work sessions, and teacher logs will provide a sufficient source of information about teachers' perceptions of their experiences during collaborative action research projects.

2) Teachers have the desire and ability to be self-reflective and critical.

3) Teachers are motivated to learn and change by identifying problems and concerns.

4) Teachers are open and honest in their interviews and logs.

Limitations

The following are limitations of this study:

1) Selected middle school physical education teachers' self-reported experiences during collaborative action research staff development projects are examined. The results of this study are, therefore, unique to this school system and the participants in the staff development program and will have limited general application.

2) The population of teachers is limited to those voluntary participants in the collaborative project between the middle schools and the physical education department of the university. Volunteers may not represent techers in general.

3) This study focussed on the teachers' self-reported experiences and did not include the facilitators or researchers perceptions of the collaborative action research process.

Significance of the Study

Researchers in education and specifically physical education have stated the need for research in the area of effective staff development. While collaborative action research is increasingly recognized in education as an effective model for staff development, there is a dearth of studies in physical education that focus on collaborative action research as a staff development model. This research will contribute to the staff development knowledge base in physical education, because it is a deliberate and systematic report of physical education teachers' experiences during collaborative action research staff development project. Because this study just focused on the teachers' self-reported experiences and did not include the interpretations of an outside researchers, a more thorough description of the teachers' thought processes and self-reported experiences were facilitated. It is also hoped that the findings from this study will contribute to what is known about teachers' opinions of the effective use of staff development models in physical

education. The insights gained during this study may help university teacher educators to plan and implement more effective and credible staff development programs. This study will contribute insights for future collaborators in physical education research and staff development.

CHAPTER II

REVIEW OF THE LITERATURE

The reviewed literature is presented in three major sections. The first section of this chapter presents a synthesis of effective staff development issues. The second section discusses action research. It includes a brief history of action research and presents several definitions and models of action research as seen in current educational literature. The third section of the reviewed literature focuses on the findings of several major action research staff development projects and their implications for this study.

Staff Development

There are numerous models of staff development in the educational literature. Wood &Thompson (1980) and others suggested that most of the models are ineffective and need to be redesigned to insure their success. Educational researchers including Berman and McLaughlin (1974, 1975, 1976) Griffin (1982), Guskey (1985, 1986), Joyce and Showers (1980, 1981, 1982), Lawrence (1974), Mazzarella (1980), Sparks (1983a, 1983b), Stallings (1980, 1982), and Wood and Thomas (1980) studied, synthesized, and developed hypotheses about what constitutes effective staff development. The staff development issues which have been cited frequently in the literature and which research has shown to be critical to effective staff development include more participant control over the "what" and "how" of learning,

opportunity for participants to practice under guidance, ongoing programs that provide for participant adoption, and offering alternatives to accommodate individual teachers.

Participant Control

During the past decade the importance of considering the learning needs of adults when planning staff development has received increased attention from several researchers (Griffin, 1982). Wood & Thompson (1980) in their article, "Guidelines for better staff development", reviewed and discussed several adult learning needs that should be considered when planning staff development programs. Taking into consideration these needs, they proposed six guidelines for effective staff development. The first two guidelines suggested more participant control over the "what", focusing on job-related tasks that the teachers believe are important, and the "how" of learning. These guidelines were based on the following adult learning theories:

> 1) Adults will commit to learning something when the goals and objectives are considered realistic and important to the learner, that is, job related and perceived as being immediately useful;
> 2) Adults will learn, retain and use what they perceive is relevant to their personal and professional needs;
> 3) Adults want to be the originators of their own learning; that is involved in selection of objectives, content, activities, and assessment in In-service education (p. 376).

The viability of Wood and Thompson's (1980) guidelines for staff development concurs with the earlier work of Lawrence (1974) in his

synthesis of nearly one hundred research studies. He concluded that staff development training programs that had an emerging design with teachers participating as helpers and planners tended to be more successful than those programs that were preplanned without teacher input. This is also similar to the hypothesis drawn by Joyce, McNair, Diaz and McKibbin (1976). Joyce et al. (1976), after interviewing over one thousand teachers, administrators, and college faculty members about staff development, found there was a desire on the part of teachers to have more responsibility for the content of staff development programs. They also suggested that teachers want staff development content to relate to their on-the-job needs.

Practice Under Guidance

Another common theme advanced by researchers who have studied staff development is providing teachers with the opportunity to practice innovations in their own classrooms under guidance. This is sometimes referred to as guided practice, coaching, or peer observation (Mazzarella, 1980).

Berman and McLaughlin (1976) in their study of federally funded programs supporting educational change found "peer observation" to be one of the more common staff development activities in effective staff development programs. The Joyce and Showers (1980, 1982), Wood and Thompson (1980), and Sparks (1983a, 1983b) studies all supported the finding of Berman and McLaughlin (1976). Sparks warned, however, that the peer observation process should not just provide feedback. She suggested its most

important function is to "stimulate analysis and discussion of the effects of teaching behavior on students" (p. 67).

Joyce and Showers (1980), in their review of over 200 staff development studies, concluded that there were several major components that should be present for "peer coached" staff development to be effective. Among these components were the following:

1) practice in simulated and classroom settings
2) feedback about performance (structured and open-ended)
3) coaching for application (p. 380)

Joyce and Showers (1980) suggested that feedback is necessary for increasing the teachers' awareness of their teaching behaviors; feedback alone, however, will not promote permanent change. Their research found that adding the component of coaching increased teachers' attempts to alter their teaching behaviors.

Coaching was defined by Joyce and Showers (1982) as "hands-on in-classroom assistance with the transfer of skills and strategies to the classroom" (p. 380). Coaching consists of the following functions: a) provision of companionship, b) giving technical feedback, c) analysis of application, d) adaption to the students, and e) personal facilitation.

Provision of companionship allows the users of an innovation to share success and failure, reflect, check their perceptions, and problem-solve with a coach in a non-evaluative atmosphere. Technical feedback allows the teacher to receive ongoing consistent feedback as the implementation of the

project begins and progresses. The teacher receives information on omissions, areas of confusion and concern, and successes. Analysis of application allows the teacher and coach to figure out, together, how much has been accomplished, and when to use the innovation. Adaption to the students allows the teacher to receive help in "reading" the students' responses and making instructional decisions about when and how to adapt the innovation to foster student growth. Facilitation provides the teacher with "interpersonal support" and "close contact" with other educators (Joyce & Showers, 1982).

Ongoing Process to Allow for Participant Adaption

Many researchers found that one-shot "guru"-led staff development workshops were unsuccessful in encouraging teachers to better understand and change their practice (Lawrence 1974). Berman & McLaughlin (1975) found staff development programs that are spread out over time (ongoing) tended to have greater impact on teaching behaviors. Similarly, Howey (1980) in his study of in-service education, found that staff development offered in an ongoing fashion across a sequenced length of time was more successful than one shot programs in changing teachers' practices.

One possible explanation for this is that teachers need time to adapt new innovations. This is often referred to as "mutual adaption" (Sparks, 1983; Berman & McLaughlin, 1975; and Joyce & Showers, 1982). "Mutual adaption" occurs when teachers try out a new practice over a period of time and adapt and modify it to fit into their own teaching situation.

Provision of Alternatives to Accommodate Individuals

Providing alternatives to accommodate individual teachers' needs was another theme which was found in many successful staff development projects (Sparks, 1983; Wood & Thompson, 1980). Lawrence (1974) and Berman and McLaughlin (1976) found that individualized inservice education programs tended to be better than single offerings for large groups of teachers. Taking into consideration the nature of adult learning, Wood and Thompson (1980) suggested the following:

> Adults come to any learning experience (in-service) with a wide range of previous experience, knowledge, skills, self-direction, interests, and competence. Individualization, therefore, is appropriate for adults as well as children (p. 376).

Sparks (1983) in her discussion of teachers and their affect on staff development programs asserted that "teachers make a conscious decision whether they will or will not try out or adapt a new practice" (p. 70). Doyle and Ponders (1977) suggested three criteria that may influence a teacher's decision whether or not to try out or adapt a new practice. The first dealt with the instrumentality of the practice; the extent to which the teacher perceives the explanation of the practice is specifically and clearly stated. The second dealt with congruence. This related to how well the teacher perceives the practice will fit into her or his philosophy of teaching. The third dealt with cost, that is, how the teacher perceives the amount of effort required in relation to the payoff for the use of the new practice (Sparks, 1983).

Summary

Researchers have studied, synthesized, and hypothesized issues relating to effective staff development. Taking into consideration the results of their studies, it is recommended that the following be considered when planning and running staff development experiences for teachers:

1) the participants should have more control over the "what" and "how" of staff development programs;

2) the participants should be provided with the opportunity to practice innovations, under guidance by other participants, in their own classrooms;

3) staff development programs should be ongoing, spaced over a period of time to allow participants time to adopt and modify innovations to their own unique situations;

4) the participants of a staff development program should be provided with alternatives to accommodate individual teachers' experiences, knowledge, skills, interests, perceptions, and attitudes.

Action Research

Many researchers such as Tikunoff and Mergendoller (1983) and Jacullo-Noto (1984) have suggested that action research is one approach to staff development that encourages teachers to have control of the "what" and "how", allows opportunity to practice innovations under guidance, is ongoing, and provides alternatives to accommodate individuals. Action

research as staff development encourages teachers to improve and increase their understanding of their own practice.

McKernan (1988) divided the history of action research into several eras. Four of those eras, a) the progressive education movement, b) the group dynamics movement (from social psychology), c) the Corey era (postwar), and d) the teacher-researcher movement will be used to guide the following section.

The Progressive Education Movement

Although some believe action research began with the social psychologist, Kurt Lewin, in the 1940's (Chein, Cook, & Harding, 1948; Corey, 1953; Smulyan, 1983), McKernan (1988) claims the roots of and philosophy behind action research can be traced back to the early 1900's.

Buckingham (1926) in his book Research for Teachers emphasized that research should be required of all teachers, including public grade school teachers. He also called for cooperation between researchers and practitioners in research, and the use of both qualitative and quantitative methods in educational research. Buckingham (1926) stated that one of two purposes of his book was to show that if teachers seized the opportunity to do research, the techniques of teaching would be rapidly developed and teaching would be dignified and revitalized. He believed the emancipation and professionalization of teaching would be accomplished through teachers engaging in research.

Dewey (1929, 1930) in his books, The Source of a Science in Education and The Theory of Inquiry called for the use of a scientific/reflective approach to problem solving. He emphasized that the job of a teacher was to investigate, through inquiry, pedagogical problems and concerns. Dewey (1929) believed the data for educational research should come from educational practice:

> Educational practices provide the data, the subject matter which form the problems of inquiry. They are the sole source of the ultimate problems to be investigated. These educational practices are also the final test of value of the conclusions of all research. (p. 33)

Group Dynamics Era

It was during the group dynamics era in the mid 1940's and 1950's that the term "action research" first appeared. Action research during this era was aimed at diagnosing and helping laymen take action to improve their specific social situations (Cameron - Jones, 1983). Chein et al. (1948) in their summary of action research during this period suggested that when practitioners participated in the research process, the resulting actions were more important than the precision of the research.

Lewin (1952), a social psychologist, was one of the first writers to use the term action research. He spent a lot of time working with minority groups, especially blacks and Jews, guiding them in their efforts to deal with prejudice. Additionally, Lewin spent time working with groups of industrial

workers and their wives, helping them to improve their working situations and family eating habits. He suggested using the social problems of groups as the basis of social science research. Lewin believed that the group confronted with the conflict ought to be the group that worked "democratically" to solve the problem. He stressed, in addition, the "marriage between" experimental research and social action because "research that produces nothing but books will not suffice" (p. 203).

One of Lewin's major contributions to the action research field was his action research theory. He described action research as a series of steps, each a circle. Every action circle included analyzing the situation, finding facts, planning the action, implementing the action, evaluating the action, and beginning a new cycle of action research.

During the same era, Collier (1945), the Commissioner of Indian Affairs, also advocated the use of social programs linked with research. Collier's method of research emphasized research being done by those who must carry out the results. He said, "since the findings of the research must be carried into effect by the administrator and the layman, and must be criticized by them through their experiences, the administrator and the layman must themselves participate creatively in the research, impelled as it is from their own area of need" (p. 276). Collier believed that the type of research needed was "field research" because it would respond to the social problems of the group. His research theory was also cyclical, going from

research to action to research to action in a continuous spiral (McKernan, 1988).

Corey Postwar Era

Action research was first seen in education during the Corey Postwar era. The Horace Mann-Lincoln Institute at Teachers College, Columbia University, was involved in collaborative curriculum development with some local public schools. Corey, who was working at Teachers College, quickly became a well-known advocate and leader of action research in the field of education. In 1949 Corey described an action researcher as someone who was

> interested in the improvement of the educational practice in which he is engaging. He undertakes research in order to find out how to do his job better. Action research means research that affects actions. (p. 509)

Corey stressed that the strength of action research lies in its ability to help teachers make significant change and improvement in their practice.

In his book Action Research to Improve School Practices, Corey (1953) defined action research as a process by which practitioners can study their problems and concerns scientifically with the ultimate goals of increased understanding and improvement of practice. Corey's action research theory consisted of five steps: a) defining the problem, b) hypothesizing, c) designing the hypothesis test, d) collecting evidence, and e) reaching conclusions.

Corey believed that many of the researchers using the scientific method in education had no intention of using the results for the improvement of practice. He, therefore, stressed cooperation between practitioners and researchers. Corey believed that cooperation during action research could provide a support system for educators which would encourage experimentation and improvement in practice. Unlike Lewin and Collier, however, Corey did not believe that the results of action research could be generalized to other populations.

During the mid-1950's, there was a decline in the use of action research in education (McKernan, 1988; Sanford, 1970; Ward & Tikunoff, 1982). Critics such as Hodgkinson (1957) wrote about action research in education as sloppy research and weak in methodology. He felt that action research relied on researchers (teachers) who were not adequately trained in the skills of research. Hodgkinson (1957) also spoke about action research as unsystematic and unscientific. He said, "Perhaps it would be better to define action research as quantified common sense rather than as a form of scientific empirical research" (p. 146). Hodgkinson (1957) believed that action research took a downturn when researchers reinterpreted the work of Lewin for educational research, because in its reinterpretation, action research became a weak form of research suitable only for "already busy practitioners."

Some researchers have suggested that much of the trouble may have come from the struggle about which area, science or action, had the greater

status (Sanford, 1970; Ward & Tikunoff, 1982). Additionally, it was suggested that many of the federal funding agencies during that time were only granting money to the more "scientific" research projects (McKernan, 1988). Writers also have attributed the downfall of action research in education to the separation of theoretical research and practice (McKernan, 1988; Sanford, 1970; Smulyan, 1983).

The Teacher Researcher Movement

A rebirth of interest in action research in education took place in the 1970's and 1980's (the teacher-researcher era). Many reasons for the revival have been hypothesized including (a) a new interest in helping teachers deal with their practice, (b) a new interest in collaborative projects between universities and schools, (c) the belief by many that the more traditional educational research was unable to address immediate and pressing problems of the classroom, and (d) a growing concern that traditional staff development programs did not meet the needs of teachers (McKernan, 1988; Smulyan, 1983; Tikunoff, Ward & Griffin, 1979).

In the United Kingdom, Adelman and Elliott (1978) and Stenhouse (1976) are frequently associated with the rebirth of action research in education. Adelman and Elliott argued that teachers must become participants in the inquiry process and the development of theories if the changes are to become lasting. They suggested that action research is not just research, that it is a process of educating teachers.

Adelman & Elliott (1978) were involved in the Ford Teaching Project and founded the Classroom Action Research Network (CARN). The Ford Teaching Project was established to involve teachers in an action research study of the implementation of a inquiry/discovery approach in their classrooms. Forty teachers from twelve schools and two researchers were invited to participate in the project. The initial design had two areas of focus: practitioner-defined problems and collaboration between practitioners and outside researchers (Elliott, 1976).

As the project developed, Adelman & Elliott (1978) became interested in how a researcher helped teachers to begin to reflect about their practice. This reflection, called "self-monitoring", was defined as the process by which teachers become aware of their own situation and the role they played in that situation (Elliott, 1976). After the completion of the Ford Teaching Project, CARN became a resource and publication outlet for the teachers and researchers involved in action research.

During the same era, Stenhouse (1976) in his book, An Introduction to Curriculum Research and Development, also stressed the importance of teaching based on research. He asserted that research was the responsibility of teachers. Stenhouse (1976) declared, "it is not enough that teachers' work should be studied: they need to study it themselves" (p. 143). He believed that doing research would help increase teachers' understanding of their practice and thus improve their teaching and schooling situations.

Stenhouse (1976) called this process "extended professionalism", which he defined as "the commitment to systematic questioning of one's own teaching as a basis for development" (p. 144). Stenhouse believed that the teacher, through extended professionalism as a teacher-researcher, would become autonomous and emancipated.

Several researchers in Australia, during the mid 1980's, began writing about action research from a critical theory perspective. In their book, Becoming Critical: Education, Knowledge & Action Research, Carr and Kemmis (1986) defined action research as follows:

> A family of activities in curriculum development, professional development, school improvement programs, and systems planning and policy development. These activities have in common the identification of strategies of planned action which are implemented, and then systematically submitted to observation, reflection and change. Participants in the action being considered are integrally involved in all these activities. (pp, 164-165)

They believed action research had the ability to empower and liberate teachers from the powerlessness and oppression that came from such positivistic beliefs as, "there is one truth, one best way."

Carr & Kemmis (1986) based their cycle of action research on the earlier work of Lewin (1952). Like Lewin, they described action research as a spiral of cycles of planning, acting, observing, and reflecting. They suggested that action research has two equally important objectives, improvement and involvement.

Action research from a critical theory perspective stressed the interpretation, explanation, and understanding of social realities and the social actors involved. These realities are believed to be socially constructed and historically embedded. Action research from a critical theory perspective, then, attempts to equip teachers with analytical skills which will lead them to liberation (Carr & Kemmis, 1986).

Another action research perspective that developed during the teacher-researcher era of the late 1970's in the American education literature was Interactive Research and Development (IR&D). The IR&D model was field tested by Far West Laboratory for Education Research and Development as part of the Interactive Research and Development on Teaching (IR&DT) study (Tikunoff, Ward, & Griffin, 1979). The IR&D model was developed out of the authors' belief that the currently used linear research and development model, which consisted of research, development, dissemination and adoption, was ineffective in getting the results of research put into practice in classrooms. In the words of Tikunoff, Ward and Griffin (1979),

> IR&DT places teachers, researchers and trainers/ developers together to inquire as a team, beginning with the initiation of the r & d process into those questions, problems and concerns of classroom teachers. An IR&DT team is charged with conducting research and concurrently developing training based on both the research findings and the research methods and procedures employed in their study. Decisions are made collaboratively. For IR&DT, this means that each member of the team has parity and shares equal responsibility for the team's decisions and actions from identification

> of a question / problem through completion of all resultant research and development activities. (p. 4)

Ward and Tikunoff (1982) suggested that the IR&D model had several advantages over the older linear research and development model. First, they believed there was a greater likelihood that research results would be used because teachers were included from the beginning and it was their concerns that were researched. Second, the research evolving from the IR&D model was more likely to be relevant to the teachers' instructional needs because of the teachers' participation.

The IR&D model required a research team consisting of teachers, researchers, and developers to work together conducting research and development in the schools (Griffin, 1982). The IR&D model had six stages: (1) problem identification, (2) collection of appropriate reading and research materials, (3) formation of a plan of action, (4) implementation of the plan of action, (5) review of the project, and (6) overall evaluation and a new cycle.

Action research in education has continued to spread in the American literature, beyond the initial work of Ward and Tikunoff (1975). Currently, action research is subsumed under titles such as action research (Cameron-Jones, 1983; Ross, 1983), collaborative action research (Pine, 1979), collaborative research (Elliott, 1976, 1978; Lieberman, 1986), interactive research and development (Huling, 1982; Ward & Tikunoff, 1982), and participatory research or teachers as researchers (Carr & Kemmis, 1986; Tikunoff & Mergendollar, 1983).

Summary

Taking into consideration all of the above models and definitions of action research, several factors seem to underlie the current work in the area of action research: 1) teachers and researchers work together, planning, implementing, and analyzing teachers concerns; 2) the research focuses on "real world" problems of the teachers; 3) teachers and researchers gain respect for each other and grow in their understanding of instruction; and 4) it is a continuous cycle with the goal of better understanding of and improved practice.

Review of Major Action Research as Staff Development Projects and Teachers' Perceptions Thereof

For this next section of reviewed literature, the studies reported were divided into two categories. The first category focuses on studies that reported on the use of collaborative action research as staff development. The second category presentes studies that focused on the teacher's perceptions of and experiences during action research projects.

Action Research as Staff Development

Mergendollar (1981) in his paper, "Mutual inquiry: The role of collaborative research in teaching in school-based staff development", discussed collaborative research as it was used in two school-based staff development studies. The first was an 18-month study which included all teachers at an elementary school. The purpose of the study was to

"understand and describe successful instructional programs and practices which occur in successful schools from the perspective of both teachers and students" (p. 5). The second study discussed by Mergendoller was the Interactive Research and Development on Teaching study (Tikunoff, Ward, and Griffin, 1979).

Based on the results of the two studies, Mergendollar suggested three characteristics that must exist for collaborative research to be successful: parity (mutual respect between researchers and teachers), maintenance of reciprocal relationships (those having a "natural give and take"), and a common language.

Mergendoller then compared the collaborative research studies to Howey's (1980) research which suggested necessary qualities for successful staff development:

1. Teachers are centrally involved in all aspects of the staff development process.
2. Attention is given not only to individual teachers but to key functioning groups and entire faculties.
3. School-focussed in-service goes beyond the sharing of ideas and includes demonstration, experimentation, supervised trials and feedback.
4. There is continuity, i.e., in-service is seen as a process, often a developmental or incremental one, and not an event.
5. There are ample opportunities for reflection about as well as action; there is consideration of alternatives to what one is doing.
6. School-focussed in-service is concerned with teacher changes which are implied in resolving cross-cutting school problems of mutual concern.

> 7. School-focussed in-service often is embedded in experimentation and problem-solving which is integral to the daily instructional tasks of the teacher; it is differentiated from teaching by the conscious planning for teacher growth and the type of critical examination and sharing which accompany the teaching. (Howey, 1980 cited in Mergendollar, 1981, p. 9).

Mergendoller concluded that collaborative research, as used in the two reviewed studies, met all the characteristics necessary for successful staff development and therefore confirmed his hypothesis that "collaborative action research has a central role to play in staff development programs" (p. 222).

Ross (1983) discussed action research in a university laboratory setting. The school employed two full-time researchers and expected that all teachers would "support the research mission of the school" (p. 4). Ross interviewed 15 teachers who had participated in research. The purpose of the interviews was to identify which factors promoted or limited the teachers' projects.

Based on her synthesis of the interview results, Ross made nine recommendations to administrators who wish their teachers to conduct action research as staff development.

1) Help teachers develop a realistic definition of research (p. 4).
2) Encourage participation in research projects, but keep participation voluntary (p. 5).
3) Provide time and money as incentives for conducting research (p. 6).
4) Provide systematic instruction to help teachers develop the skills necessary to conduct research (p. 7).

5) Provide access to appropriate resource personnel on a continuing basis (p. 9).
6) Develop a systematic way for teachers to share ideas with one another (p. 11).
7) Recruit only highly motivated teachers (p. 13).
8) Involve the teachers from the initial moment of decision-making (p. 13).
9) Make several people responsible for the coordination of the project (p. 15).

Tikunoff, Ward and Griffin (1979) reported findings from the IR&DT study. The focus of the study was the hypothesis that there would be a positive impact on the professional growth of teachers who engaged in research. Two schools, one urban in California and one rural in Vermont, participated in the study. The urban-site had four teachers, one researcher, and one developer. The rural-site had three teachers, one researcher, and two developers participate.

The urban-site study looked at the strategies and techniques used by classroom teachers coping with distractions during instruction and how effective those strategies were. They used a combination of quantitative and qualitative methodologies. The occurrences of distractions and coping strategies were coded quantitatively. Qualitative methodologies included narrative descriptions of contextual information and student-teacher interactions.

The rural-site study focused on the nature of the relationship between a teacher's moods and the teacher's instructional behaviors. A combination of quantitative (a check list) and qualitative (interviews and narrative descriptions of occurrences) methodologies were used.

The authors asserted that participation in the IR&DT study helped the teachers develop habits of inquiry. In summary, they concluded that their hypothesis that teachers engaging in research would have a positive impact on their professional growth was confirmed because the teachers were:

1) more aware of educational options,
2) more knowledgeable about the process of research,
3) better able to communicate professionally,
4) better able to understand research and development,
5) more likely to believe that research findings were worthwhile,
6) more likely to rely on prior research when making decisions, and
7) showing significant changes in their professional practice.

Griffin (1983) reported findings based on an IR&D study conducted at Texas Technical University. The premise on which the study was based was that classroom teachers did not use research findings in their teaching or look to research findings to help solve classroom problems. The purpose of the study was two-fold, to discover whether teachers who participated in research would 1) show a significant change in their concerns about the use of research findings in their teachings, and 2) acquire skills, interests, and attitudes which would encourage the teachers to use research findings in their teaching.

Thirty-one teachers participated in the study, 13 in a treatment group and 18 in a control group. Teachers' perceptions and attitudes were studied through questionnaires, open-ended statements, and informal interviews. The findings indicated that the teachers in the treatment group showed

significantly greater changes in their concerns about using research findings in teaching and a significant increase in research, teaching, and development skills. From these results, Griffin concluded that participation in the research process promoted teachers' learning inquiry skills which aided in their ability to examine and understand their own teaching. Griffin said, "inquiry skills are valuable tools to be added to a teacher's professional repertoire. Staff development which utilizes the IR&D strategy enables teachers to acquire those skills" (p. 224).

Cameron-Jones (1983), in her article "A researching profession? The growth of classroom action research", discussed action research as staff or professional development. She described the goal of action research as staff development as a systematic process which leads to better understanding and improvement of classroom practice. The study addressed two major questions: how action research contributed to the development of in-service teachers and how action research contributed to the development of research in general. In response to the first question, Cameron-Jones suggested that because action research is developmental (rather than based on teachers' deficiencies), teacher generated (rather than imposed), based on theory (rather than superficial technical improvements), is applicable in pedagogy, and deals with the teacher as an agent for change in her or his own practice , that as an in-service activity, action research "meets the highest criteria of worth in in-service activities" (p. 6).

Simmons' (1984) paper, "Action research as a means of professionalizing staff development for classroom teachers and school staffs", analyzed four studies (Huling (1981), Little (1981), Sanders and McCutcheon (1984), and Oja (1983)) of classroom teachers using action research as staff development. Specifically, she discussed teaching as work, the realities of teaching, professionalizing staff development, what is known about effective staff development programs, and the use of action research in staff development programs. Simmons described the purpose of action research as, "a staff development experience. . . to strengthen teachers' professional knowledge, classroom effectiveness, inquiry skills, professional self-efficacy beliefs, critical thinking habits, collegial attitudes, and professional autonomy" (p. 53). In her synthesis of the reported results from the four studies, Simmons concluded that action research, although frequently criticized as not being rigorous enough, as a staff development experience with the goals of enhancing teaching as a profession and reforming schools served as a "valuable staff development experience resulting in growth related to the teacher's professional knowledge-base, skills and attitudes" (p. 38).

Teachers' Perceptions of Their Experiences with Action Research as Staff Development

Smulyan (1983) reported a two-year action research project in her article, "A two-year study of teachers' stage development in relation to

collaborative action research in schools". The purpose of the study was to examine relationships among participating teachers' developmental stages, action research in schools, and the process of individual change. In this article she specifically discussed one of the three major issues addressed in the study, the impact of action research on individual change. Smulyan claimed that through participation in action research, "teachers 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" (p. 14). She further discussed how the new knowledge helped teachers become more receptive to and flexible with new ideas. Smulyan concluded by discussing comments made by the teachers involved. The teachers claimed that as a result of their participation in the collaborative action research project, they were provided with an opportunity for professional growth.

In her study, "The effects on teachers of participation in an interactive research and development project", Huling (1982) looked at the hypothesis that teachers' continued use of research in their teaching (after completion of action research) was dependent upon a change in their attitudes about the usefulness of research. In order to accomplish this, Huling decided to study affective aspects of what was happening to teachers during participation in action research. She used a pretest, posttest control group design. Thirteen teachers, five researchers, and three developers participated in the study.

Huling used three affective measures: the Researching-Teaching - Development Skills Questionnaire (Far West Laboratory), the Professional Development Questionnaire (Far West Laboratory), and the Stages of Concerns Questionnaire (Hall). She concluded that teachers who participated in the IR&D projects expressed significantly greater changes and positive attitudes in their concerns about using research findings in their practices than those teachers who did not participate.

Day (1985) was interested in changes in teachers' attitudes towards themselves as teachers during participation in action research. He argued that teachers, once they have discovered a solution to a problem, were unlikely to question that solution or the underlying problem again. His hypothesis, then, was that action research had the potential to help teachers escape from the traditional "single-looped teaching".

In his article "Professional learning and researcher intervention; An action research perspective", Day (1985) presented professional learning theories which emerged from the study, comments made by teachers during participation in action research projects, and unsolicited comments made by one teacher, five years after completion of the action research projects.

Day summarized the findings related to his initial hypothesis, and suggested that all participating teachers agreeded that action research provided them with time to think about, question, and change their teaching methods. Additionally, he reported the teachers felt that having a researcher

present enabled or forced them to find the time to systematically evaluate their teaching.

Day concluded by discussing comments made by one teacher, five years after participating in an action research project. Briefly, Day reported that the teacher said he still spoke and wrote about changes in his thinking as a result of engaging in the research process.

Summary

In summary, researchers such as Cameron-Jones (1983), Griffin(1983), Mergendoller (1981), Ross (1983), Simmons (1984) and Tikunoff, Ward and Griffin (1979) explored action research as staff development. They all claimed that action research meets the development and learning needs of adults. Additionally, all authors asserted that action research meets the requirements for effective staff development. The researchers claimed that action research as a model for in-service staff development was successful in changing teachers' behaviors and attitudes.

Day (1985), Huling (1982), and Smulyan (1983) explored teachers' perceptions of their experiences during action research projects. The types of studies that focused on teachers' perceptions were few, but all three seemed to conclude that teachers reported positive experiences and that they experienced changes in attitude and behaviors during participation in action research as staff development.

CHAPTER III

METHODOLOGY

Since the spring of 1987, a university-public school partnership was established between a university and the six middle schools in a southern city school system. During this time the schools have been actively engaged in revising and implementing a middle school physical education curriculum for sixth and seventh grades. The collaborative effort was designed to operate for three years. The first year was devoted to the revision of the sixth grade curriculum. The intent of the second year was to expand the curriculum to the seventh grade while maintaining its operation at the sixth grade level. The third year was a continuation of the work of the first and second years. Included in this collaborative project was ongoing staff development and inservice training for all participants involved in the project's implementation. The inservice workshops were planned and run by the project coordinator and this researcher.

Inservice training during the first year provided assistance in delivering the middle school curriculum and in fitness planning and evaluation. The second year's inservice training utilized a collaborative action research model to assist the teacher, with their instructional concerns.

The application of the collaborative action research model was initiated as a pilot study during the second year.

One of the major goals of the pilot study was to refine the collaborative action research staff development model so it could be fully utilized and studied in the third year of the partnership. The second major goal of the pilot study was to develop interview questions and methods to train the interviewers. (The interview questions which appear in appendix A were developed from the analysis of the pilot interviews). The interview questions were chosen because of their compatibility with the research problems and their ability to elicit responses from the teachers. The third major goal of the pilot study was for this researcher to develop and refine a procedure for the analysis of the interview data.

Subject Pool for Study

The pool of teachers available for this study consisted of seven sixth grade full-time physical education teachers who were participating in the collaborative project. The teachers' teaching experience ranged from one to 20 years. Four of the teachers were female. The remaining were male. Three of the teachers were black. The remaining teachers were white.

The total population of teachers involved in the collaborative project were given the opportunity to become involved in collaborative action research projects. Four teachers volunteered to participate in the collaborative action research staff development projects. Two were female,

one black and one white, and two were male, one black and one white. Teaching experience ranged from two to 19 years.

Collaborative Action Research Staff Development Project

Collaborative Action Research Model

The collaborative action research model that was used in this research included five stages adapted from Corey (1954), Lewin (1946), and Ward and Tikunoff (1975). The first stage was the identification of instructional concerns. The responsibility for identifying the problem was the teacher's with assistance, as needed, from a facilitator. The second stage was the development of a plan of action. During this stage, the facilitator assisted the teacher by providing any necessary materials, research and evaluation tools. The third stage, the implementation of the project, involved the teacher's incorporating into her or his teaching the plan of action developed during stage two. The fourth stage was the discussion and analysis of the results of the implementation (Stage 3). The teacher and facilitator discussed specific successes and failures at this point. The final stage was discussion and evaluation of the action research project along with recommendations for new or continued areas of study.

Role of the Facilitator

Two facilitators participated in this project, one university professor and this researcher. The role of the facilitator was to support the teacher who engaged in the implementation of a collaborative action research staff

development project. The facilitator assisted when needed by helping to develop the teacher's concerns into a solvable research question, by providing any necessary materials, resources, instructional strategies, tools, etc., collecting data, supporting the teacher during implementation, acting as a sounding board when the teacher identified specific successes and failures of the project, and developing a continued or new cycle of collaborative action research.

Role of the Interviewers

The first interviewer was an unbiased person not associated with the collaborative project who was trained in interview techniques and protocol. To facilitate the training, a pilot interview was held with one of the teachers who participated in the 1987 action research staff development projects. The interviewer was solely responsible for collecting the interview data during the designated data collection periods of the study. A second unbiased interviewer, also not associated with the collaborative project, was hired to run separate reliability check interviews, one during each interview phase, pre- and postproject.

Because of unforseen circumstances, the first interviewer had to resign from the project half-way through the interview process. The second interviewer, who had already conducted two reliability check interviews, took over and completed the remaining interviews. The first two reliability checks showed that the two interviewers elicited similar responses using the same interview guide.

Data Collection Procedures

The purpose of this study was to describe four middle school physical education teachers' self-reported experiences during collaborative action research staff development projects. As referred to in the introduction, Bogdan and Biklen (1982) suggested that understanding of personal experiences and perceptions is crucial for successful innovations and that these experiences and perceptions can be addressed through various research methods. In order to accomplish the goals of this study, three data collection methods-- interviews (structured and formal), teacher logs, and transcribed tapes of workshops and work sessions-- were used.

Interviews

The purpose of all interviews was to discover the participants' self-reported experiences during collaborative action research staff development projects. All participants were interviewed formally three times, once prior to beginning the collaborative project, a second time immediately after completion of the project, and a third time approximately one month after completion of the project. The purpose of the third interview was to explore any changes in the teachers' perceptions of and opinions about their experiences with collaborative action research. The formal interviews were structured and lasted from one half hour to one hour. The same interview guide was used to conduct all interviews.

The reliability of the interview responses was determined by using a second interviewer asking the same questions. One teacher was randomly chosen during each phase (pre- and postproject) to be interviewed a second time by the second interviewer. The interviews were then compared by the second interviewer to evaluate the similarities or differences in the responses.

All interviews were taped and then transcribed in order to provide an accurate record of all verbal transactions. The interview transcriptions were shared with the participants to gain and maintain trustworthiness and confidentiality. The participants were given the opportunity to correct and clarify any portion of the interview transcriptions. Only grammatical errors were corrected. No changes in content were made by the teachers. This researcher did not have access to the interview transcriptions until after the teachers reviewed the transcriptions and the projects were completed.

Logs

During the projects, the teachers were asked to record their experiences. A written log format was used. The procedures for log writing were covered during the group workshop.

The teachers were given three areas to discuss in order to record various aspects of their teaching and experiences during the collaborative action research projects. The information from the logs was used to augment the data from the interviews. Three areas were addressed in the logs:

1) Think about your instruction today. List five or six things that you did and elaborate on one or two of them.
2) For the one or two you select, discuss the reasoning behind why you chose to do them.
3) Describe how this collaborative action research project is affecting you and your teaching.

The teachers were asked to respond to the first two statements daily and to the third statement at the conclusion of the work week.

The researcher did not have access to the teachers' logs until the teachers' projects were completed. At the end of the first three weeks the second interviewer checked the logs to determine any difficulties in the teachers' entries. When a problem was identified, the interviewer notified this researcher of the source and type of problem. This researcher then contacted the teacher and attempted to rectify the problem. This situation occurred twice. Both times the second interviewer informed this researcher that one teacher's logs were not complete, that the teacher answered only statement one. Based on the information provided by the second interviewer, this researcher approached the teacher both times, discussed the problem and asked the teacher to elaborate further when discussing the reasoning behind her choice of instructional tactics (log statement two).

Workshops and Work Sessions

A series of workshops and work sessions were held during the projects. The workshops were formal meetings with all teachers and facilitators, held outside the teachers' schools. The work sessions were less formal meetings

with the individual research teams (one teacher and one facilitator), held at the teachers' schools.

The first workshop of the 1988-89 school year was held mid August, 1988. Attention was given to familiarizing new teachers involved in the collaborative project with the middle school curriculum and reviewing the curriculum with the continuing teachers. In addition, the workshop focused on the goals of the project for the upcoming school year.

A second workshop was held in early November, 1988. The purpose of this workshop was to organize collaborative action research projects and educate the teachers about writing logs. Research teams were organized, including one teacher from each site and a university facilitator. An open-ended statement work sheet adapted from Curwin and Fuhrmann (1975) was used to stimulate discussion and to help the teacher become involved with Stage 1 (identification of instructional concerns) of the action research model. See appendix B for the work sheets.

A work session was held with each of the teachers individually following the second group workshop. The purpose of this work session was to complete stage 1, identification of instructional concerns. At that time, concerns brought up at the group workshop were revisited and modified into a researchable problem. Following the work sessions, baseline data related to each teacher's concern were collected.

A second work session was held the week following the first work session with each of the teachers to develop a plan of action, Stage 2. At that time, the teacher and facilitator reviewed the initial instructional concerns of the teacher and the baseline data. A plan of action was developed to address the concerns. A research design was formulated, and the teacher, with assistance as needed from the facilitator, then implemented the plan of action, Stage 3.

A final work session was held with each teacher. The purpose of this work session was to discuss the project results and future recommendations, Stages 4 and 5 of the collaborative action research model.

All workshops and work sessions were taped and transcribed. The information was used to augment the data from the interviews and the teachers' logs. The initial group workshop lasted approximately three hours. All work sessions lasted from twenty minutes to one hour. The work sessions were held on an individual basis with each teacher and a facilitator, at the teacher's school.

Data Analysis

All raw data were transcribed in preparation for data processing. Every page of the interview responses, transcribed workshops and work sessions, and logs were coded with a letter to represent the teacher, a second letter to represent the source of the data, a number to indicate when the interview/ log/ transcribed workshop took place, and a second number to represent the

page number of the response. For example, one page of Randi's interview was coded RI-1-3 (R indicated Randi, I indicated interview, 1 indicated the first in the series of three interviews and 3 indicated the page number of the response). Each line in the interview/log/workshop was coded with a paragraph letter and a line number for further identification (e.g., the third line of the first paragraph of an interview was coded A3, A for the paragraph identification and 3 for the line in the paragraph).

Lincoln and Guba's (1985) model for analysis of data was utilized for data analysis in this research. The authors suggested that interview data processing begin with 'unitizing' and categorizing the raw data. 'Unitizing' refers to finding 'units' (small pieces of information from the raw data that are aimed at some understanding) and coding the units. Each unit is placed on an index card. The paragraph and line numbers are coded on the bottom front of the card and the interview/log/workshop information (person, source of data, and page number) is coded on the back of the card. Additionally, the question that is asked that elicited the response is penciled in on the front of the card so the unit can later be re-read in context.

Categorizing consists of several phases. First, temporary categories are chosen. All units that appear to be related to the same content are put into piles (e.g., teachers goals of individualizing instruction). After all cards are placed in piles, the first card in each pile is reviewed and the content noted and coded in pencil. Each successive card is re-read. If the card represents the

same content as the first card it is kept in the category. If the content of the unit did not directly relate to the category content, it is placed to the side and a new category developed. The process is continued with each pile of cards.

Next, rules are developed. Rules (phrases or sentences) are written which best represent the content of the piles of cards (e.g., teacher's self-reported perceptions of changes in her or his teaching during the project, etc.). Finally, each card is reviewed and compared to the rule to justify its inclusion in the category. All discarded cards are re-categorized.

Miles and Huberman (1984) suggested twelve ways of drawing and verifying conclusions (synthesizing). For this study, two of those suggestions, noting patterns and identifying themes are utilized. Additionally, differences among and between the teachers are noted. Results are reported in the form of narrative comparative case reports. Using comparative case reports also allowed the researcher to compare and contrast the patterns and themes from the individual case reports in Chapter VIII.

Data Presentation

The four individual case reports are presented in Chapters IV, V, VI, and VII. These chapters display pertinent data from interviews, workshops and teachers' logs in the form of four descriptive case reports. Pseudonyms were used to insure anonymity of the teachers and their schools. Each chapter is divided into three major sections: the teacher's perceptions prior to

the action research project, the teachers' collaborative action research project, and the teacher's perceptions after completing the action research project.

The first section, the teacher's perceptions prior to the action research project, addresses (a) research problem one: the self-reported perceptions of four middle school physical education teachers' about various aspects of their teaching; (b) research problem two: the four middle school physical education teachers' self-reported expressions of instructional autonomy; and (c) research problem three: the four middle school teachers' opinions of collaborative action research as a vehicle for improving instructional practice.

The second section, concerning the teachers' collaborative action research project, addresses research problem four; it presents the four middle school physical education teachers' collaborative action research projects. The third section, concerning the teachers perceptions after completing the action research project, re-examines research problems one, two and three.

CHAPTER IV

CASE STUDY ONE: RANDI

Randi, a black female in her forties, holds three higher education degrees: a bachelor's and a master's degree in physical education and a second master's degree in educational administration. She has been teaching physical education for nineteen years. During the collaborative project Randi taught sixth grade physical educaiton at Adams Middle School. She met with her classes, approximately 25 students, 5 days a week for 45 minutes. Three days were devoted to skill development and the remaining two days focused on improving students' fitness levels.

Prior to the Action Research Project

Randi's Teaching

Two themes related to Randi's teaching emerged from her interviews and logs. The first theme was Management of Class Time, which was related to concerns about organizational procedures and management of class activities. The second theme was Individualizing Instruction, which was defined as the teacher's providing students, one on one, with information about a movement concept or motor skill performance.

Management of class time. Randi always began class with a timed walk/jog as soon as her students entered the gymnasium. She believed that starting class immediately with the jog cut back on wasted time. Randi explained this in her first log:

> Students warm up with jogging and walking, it gets the students prepared for the lesson. The roll can be done quickly and students also have an opportunity to change for class.

Because of this, Randi described her physical education classes as having high on-task time. When responding to an interview question about what one would observe during a typical physical education class, Randi said:

> [You would see] kids who are highly active. . . motivated and ready to go, ready to learn. . . [You would see] that a lot of teaching and learning is taking place. . . that [students] are enjoying what they are doing.

After the class warm-up, Randi reviewed relevant materials covered during previous classes. At that time, students were given the opportunity to ask and answer questions. Following the review, daily objectives were discussed.

At the close of the lesson, Randi did an overall review. Students were given the chance to discuss what they had learned during the class. Randi also used this time to answer questions and give feedback to the class as a whole.

During skill development days, Randi frequently broke her class into groups of two to four students to work on skills. At the conclusion of a skills

unit, Randi allowed her students to play a large-group game. She believed that this brought closure to the unit. At the first work session Randi explained:

> [using large group games] is really a summary of all the skills that they have learned. It is just a way for them to put those skills into a game situation.

Individualizing Instruction. One of Randi's goals in teaching physical education was that all her students be given the opportunity to develop their skills. Randi believed that students should be allowed to work at their own skill level and that providing students with individualized feedback is important for achieving this goal. During the preproject interview, Randi indicated that to individualize her instruction effectively she needed to monitor students closely as they were working. In her log she explained her monitoring technique:

> during monitoring [I have the] opportunity to do individualized instruction. I [can] see individual skill development and I [have] the opportunity to point out to students those things that they [are] doing right, and to correct techniques that [are] improperly executed.

When planning her delivery of materials, Randi considered each student's knowledge of skills and ability. During the interview Randi specifically discussed looking at her students' skill levels and leaving time to work with students one-to-one when developing lesson plans:

> basically, when I do my planning for my lessons, I'm looking at the students' level of skill development. I try to plan so that [for] those students who have low skills, I have time to work with them, as well as with those that have high skill levels, so that they can be challenged.

Expressions of Instructional Autonomy

For the purpose of this research, instructional autonomy was defined as a teacher's self-direction in making decisions in various aspects of learning, teaching, and planning. It is helpful to recall that one of the major purposes of action research is for the teachers to feel a sense of control over their own teaching through the research process.

Randi spent little time during the preproject interview discussing her self-direction and decision-making processes. As she became more involved with studying her own teaching and more accustomed to the interview process, her responses to interview questions related to instructional autonomy were more elaborate. The only reference made during the pre-project interview to her self-direction focused on preferred learning style. Randi said that she liked to be involved directly in her learning.

> I like to be involved. I like to have hands-on experience. I believe that you learn by doing. It is a personal experience in that you take it in better than if someone just stands up and lectures you on how it's done.

Opinion of Collaborative Action Research as a Vehicle for Improving Instructional Practice

Randi appeared excited about the idea of doing research on her own teaching. During the interview Randi stated that action research could give

her an overall picture of how she taught and that she could use that information to improve her teaching and hence improve students' learning.

> I believe that [action research] will be useful in improving my teaching and also help [students] to learn. . . It [will tell me] if what [I do] is really beneficial. Is there anything that I am doing to really improve learning? The particular topic that I want to do research on is one of my instructional concerns and I want to be able to get. . . a big picture of what I am accomplishing.

Collaborative Action Research Project

Stage 1: Indentification of Instructional Concerns

The purpose of Stage 1 is for the teacher and facilitator to work together to identify various concerns of the teacher. During the preproject group workshop, Randi mentioned that she felt "encouraged" about teaching when all her students learned and improved their skills. She also remarked that she felt "successful" as a teacher when she helped others to accomplish goals and develop their skills. When responding to a question about what she did as a physical education teacher to achieve her goals, Randi said that she worked with students individually, especially the lower-skilled students, in order to help them develop their skills.

At the conclusion of the workshop, Randi stated that she was interested in studying her interactions with students. She decided to do an exploratory collaborative action research study which would help her develop a profile of her verbal interaction with students. Randi was especially interested in finding out how much time she spent giving individualized

skill instruction. This was consistent with her previously stated instructional goal of individualizing instruction to enhance student learning.

Stage 2: Development of a Plan of Action

After the group workshop, a follow-up work session was scheduled for Randi and the facilitator to develop a plan of action for Randi's project. During the work session Randi and the facilitator revisited the ideas she had discussed at the prior workshop.

After discussing with her facilitator possible ways of obtaining the information on her verbal interactions with students, Randi decided to audio-tape and code several of her classes. In order to audio-tape her verbal interactions, Randi decided to attach a microcassette player to her whistle, which she wore around her neck. The microcassette player was lightweight and presented no problems during Randi's teaching.

After reviewing several previously published coding tools presented by the facilitator, Randi decided to develop her own. She felt that the tools already developed were not pertinent to what she wished to study and that developing her own tool would allow her to focus only on those interactions that were of interest to her. Randi scheduled a second work session with her facilitator for the following week in order to give her the necessary time to develop her coding tool.

During the second work session, Randi discussed with her facilitator the coding tool she had developed for analyzing her tapes. The coding tool

included tallying the following types of verbal interactions for the whole class as well as for individual students: (a) directions, (b) instructions, and (c) behavior monitoring. See appendix C for the coding form.

The directions category pertained to how often Randi provided information to students unrelated to a movement concept or the performance of a motor skill. Directions included class management tasks such as organizing activities and making announcements. The directions category had two subgroups: directions to the group and directions to individual students.

In the instruction category, Randi provided students with information directly related to a movement concept or a motor skill performance, with intent for student learning. Instructions included feedback which could be general (e.g., good job), specific (e.g., I like the way you bent your elbow) or corrective (i.e., next time try to stretch your arm). The instruction category had two subgroups: instructions to the group and instructions to individual students.

The behavior monitoring category pertained to Randi's efforts to modify or change inappropriate gymnasium behavior. Behavior monitoring included praise when proper behavior was exhibited and correction when inappropriate behavior was exhibited.

At the conclusion of the second work session, Randi and the facilitator agreed to tape two of the three weekly skill days. The days to be taped were

determined by the teacher's schedule and the time availability of the facilitator. They also decided that the taping would begin the following week.

Randi chose to record and code her third period class because she had a planning period during the fourth period; taping third period allowed her to code her tapes directly after her lesson.

Stage 3: Implementation

The purpose of Stage 3 was to implement the plan of action developed during Stage 2. After developing the coding tool, Randi taped, coded, and graphed five days of her third period physical educaiton classes. Because of holidays, special school events, and tape recorder malfunctions the five classes were coded over a period of three weeks. The days selected reflected various types of instruction. Table 1 provides a schedule of coded classes and the content taught during those days.

Table 1
Coding Schedule for Randi

LESSON ORGANIZATION	CONTENT	DATE
Small Group Game	Soccer	11/21/88
Skill Instruction	Floor Hockey	11/30/88
Large Group Game	Soccer	12/02/88
Skill Instruction	Badminton	12/12/88
Skill Instruction	Badminton	12/14/88

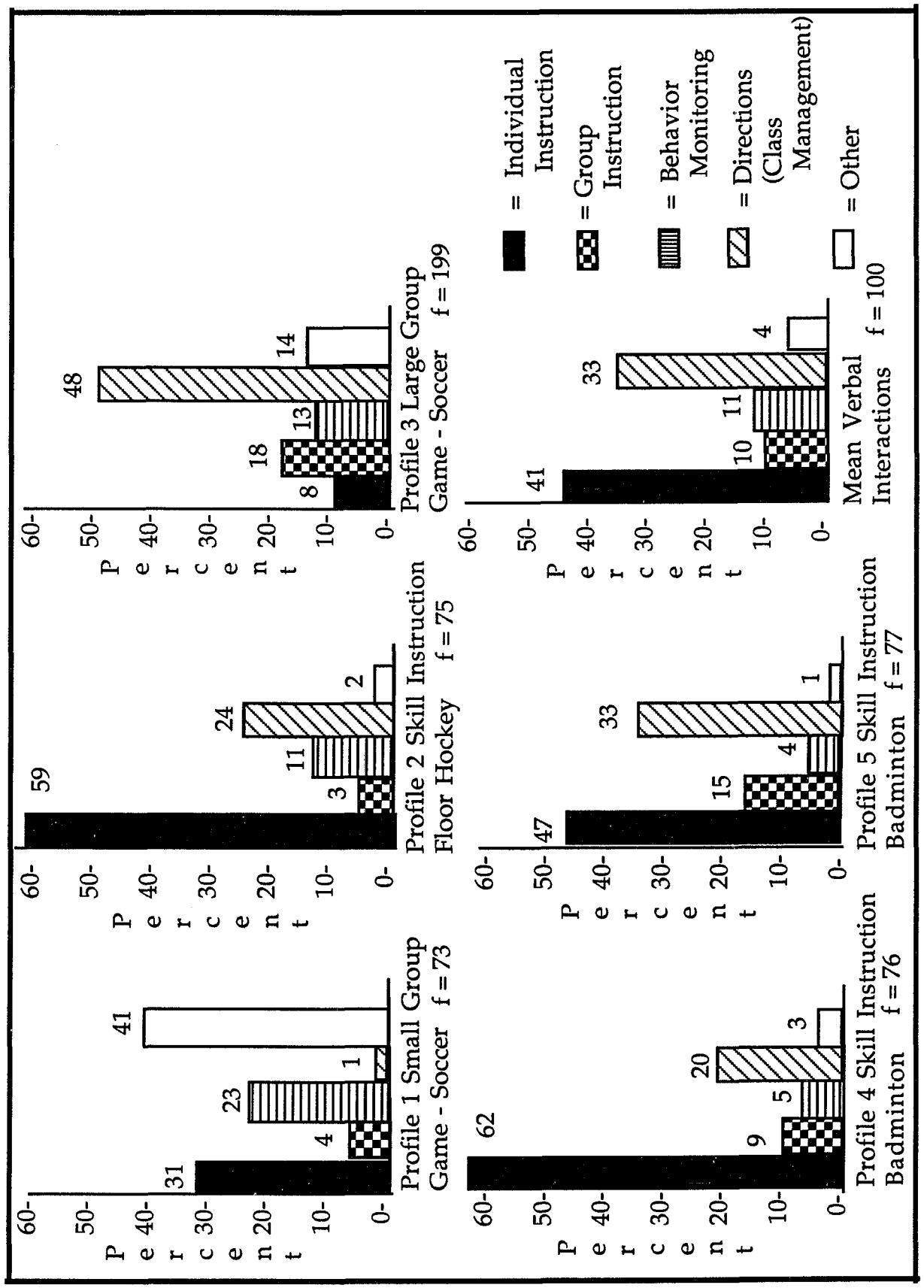
When coding the first two taped classes, Randi and the facilitator listened to and together coded her tapes. After each of Randi's verbal statements the recorder was stopped to discuss the content of the interaction. A tally was then placed in the appropriate category. This process served as a guide for accurate coding. Through discussion, 100 percent agreement was reached. After the first two tapes, Randi coded her remaining tapes. The facilitator was present to answer any questions about how a verbal interaction was to be coded.

After the second taped class, Randi revised her coding system to include the name of each student contacted during the class period. This change was made because Randi decided she also wanted to know with whom she had individual interactions. Randi added a column for listing the frequency of interactions and the nature of the interaction i.e., directions, instructions, and behavior monitoring with each individual student.

Stage 4: Discussion and Analysis of the Results of the Project

At the fourth and final work session, Randi discussed what she had learned as a result of her verbal interaction profiles. Figure 1 provides a graphic display of Randi's verbal interaction profiles. By reviewing her profiles, Randi learned that, on average, 51 percent of her interaction with students deal with instruction. Forty-one percent of her instructional verbal interactions were devoted to individual instruction, while 10 percent dealt with group instruction.

Figure 1 Randi's Verbal Interactions Profile



Randi also learned that on days when she had her students playing one large-group game (e.g., soccer), her individualized skill instruction was very low (8%), and that most of her time (48%) was spent reminding students of game rules and giving nonskill or class management directions (see Figure 1, profile 3).

Unlike large-group game days, when Randi divided her students into small groups of four to six to play small-group games, she discovered she gave more individualized instruction to students. Figure 1, profile 1 shows that Randi gave individualized instruction 31 percent of her time during the small-group soccer games.

Finally, Randi learned that on days she gave new skill instruction that her individualized instruction was high and her direction giving was low. Figure 1, profiles 2, 4, and 5 show that Randi's individualized instruction on skill instruction days ranged from 47 percent to 62 percent of her total verbal interactions with students.

Stage 5: Evaluation and Discussion of the Collaborative Action Research Project Along with Recommendations for a New or Continued Area of Study.

The purpose of Stage 5 was to discuss and evaluate the project. From this, recommendations were made for a continued cycle of action research.

Randi was pleased with her project and its results. She felt that she was achieving her goal of individualizing instruction to enhance students' skill development. During the postproject interview, Randi said she would like to

continue analyzing some of her discoveries (e.g., low individualized instruction on large-group game days) before going on to another cycle of action research.

> I really had not thought about another [topic]. . . because what I am trying to do is digest this and put all of this in perspective for myself. . . [I would like] to go back to this and continue to improve as a teacher and to. . . enhance these things that I already know. So that is the process that I am in right now, taking this and really trying to digest this and use it and then [when] I think I. . . really feel comfortable with this, I'll be ready to move on to something else that I would like to work on.

During the follow-up interview, approximately six weeks after the postproject interview, Randi mentioned that although she had not started a new cycle of action research, that she was interested in doing so.

> I have not at this present time developed another cycle to go into another project. However, I do plan to do so. . . I just have not at the present time. . . [It is] encouraging to me [because it] is something that I can do on my own and from this I can actually develop a plan if I see there is a problem in [my] classroom.

After Completing the Action Research Project

Randi's Teaching

As previously noted, two themes related to Randi's teaching, management of class time and individualized instruction, emerged from her preproject interviews and logs. These two themes were once again examined from postproject and follow-up interviews and log data. In addition, a search for new themes was conducted; however, no new themes emerged.

Management of class time. Randi's concern for management of class time remained consistent throughout the project. At the end of her project Randi continued to begin class by having her students participate in a walk/jog to cut back on wasted class time. She continued to have a group review to attempt to reach all students at the opening and closing of class. Randi also continued having students break up into small groups of two to four for skill development and small group games.

Individualizing instruction. Randi's goal of individualizing instruction to enhance student skill development remained consistent throughout her project. During both her postproject and follow-up interviews, Randi continued to speak about the importance of working with students one-to-one. The following quote from Randi's postproject interview typified Randi's spoken beliefs:

> One thing that I do as a physical education teacher to achieve those goals is I work with my students individually in class. Those students that I see that have problems in developing skills, I try to give them that extra attention that they need to develop their skills and those that. . . have skill already and are doing well, I try to continue to encourage them and to give them more challenges in class.

What did change, however, was Randi's view on the use of large-group games to conclude an instructional unit. During her final work session and postproject interview, Randi discussed substituting smaller-group games for the one large-group game because she felt that the one large-group game took away opportunities for working with individual students.

Expressions of Instructional Autonomy

Throughout her project, it was apparent that Randi became more conscious of her teaching practice. Randi's expressions of autonomy appeared to be classified into two major areas, planning and self-growth.

Planning. Randi expressed the view that studying her own teaching enabled her to make better educated decisions on her own when planning. In her later logs, during the last work session, and in her postproject and follow-up interviews, Randi attributed this improved sense of control over planning to the new knowledge gained about her own teaching. For example, in one of her summary logs Randi wrote:

> This week I could see clearly the pattern of individualized instruction. . . The daily log points out that I basically have a set pattern for accomplishing tasks. . . I am more aware of what I do in class now, my time, and how my time is being spent.

Randi also emphasized this point during her final work session. She claimed that her verbal interactions changed according to her lesson plans.

When reflecting on this, Randi drew several conclusions about her teaching and said that these new insights would influence her future planning because she now was more aware of the consequences of her lesson planning decisions. For example, during the postproject interview, Randi stated that she noticed that her direction-giving percentage was high on game days and that in the future she would change how she gave directions during games.

> Directions, I noticed that they are high on the days that I had games. I think that maybe if I gave more group directions that maybe could cut down on individual directions. . . I may want to look at that. . . I think I'd like to look at that because to me that's relatively high on game days, and it's down when I'm introducing a new unit to the whole group.

In a second example, Randi mentioned that when she taught class outdoors, her monitoring of social behavior was high. During the last work session Randi attributed her higher behavior monitoring to her inability to monitor closely and give individualized instruction to students when they were outdoors.

> I just noticed that on days that we are outside that I have more distractions. And let's see, [negative] behavior is usually up too. . . So it goes to show, it shows me that when I'm really monitoring students and really able to walk around and see what they are doing, it cuts down on [undesired] behavior.

Randi also stated that during future planning she would have to reconsider what she taught outdoors and how she monitored those classes.

Self-growth. A desire for continued self-growth as a teacher was an additional goal that Randi began to discuss during her postproject and follow-up interviews. During the postproject interview Randi stated that one of her goals in teaching was that she continue to learn.

During the follow-up interview, Randi resumed her discussion of self-growth. When asked about what she does to reach her goals in teaching Randi responded, "I do research to improve things within my classroom when I see there are problems."

Opinion of Collaborative Action Research as a Vehicle for Improving Instructional Practice

Randi was pleased with her collaborative action research project and enthusiastic about her new insights. She stated frequently that she enjoyed her involvement with the project and doing research on her own teaching. When asked during the postproject interview to discuss collaborative action reserach as a vehicle for improving classroom practice, Randi responded that she thought that research should be individualized and that she believed it was helpful in improving her teaching.

> I think research should be productive and something. . . that you want more insight into. . . I think that it is very helpful to teachers, well to me personally. . . It's something that we all should get involved in. . . It makes me more aware of what I need to do. And it helps my students because when I see those things that I need to improve in, they are identified, and then I can go back and set up strategies. . . which will help [students] improve their skill development. So it has been very useful. And it was also enjoyable doing. . . And it was positive. . . It accomplished what I wanted it to. I was very pleased with the outcome.

Randi learned several things from her research which she believes helped improve her teaching. One was that her individualized instruction was highest on skill instruction days. During one of her final daily logs Randi further explained this discovery:

> I find that I focus in on individualized instruction. . . and I find that is one of my strongest teaching techniques . . . This week I could see clearly the pattern of individualized instruction. Whenever we are working on skill development I have more one-on-one contact with

> the students in regards to individualized instruction. . . Students have more of an opportunity to enhance their individual skill development as they work in small groups or with partners.

Additionally, Randi learned that her individualized instruction was higher on small-group game days than on large-group game days. She learned that on skill days she had the highest percentage of individualized instruction followed by small-group game days and, conversely the lowest percentage of individualized instruction on large-group game days. During her follow-up interview Randi further explained her discovery.

> I found that on skill days that I do more individual [feedback] than on game-type days. Then, too, on game-type days I sometimes have a high percentage of individual instruction when we are in smaller groups. I notice that the day I had them working in two groups, I had less individual [feedback] then when I had them divided up into small groups, I had more individualized instruction than in large-groups. [During] large-group [games] there was not a lot of individual [instruction]. . . I like to work on their skill development and when I have them in small groups, I can really see who needs help over those that have mastered the skills.

During the postproject interview, Randi stated that one must be involved with and experience research firsthand if it is to help improve instruction.

> [Research] may be useful if you can identify it in relationship to what you are trying to do. . . otherwise it's just something else that you read. . . I like to be involved. I like to have hands on experience. And I think when. . . you have an opportunity to get out and try it yourself, you will really feel that you are involved in the [research] and you can really learn better.

A statement made by Randi during her postproject interview sums up how she felt about collaborative action reserach as a vehicle for improving practice.

> With action research you are actually involved with something that you are interested in. . . You can use it as a problem-solving thing. . . The research could help you because you can see it in black and white, actually make some type of strategy to work [the problem] out.

CHAPTER V

CASE STUDY TWO: JERRY

Jerry, a white male 39 years of age, holds two higher education degrees: a bachelor's and a master's degree in physical education; additionally, he holds a physical science teaching certificate. Jerry has been teaching for 14 years. During his first ten years of teaching Jerry taught physical science. His eleventh year of teaching was half physical science and half physical education and for the last three years, he has been teaching sixth grade physical education full-time.

During the collaborative project Jerry taught sixth grade physical education at Adams Middle School. He met his classes, approximately 25 students, 5 days a week for 45 minutes. Three days were devoted to skill development, and the remaining two days focused on improving students' fitness levels.

Prior to the Action Research Project

Jerry's Teaching

Two themes related to Jerry's teaching emerged from his preproject interview and log data. The first theme, Class Management, was related to concerns about organizational procedures and students remaining

ontask. The second theme, Student Learning, was associated with Jerry's concern that students learn the mechanics of the skills being taught.

Class management. According to his logs, Jerry was very consistent with his class organization; he rarely deviated from his set pattern. Jerry always began class with students forming a single file line outside the gymnasium doors. Jerry explained that having students in a line served several purposes: (1) reinforcing organization, (2) focusing student's minds on the task ahead, and (3) continuing a previously learned pattern. Following Jerry's signal, students entered the gymnasium and sat in their assigned seats (Jerry had a small room off the main gymnasium with four or five aisles of desks). Jerry then introduced any new material and explained the day's lesson.

During both skill development and fitness days, Jerry introduced and demonstrated the skills to be practiced that class period. Jerry referred to these introductions as the time when the students "received information" about what was expected of them. Jerry also discussed how this cut down wasted time because students knew what was expected and then acted accordingly. He explained this procedure in most of his logs. The following quote from Jerry's first logs typifies his writing on the topic of introductions.

> [I] discussed and demonstrated the correct procedures for each relay activity so the students would know exactly what was expected of them, and that it was not acceptable unless performed correctly, according to directions. There was not wasted time during the relays because the directions were stated clearly. . . and the

students did their best in performing each relay according to the directions.

After the completion of the introduction, students either participated in a timed walk/jog or were regrouped for participation. Prior to beginning each activity, Jerry re-emphasized how the drill or game would be organized and behavior expectations. Even when students were aware of the game rules and behavior expectations, Jerry did a brief review prior to having his students participate in an activity. In his logs Jerry explained that the review was beneficial because it "refreshed the student's memory, especially relating to safety practices and regulations". He wrote that this was important for sixth grade students because they responded well to a structured atmosphere and were then able to listen and stay ontask "better". Following the review, students were given the opportunity to ask questions concerning the game or activity. Students then participated in the drill or game.

At the conclusion of the class period, students were given a water break and either returned to their assigned seats or formed a line by the gymnasium exit. In his logs Jerry explained that having students leave class in a "single file line" helped them move to their next class in an organized manner. After his signal, students left the gymnasium.

During the interview, Jerry also spoke about organization. When asked to discuss what he did as a physical education teacher to achieve his goal of students learning skill mechanics, Jerry mentioned that it was important for students to pay attention to directions and stay ontask.

> I would demand [that] the students pay attention and then I would monitor them closely . . . on the field to be sure they're practicing. . . I require them to pay attention and I keep them ontask to where they're actually out there practicing what we are going over and are not offtask.

Jerry's perceptions of what one would observe during a typical physical education class also supported his concern for class management which appeared in the data presented from his logs. During the interview Jerry described his classes as well organized.

> I think you'd see good organization. . . I think you'd see close supervision, hopefully good organization. . . and somebody that monitors them closely to keep them on the task and make sure they do a good job. They know I expect a lot of them, so I think you'd see that. . . They know it's all business and they know between classes I'm their friend, but they know it's very serious during class.

Jerry also referred to class organization when discussing what he thinks about when preparing lessons. He said that he principally dealt with organization of students and equipment, and monitoring students' behavior.

> So I would say the main preparation would be organizing, making sure I've got enough equipment and the type of structure we're going to be working in out there. . . And then when we get out on the field, I'm worried more about how I monitor them and keep a close eye on them, so that they do stay on the task that we talked about.

Student learning. During the interview Jerry stated that one of his goals in teaching physical education was for students to learn the mechanics of the skills taught. He hoped that the students would then practice the skills and use them outside of class.

> I guess my main goal would be for the kids to learn the mechanics of each skill we teach because it is a skill based program. . . But really, my goal. . . would be for them to take from the class the correct mechanics so they can practice those and become skilled if they put them into practice sometime.

Jerry mentioned that providing students with feedback was important for achieving his goal of students learning the mechanics of the skills taught. Jerry said that when observing a typical physical education class, one would hear a lot of positive feedback.

> I think you'd hear a lot of positive feedback too, because I'm the type when they drop a ball,. . . I [encourage] them, [I say], you'll get another chance and go back there and try again.

Expressions of Instructional Autonomy

No clear themes related to instructional autonomy emerged from the preproject data. Jerry spent little time during the preproject interview directly discussing his self-direction or decision-making processes. Only twice was anything related to autonomy mentioned. The first reference was during his response to a question about his learning style. The second dealt with his response to a question about the type of input he expected to have during the collaborative project.

Concerning his preferred learning style, Jerry said that he would prefer to learn from master teachers. An example he gave had to do with his learning to teach field hockey. Because he did not feel comfortable with his knowledge of field hockey, he opted to team teach with another teacher who

had had competitive experience in the sport: "I'm teaming with someone and I'm watching them, but I am also out there practicing and monitoring what they're doing."

When discussing the amount of input he would like to have during his project, Jerry mentioned that he wanted the facilitator to help him define the problem, identify the strategy, and evaluate the strategy. He said that he felt he could implement the strategy himself and probably even evaluate it, but that he would like the facilitator's input in the evaluation.

> So I'm looking at it with an open mind, and anything I can learn will just be helping me for the future. . . I could teach this for twenty years, and I'd still be open as far as the help because I think you learn a lot from other people.

Opinion of Collaborative Action Research as a Vehicle for Improving Instructional Practice

Jerry appeared enthusiastic about the idea of researching his own teaching. During the preproject interview, he mentioned that he had several options for certification renewal and chose to participate in the action research option because he felt it could help improve his teaching.

> The most important thing would be improving my teaching methods. Number two would be working on certificate renewal. . . So I will get credit for it, but the reason I'm really doing it, and taking the time to do it, is I think it will make me a better teacher.

When asked about his project expectations, Jerry again emphasized that he thought it would help him become a better teacher. He further explained that it would be beneficial because he was going to focus on solving one of his instructional concerns.

> We're going to focus on an area that I feel I'm not doing really well in, and we're going to try to work on strategies and attack the problem. [We will] directly find out whether the strategy works from what we see and how the class responds. So I think it will be very beneficial in improving my instruction.

Collaborative Action Research Project

Stage 1: Identification of Instructional Concerns

During the preproject group workshop, Jerry mentioned that he felt encouraged about teaching when the students were working ontask on basic skills such as catching and throwing. He said that students were graded based upon their daily participation and whether they "stayed ontask". Additionally, he said he felt frustrated when students came into his sixth grade physical education class and did not expect instruction.

To achieve his goals, Jerry said that he had a "set pattern" for class: how students entered and exited the gym, where they sat, and the way in which he introduced new materials and the day's lesson to the students. One of his teaching concerns was gaining students' attention at the start of class for a "quick introduction" to new materials and the day's lesson.

Stage 2: Development of a plan of action.

After the group workshop a follow-up work session was scheduled, during which Jerry and the facilitator continued to discuss his concerns. Jerry mentioned that he had timed his introductions on his own and found that they were "two, three minutes, max". He was interested in improving how

he motivated students to settle down quickly for the introduction. Additionally, Jerry wanted to look at how the time at the beginning of class affected the time students were actively engaged in motor activities. The facilitator then suggested that they develop a profile of the percentage of class time in which students received information and in which they were actively engaged in motor activities.

After the discussion, Jerry decided that he would like the facilitator to code four class periods. They agreed to develop the profiles using his second period class because it satisfied both Jerry's and the facilitator's time schedules. The facilitator recommended a coding tool from Anderson (1980) that focused on the following student behaviors: (a) performs motor activity, (b) receives information, (c) gives information, (d) waits, (e) relocates and (f) other. See Appendix C for Jerry's coding tool.

The performs motor activity category described a student who was actively engaged in an assigned motor task. The receives information category was associated with a student listening to the teacher or watching a demonstration. The gives information category described a student talking to another student or the teacher about the material being covered in class. The wait category was associated with a student who was not engaged in motor activity and was waiting to participate. The relocates category described a student moving from one place to another. The other category was defined as a student engaged in an activity other than those mentioned above.

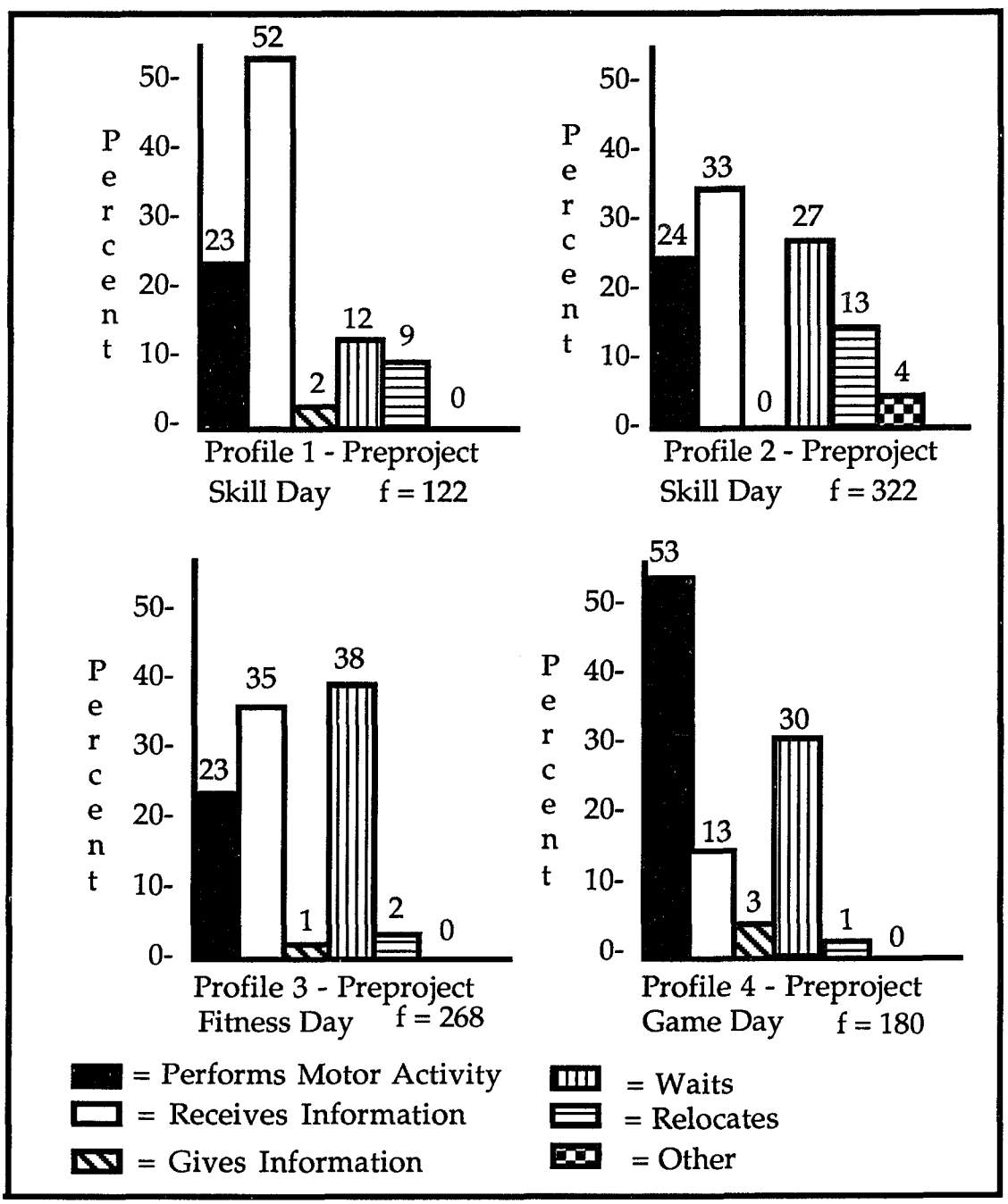
Jerry decided to have the facilitator code four students: two whom he considered high skilled (one male and one female), and two low skilled (one male and one female). Four observations were scheduled (Table 2).

Table 2
Preproject Coding Schedule for Jerry

DATE	LESSON CONTENT
11/30/88	Field Hockey Skills
12/5/88	Field Hockey Skills
12/9/88	Fitness Relays
12/13/88	Four Square Striking Game

After each coded observation, percentages of time in each category were determined by the facilitator. The tallies in each category for each students were divided by the total number collected for the student over the six categories to derive percentages. At the conclusion of the four observations a second work session was scheduled in order to discuss the preproject observations and to plan the action for his project. Figure 2 provides graphic profiles of Jerry's coded classes.

Figure 2
Preproject Coded Classes for Jerry



Jerry decided he needed to decrease the amount of time students received information and waited, and increase the amount of time they

actively engaged in motor activities. His plan of action included (1) cutting down the amount of time he spent giving the introduction, (2) cutting down on the time and amount of information given between tasks by having the students go directly from one task to the next without re-explaining the task and behavioral expectations and, (3) monitoring by going from group to group, giving verbal feedback to small groups and individual students as opposed to the entire class.

Stage 3: Implementation

Jerry began consciously attending to how he organized and spent class time immediately following the work session. He made special efforts to cut down on preliminary introductions to the class. He also concentrated on reducing transition and wait times by not repeating his directions after students re-grouped. By mid-January Jerry felt comfortable with the changes and arranged for the facilitator to code three classes to develop his postproject profiles. Table 3 provides a schedule of Jerry's coded observations after implementation.

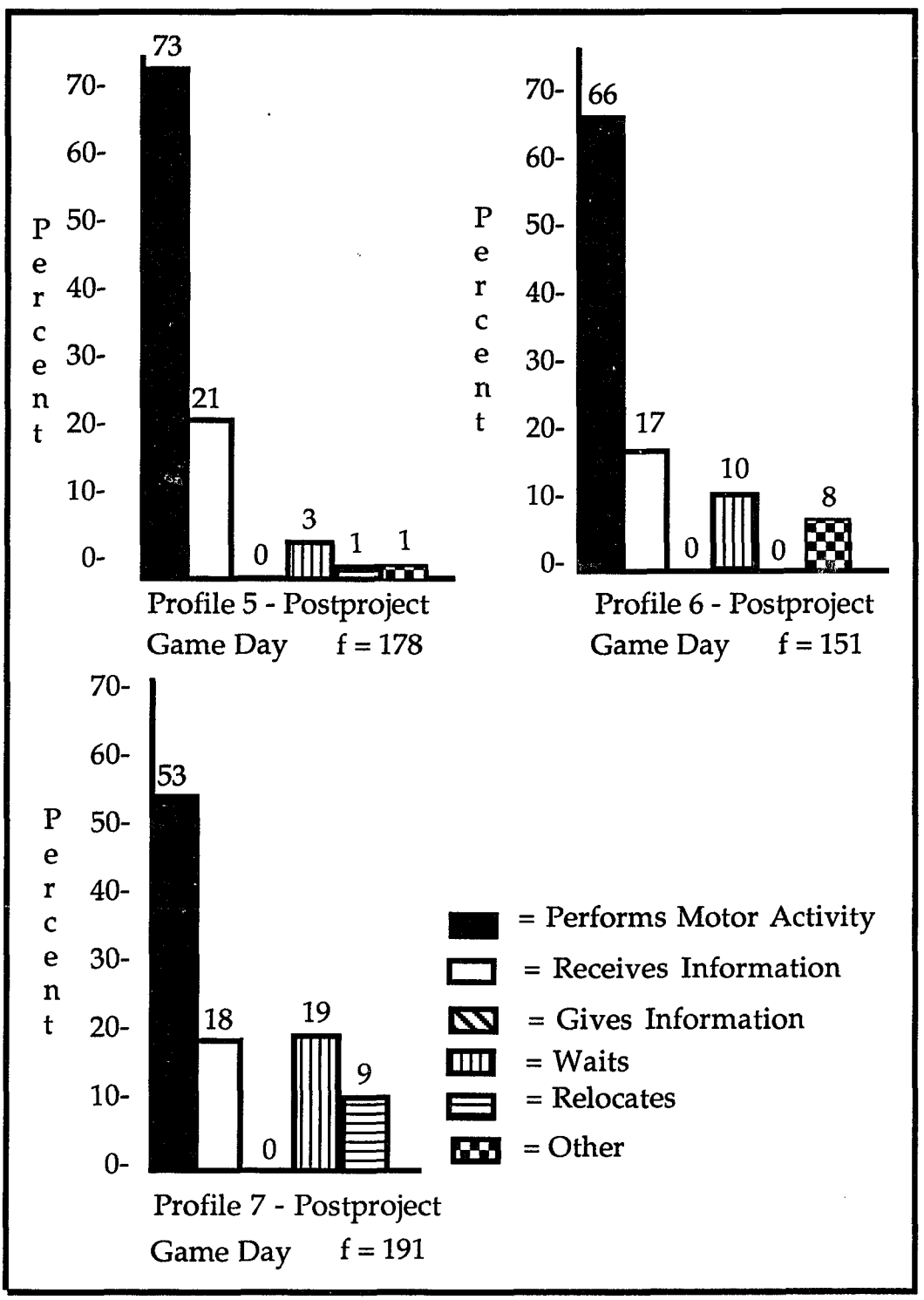
Table 3
Postproject Coding Schedule for Jerry

DATE	LESSON CONTENT
1/26/89	Small Group Field Hockey Games
1/27/89	Four Square Game
2/7/89	Four Square Game

After each coded observation, percentages of time in each category were determined by the facilitator. Following the last observation, a third work session was scheduled to discuss the implementation and project results.

From his postproject profiles (figure 3) Jerry learned that students now spent between 53 percent and 73 percent of their class time actively engaged in motor activities. He also discovered that he had reduced the time students spent receiving information and waiting to between 24 percent and 37 percent. Unfortunately, all postimplementation observations were during game days. Prior to the implementation, game days had the highest percentage of time in the category performs motor activity; however, this percentage continued to increase from 53 percent preimplementation to 73 percent during post-implementation observations.

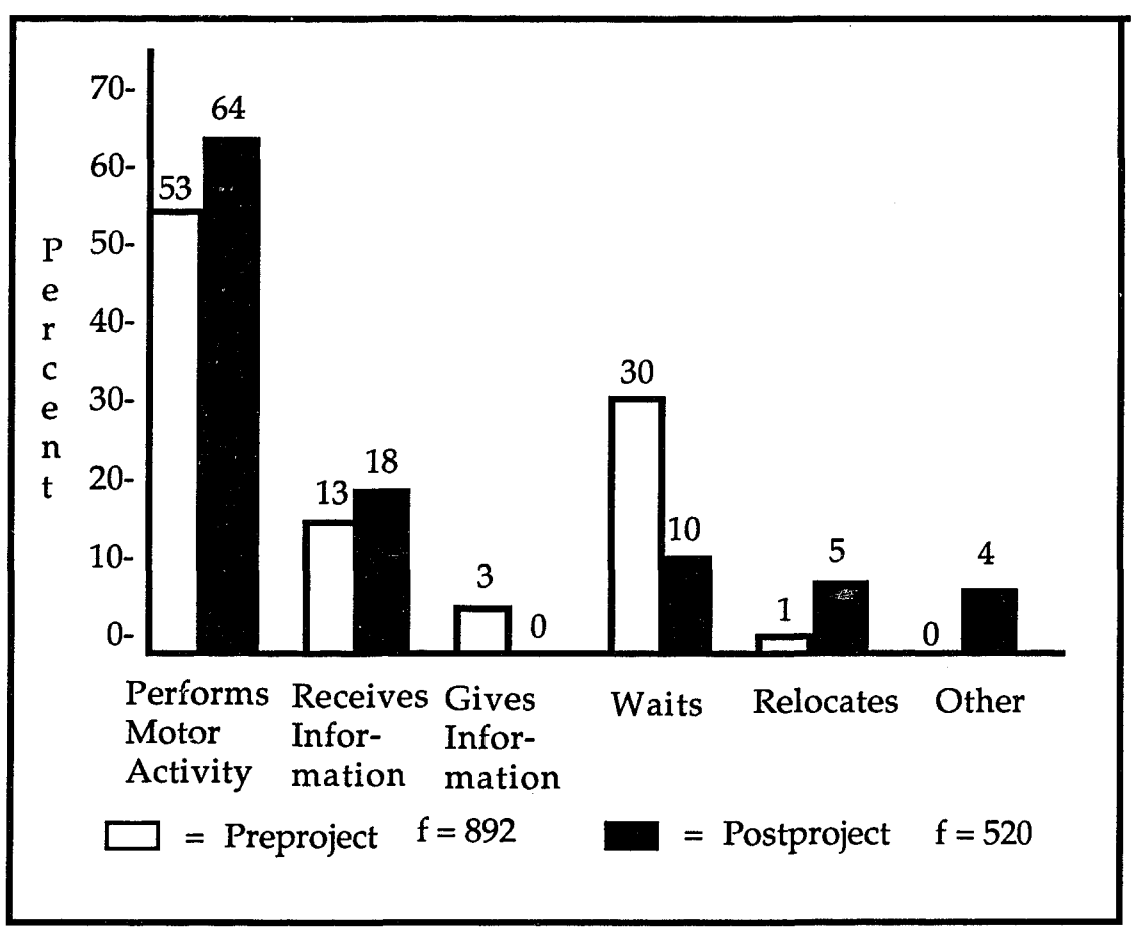
Figure 3
Postproject Coded Classes for Jerry



Stage 4: Discussion and Analysis of the Results of the Project

During the final work session Jerry identified specific successes and failures of his project. The coding revealed that Jerry's perceptions were correct: the amount of time the students waited decreased and the amount of time students performed motor activities increased. Figure 4 provides a graphic profile of the mean changes in Jerry's students' profiles on game days.

Figure 4
Mean Game Day Student Behaviors Pre- and Postproject for Jerry



Jerry discovered that after implementation the amount of time students spent performing motor activities on game days increased 11 percent (from 53% to 64%) and the proportion of time students waited decreased by 20 percent (from 30% to 10%). Jerry also learned that amount of time students received information increased by 5 percent (from 13% to 18%) and the proportion of time students spent relocating increased by 4 percent (from 1% to 5%).

The postimplementation data came only from "games" as opposed to the preproject data which came from a combination of games, fitness activities, and skill development lessons. Jerry used only games during post-implementation coding because he felt that games were the best way to increase activity time for students. There may have been a trade-off of skill development for game play rather than actual changes in Jerry's teaching.

Stage 5: Discussion and Evaluation of the Collaborative Action Research Project Along with Recommendations for a New or Continued Area of Study

Jerry was enthusiastic about his project results. He felt he had accomplished his goal of increasing motor activity time and decreasing the amount of time students waited. During the final work session Jerry said he felt the implementation worked well because his lessons were more effective after implementation in that students had more activity time.

> the lesson was just as valuable as it was the other way and more valuable because they had more active time. . . I thought [the implementation] worked well because it did increase

> activity time, but I did not eliminate input because I let them stay active and I walked around from group to group and [gave them] the input.

During the postproject and follow-up interviews, Jerry explained that by carefully monitoring each group's activities he could give the same amount of information he did when he had students sitting together in one group. He further explained that this helped him reduce the amount of inactive time for students. During the postproject interview, Jerry said this type of monitoring required a lot more effort than what he had done previously. However, because he was pleased with the results, he decided to continue monitoring the new way.

> I found that it requires a lot more effort by the teacher to do it [this] way, a lot more energy. It really does because you have to move around and give a lot more input to make up for what you would have done in the [classroom] with them sitting. But I liked the result of it, so I've been sticking with it. . . And now I start them ultra quick, but then I [still] get in what I meant to get in in the classroom as I walk around.

When discussing a new cycle of action research during the final work session, Jerry mentioned that now that he had reduced the amount of time students inactively received information, he would like to look at the type of information he gave to students. He said he was weak in that area; he felt he tended to be positive but vague when giving students skill feedback.

> I'd like to look at the type of input I give [students] because I still feel like I'm a little weak in that. I do a lot more [general feedback]: good try, try again, vague input, and I need to be a little bit more specific on that [because]. . . they go hand in hand, you could increase your motor time and also improve the quality of your feedback or input.

After Completing the Action Research Project

Jerry's Teaching

In examining Jerry's perceptions of various aspects of his teaching, the two themes, class management and student learning, were once again examined from the postproject and follow-up interviews and log data. In addition, fitness, was identified as a new theme.

Class Management. Jerry's concern about organizational procedures and students staying ontask remained consistent throughout his project. He again explained that having structure kept order and helped the students understand teacher expectations. However, a few of his organizational patterns did change during his participation in the research project.

For example, as he began his implementation, he changed how he started class. During implementation he had students begin class with a jog/walk as opposed to having them come into the gymnasium and sit in their assigned seats. In one of his logs during implementation, Jerry explained that he now started class with the walk/jog because it helped focus the students' attention on class and helped eliminate offtask behavior, which he associated with the beginning of class.

Jerry's logs showed that he continued to introduce and demonstrate the skills to be practiced prior to students' participation. He also continued to believe that these practices were important to help the class "focus" and to "remind them" of behavioral expectations.

> [A] brief review of safety practices and teacher expectations of sportsmanship and behavior helps refresh students' memories of the TASK on hand and definitely enhances ON-TASK participation. I have noticed much more off-task behavior when we don't take a couple of minutes for a brief review.

Jerry mentioned, however, that he made "special efforts" to decrease the percentage of time and frequency of his introduction to new materials and the day's lesson.

What also changed, according to Jerry's logs, was what happened after students regrouped and relocated for participation. Prior to beginning his project, Jerry had emphasized how the drill was to be organized and his expectations for student behavior immediately following student regrouping and or relocation. During his project, however, Jerry had students begin the activities immediately following reorganization or relocation.

Jerry additionally changed how he monitored students. Jerry now moved from group to group providing feedback to individuals as well as small groups. In one of his implementation logs Jerry explained that this new monitoring pattern helped improve his students' ontask time.

> Close monitoring and supervision of participants (monitoring from one game area to another) has resulted in improved on-task time and skill level for most participants. More one-on-one help [for] students still "struggling" and not exhibiting observable improvements has helped. . . I feel like I'm really cutting down on "wasted time" as a result of the [implementation].

During the postproject interview, Jerry also explained his new monitoring strategies. He mentioned that someone observing one of his

classes would see a teacher who clearly stated objectives and rotated several times a period between groups to give students input and feedback.

> You would see clearly stated objectives. . . You would also see [students] well disciplined because that's so important. If they are not disciplined they do not stay ontask. And I talk about ontask a lot, they hear that so much. . . And [you would see me] going over safety and what I expect from them as far as behavior as I move from group to group; I do a lot of group monitoring.

After completing the project Jerry made no mention of class management or organization when discussing what he thought about when planning lessons. Additionally, he did not mention these as goals in teaching. Jerry did, however, frequently refer to how the collaborative action research project helped him change his class organization. The following quote from one of his logs summarizes his statements.

> This collaborative research project has helped me in increasing activity time (my project goal) and stimulating [activity during] non-activity time. Student ontask time has greatly increased as I have improved my introduction time and transitions - made them quicker.

Student Learning. During both the postproject and follow-up interviews, Jerry mentioned that his main goal in teaching was for his students to learn the mechanics of the skills taught. The following quote from Jerry's postproject interview expresses this stated goal:

> My goal would be to teach the kids the mechanics of the basic skills so that they can practice them in class and hopefully when they are not in school. . . I'm trying to give them the skills so they will know what to practice, the correct way to throw, catch, strike and that

> kind of thing, so they can take that and use that at school and out of school.

Jerry discussed how he accomplished this goal. First, he demonstrated the proper mechanics of the skills to be practiced. Then he gave students time to practice the skills and provided them with feedback on their skill development. Jerry said that when he felt the students' skills were advanced enough, he placed them in game situations.

Fitness. A third theme, not found in the preproject data, emerged from the postproject and follow-up interviews. Jerry mentioned several times that increasing students' fitness level and teaching students fitness concepts were a second goal. The following quote from his postproject interview is an example of Jerry's stated goals:

> I'm also trying to instill the fitness concept. We do a couple of days a week on that so hopefully, again, they will carry that over out of school when they graduate and are in the work world. [The goals is to]. . . improve their attitudes about fitness, how important it is to be fit as far as functioning in any type of job, and to keep their heart rate up over an extended period of time.

Jerry mentioned that students participated in a jog/walk on a daily basis and had two "fitness days" per week. He discussed keeping students heart rates up for an extended period of time as the goal for the fitness days. He further explained:

> We test them in the fall and spring to be sure that they have made progress. And if they participate twice a week in fitness they are going to make progress. We take resting pulse and then we take their active pulse at the end of the

> period and we look at the difference between the two. And we look at the recovery rates. . . We do a lot of jogging, we also do a lot of jump rope, fitness stations like stationary bicycle. We take a lot of fitness measurements like sit and reach and skin caliber measurements. And games, anything to keep their heart rates up over a period of time. . . I guess we also do a lot of relays which are good for fitness too.

Expressions of Instructional Autonomy

The data related to Jerry's instructional autonomy appeared in three themes during and after completing his project: preferred learning style, input into his project, and reflection. Autonomy related to preferred learning style was associated with Jerry's stated interest in learning from other more experienced teachers as well as working with and learning from his facilitator. Autonomy related to reflection was associated with Jerry's experiences reflecting as a result of log writing.

Preferred learning style. Jerry's sense of autonomy was best exemplified by his use of a learning style which remained consistent throughout the project. Prior to beginning his project Jerry spoke about observing and teaming-up with other teachers to increase his knowledge of a sport or activity. During the postproject interview Jerry continued to speak about teaming-up with more knowledgeable teachers when learning something new or expanding his knowledge base.

> Like [Dee], she's been working with my sixth period class on tumbling. And even though I can teach that, I usually sit there and watch her to get a different view of how she teaches it. And then I take my notes and go right into my next class and try to do what I saw. . . I always

> get something out of watching somebody [teach]. . . [If] I change my mind, which I do a lot, and do it like someone else, I try and see if I'm successful with it. And if [the students] seem to be making more progress the way someone else is doing it, I'll easily make the switch, that doesn't give me a problem. . .

Input into his project. When discussing the amount of input he felt he had during various stages of the collaborative project, Jerry mentioned that he and the facilitator shared responsibility for the project. He felt he had the larger percentage of input when identifying a concern and implementing the project. He felt that the facilitator had the greater percentage of input during data collection. As the conversation continued, Jerry spoke about the idea of doing action research alone, without a facilitator. He mentioned that he believed he could do research alone, but his preference would be to have a facilitator. He said having input from a facilitator was beneficial. This desire to learn from others is similar to his stated preference prior to beginning the project.

> I think I could do [research] alone. But honestly, I don't think it would be as effective as it would be with another person because [the facilitator] has got a lot he can offer because he's been through it and he's done a lot of research, and he's seen the effects of it with students. I could do research and improve myself, but I don't think it would be as effective as working with [a facilitator].

Reflection. Jerry indirectly alluded to an increase in his self-direction when he discussed writing logs and its effect on his teaching. He mentioned in the postproject interview, and in his later logs, that writing the logs helped him to reflect on his actions when planning and teaching. He implied that reflection was something that he did not do as much prior to beginning his

project. The following quote from Jerry's follow-up interview is an example of Jerry's stated beliefs about the benefit of log writing:

> Well, on the light side, I thought the logs would be a real pain but they weren't. . . I think the logs really helped me. . . .having to exactly log each day what I was doing made me reflect on every step [I took]. . . So everything I wrote in the log I questioned, was it valid, did it waste time, was it really needed, was it purposeful? And so I think [writing the logs] had a major effect on my teaching. If I hadn't done my part with writing the logs, I think I would have wasted a lot more class time because [the log writing] really made me think through what I was doing, like I said, more reflective on everything I did from the first minute [of class] to the last minute. . . So I think the [logs] made a big difference in my teaching.

Opinion of Collaborative Action Research as a Vehicle for Improving Instructional Practice

During and after completing the project, Jerry continued to appear enthusiastic about the idea of doing action research to improve his instruction. He stated frequently that his project accomplished what he had hoped it would, by increasing activity time, and decreasing the amount of lecture time, especially at the beginning of class. The following statement from one of Jerry's final logs represents his written comments about how collaborative action research helped improve his teaching:

> This collaborative research project has helped me in increasing activity time (my project goal). . . Student ontask time has greatly increased as I have improved my transitions from one lesson step to another. . . This collaborative research project makes me more reflective about my teaching. It makes me consider the value (validity) of everything I do, which in turn eliminates any steps in my lessons that aren't truly

> necessary. I feel like I'm really cutting down on "wasted time" as a result of the research project. The result is more efficient and constructive use of the short time we actually have to spend with each class per day.

During the postproject and follow-up interviews, Jerry continued to reiterate similar sentiments about how action research helped improve his teaching. Again, he claimed that as a result of the implementation he was able to increase student ontask active time, which was relatively low prior to beginning the project. Jerry also expressed a desire to continue teaching with the strategies used during implementation because he was pleased with the changes and improvement in his teaching.

> It helped me; it helped improve [my teaching] because what I did was I shifted parts of my lesson and I designed them differently [so] I got everything in but I kept their active time way up. Their activity time was down before we started this. . . It's something that I'm going to do, like I said, from now on because it really changed my whole idea about how I bring them in, sit them down, and go over the lesson, which I thought was vital to keep them ontask. What I have found is that I can do the same thing as they are active and moving around and then you increase their active time which increases their fitness and skills because they are practicing their skills more minutes per period.

Jerry believed that research as a tool helps improve instruction however; it is more effective if one is involved with it directly, as in action research.

> I think research definitely improves instruction. I think that's a definite, no doubt about it. I just think it's stronger if you're working with a person. . . I think it's more effective if it's with people. . . than it would be from reading research and

> trying to apply it. . . You could read research and it could help you and you could try to apply it. . . but I don't think that's as effective as the way [we] did this.

The following excerpt from Jerry's follow-up interview highlighted his perceptions about collaborative action research as a vehicle for improving instructional practice.

> I think it's important to know that [action research] works because a lot of people are involved in research and there seem to be questions as to whether it's really worth doing. And I think in my situation, at least with me, this action research project proved that it was. I think there is a definite correlation between action research and [improvement of] instruction.

CHAPTER VI

CASE STUDY THREE: TONY

Tony, a black male 38 years of age, holds a bachelor's degree in physical education. This is Tony's first year as a full-time physical education teacher. For the past seven years Tony was a teacher's aid in physical education; prior to that, he was a substitute teacher.

During the collaborative project Tony taught sixth grade physical education at Jefferson Middle School. He met with his classes of approximately 22 students, 5 days a week for 45 minutes. Three days were devoted to skill development and the remaining two days focused on improving students' fitness levels.

Prior to the Action Research Project

Tony's Teaching

Four themes related to Tony's teaching emerged from his preproject interview and log data. The first was theme, Self-growth, evidenced by Tony's expressed desire to continue learning and growing as a teacher. The second theme, Relationships with Students, was Tony's stated desire to maintain contact with students beyond the classroom. The third theme was, Individualized Development, demonstrated by Tony's interest in helping

every student individually to develop physically and affectively. Class Management, the fourth theme was concerned with Tony's organizational procedures and management of class activities.

Self-growth. A desire for growth as a teacher was a personal goal discussed by Tony during his preproject interview. One way to improve himself as a teacher, he suggested, would be to enroll in a program of study at the master's level. Although Tony had no current plans to attend graduate school, he said he would like to enroll in the near future. Tony was especially interested in "keeping up" with what is new in the field of physical education and sharing ideas with other teachers through workshops, conferences, and staff development programs.

> My first goal. . . is to be the best that I can be. Another goal of mine is to continue to improve myself, educationally. To try to become a better physical education teacher by experimenting with different programs and [teaching children at] different age levels. In order to achieve my goals, I feel like I should enlist or enroll in a good master's program, attend workshops in different areas of physical education, read periodicals,. . . join different associations in physical education,. . . go to physical education staff development programs, see what other physical educators are doing, and try to exchange ideas [with other teachers].

Relationships with students. During the preproject interview, Tony expressed an interest in being involved in the lives of his students outside the gymnasium. Tony said he enjoyed "keeping up" with his students after

they left school. His interest appeared to be centered around his students' continued participation in activities such as community sports programs.

> I like to deal with the older students, not only on a teacher level but also, outside of the school, in outside activities, [I] try to follow-up on what they are doing, see what has been learned, if they [go on] to other programs in the community like the YMCA or recreation leagues. And I also like to keep in touch with my kids to see how they are doing once they reach high school, that sort of thing.

Individualized development. Tony expressed an interest in helping all students develop both physically and affectively. Many students at the sixth grade level come in with low skill levels he said, and in order to develop higher level skills and confidence in their abilities that they should be placed in "game-type" situations as opposed to playing "the game". Tony began a skill unit by introducing the basic skills. Students practiced these skills in small-group "drill-type" situations. When Tony thought the students were skilled enough, he placed them in "lead-up-type" game situations.

> When students are involved in sports activities at this age level, I believe that lead up games that involve the skills of the sport should be taught instead of trying to engage students directly in the game, like basketball. Lead up games can be a confidence builder for students who are not ready to play the actual sport.

During his preproject interview, Tony said that frequently there are one or two students in a class who need extra attention given to their skill development, and that he would like to be able to help these students individually.

> I have 20 to 24 students in my class and I know that there are one or two students that need my special attention or special help. I feel like I should be able to give this student that special time. I should really go over to that student and give them that time regardless of how many students I have in the class.

Tony additionally mentioned that helping students individually went beyond working with them on skills, that it included helping students build their self-esteem. He believed that part of his job as a teacher was to help students feel as if they belong and can accomplish everything they set out to learn in physical education class. Tony's interests seemed to be focused toward his lower skilled students.

> to try to help a student motivate himself. . . to help build up a students self-esteem. . . to help the lower skilled student feel as if he is getting something out of physical education and that he belongs to the group, that he has a major part in the group, even if he is low skilled.

Class Management. Although Tony felt he had a well disciplined class, many of his discussions focused on maintaining good discipline and class organization.

> I feel my number one priority is discipline, because if you don't have it, forget it. Some kids just, I hate to say the word, like to have an overseer, someone to stand over them and to observe them. If you leave them it's like they just quit playing.

During the preproject interview, Tony discussed what one would observe during a typical physical education class. He spent most of that time talking about how his students would behave. The only time he referred to

the way he functioned as a teacher was when he described his review session at the end of class.

> You will see a class waiting very patiently for my directions. You will see a class acting well as far as rules and regulations go. You would see a really obedient class. You would see them line up in squads. You would see a basic warm-up If there is a review that is needed, you would see a review of the previous lesson. Then you will see the start of today's lesson. You would see the kids given the opportunity to ask questions, if they had any. You would see that equipment is handed out in an orderly fashion. . . To bring the lesson to a close I will bring all students inward so they can hear me for good closure or a quick review of what went on.

Tony appeared especially concerned about class procedures; he rarely strayed from a set pattern. According to his logs, Tony always began class with students sitting in squads as he took attendance. Following attendance, students performed a group warm-up, after which Tony introduced the day's lesson. When appropriate, the introduction was augmented with a teacher or teacher-student demonstration. Following the introduction, students performed the assigned tasks. At the conclusion of class, Tony reviewed the lesson by asking students questions about the day's activities.

Expressions of Instructional Autonomy

Prior to beginning his project, Tony made only two references to instructional autonomy. The first reference focused on his preferred learning style. Tony seemed to be very confident of his ability to learn new material.

He said he knew he would make mistakes during the learning process, but he did not mind that because that was part of the process.

> since it's new to me, I will sort of make mistakes along the way. . . I would feel comfortable because I know that I might make mistakes, but once I'm finished, I could go back and learn what I missed and try again the next day to correct those mistakes. I would concentrate heavily on the those aspects that I had not yet mastered and I would try to better myself in those areas.

The second reference to autonomy was made when Tony discussed his expectations for the collaborative action research project; he hoped that the facilitator would challenge his thinking.

> I would like the facilitator to be critical in a way that would be helpful to me, to feel free to express his ideas. . . To ask me questions about why I am doing what I am doing.

Opinion of Collaborative Action Research as a Vehicle for Improving Instructional Practice

Tony spent little time discussing action research as a vehicle for improving instruction prior to beginning his project. He did, however, appear enthusiastic about doing research on his own teaching. This would benefit his teaching because it would give him an opportunity to be exposed to new ideas.

> I like the idea of doing research. I feel like it's going to be beneficial because I will be researching something that I would like to work on. . . it will help to improve my teaching. . . It will probably help me with thing that I'm not doing right. . . Also, I feel like the research would be beneficial in the sense that it will give me other ideas and opinions on. . . how to do certain tasks, which I am very open to.

Collaborative Action Research Project

Stage 1: Identification of Instructional Concerns

During the preproject group workshop, Tony expressed concern about students in his class who needed extra attention, and that he did not spend enough time with them. He felt he should give at least five minutes to work with these students individually. This was directly related to the individualized development theme that emerged from the preproject data. Tony was especially concerned about the type and amount of interaction he had with two learning disabled (LD) students in his second period class. At the conclusion of the workshop Tony stated that he was interested in studying his interactions with these two students.

Stage 2: Development of a Plan of Action

After the completion of the group workshop, a follow-up work session was scheduled for Tony and the facilitator. During this work session, Tony decided to do an exploratory collaborative action research project which would help him discover the amount and kind of interactions he had with two LD students. After the discussion, Tony decided to compare his interactions with these two students to those with the rest of the class.

Tony asked the facilitator to code four classes, using a coding tool developed by the facilitator, which allowed examination of teacher interactions with individual students as well as with the entire class. See Appendix C for Tony's coding tool. The tool included tallying the following

verbal interactions; (a) praise, (b) questions, (c) directions, (d) skill feedback, and (5) reprimand.

Praise related to the teacher's providing students with general positive encouragement. Questions pertained to the teacher's posing a question which solicits a response from a student. Directions was associated with the teacher's providing information unrelated to a movement concept or performance of a motor skill. Skill feedback was associated with the teacher's providing information related to a motor performance, with the intent that the student learn. Reprimand pertained to the teacher's efforts to modify or change inappropriate gymnasium behavior.

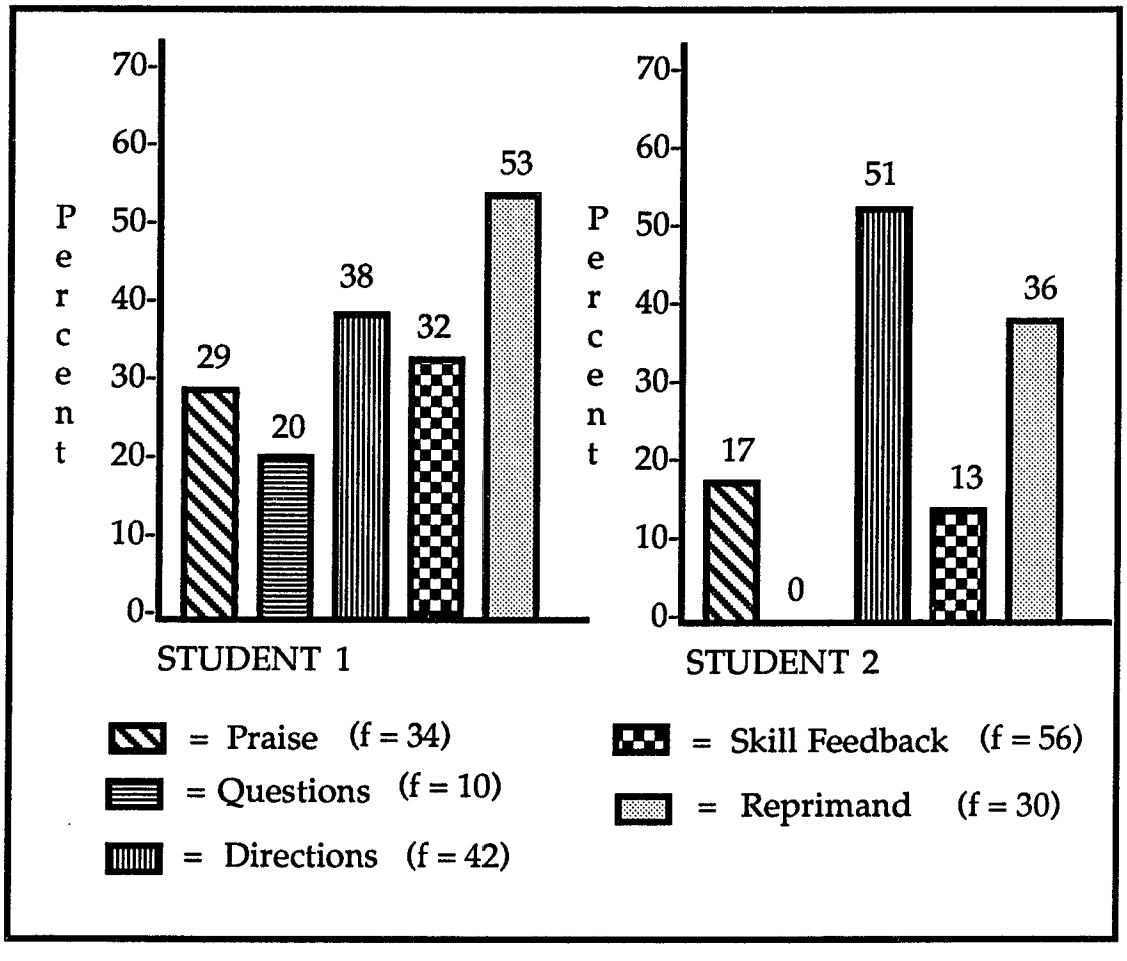
Following the Stage 2 work session, the facilitator began coding Tony's verbal interactions during his second period class. Table 4 provides a schedule of coded classes and their content. Certain shifts were made in the original coding schedule because of school holidays and the facilitator's schedule.

Table 4
Preproject Coding Schedule for Tony

DATE	LESSON CONTENT
11/21/88	Basketball Passing Skills
11/28/88	Basketball Shooting Skills
12/02/88	Basketball Skills
12/09/88	Basketball Skills

Following the coded class, tally totals for each student for each category were derived and then divided by the total number of interactions in each category for the whole class. This provided a comparison of the interactions with the two LD student with those with the whole class. At the conclusion of the four observations a second work session was scheduled in order for Tony and the facilitator to discuss the coded observations. Figure 5 provides graphic profiles of Tony's coded interactions with the two LD students.

Figure 5
Preproject Percentage of Total Interactions with Two Target Students



Tony's data revealed that (a) 29 percent of all praise given during class was given to student one and 17 percent was given to student two, (b) 20 percent of all questions were directed to student one and none to student two, (c) 38 percent of all directions were given to student one and 51 percent were given to student two, (d) 32 percent of all skill feedback was given to student one and 13 percent given to student two, and (e) 53 percent of all reprimands were directed at student one and 36 percent to student two. After reviewing the data, Tony decided that he needed to spend more time giving skill feedback, especially to student one who was lower skilled than student two.

Stage 3: Implementation

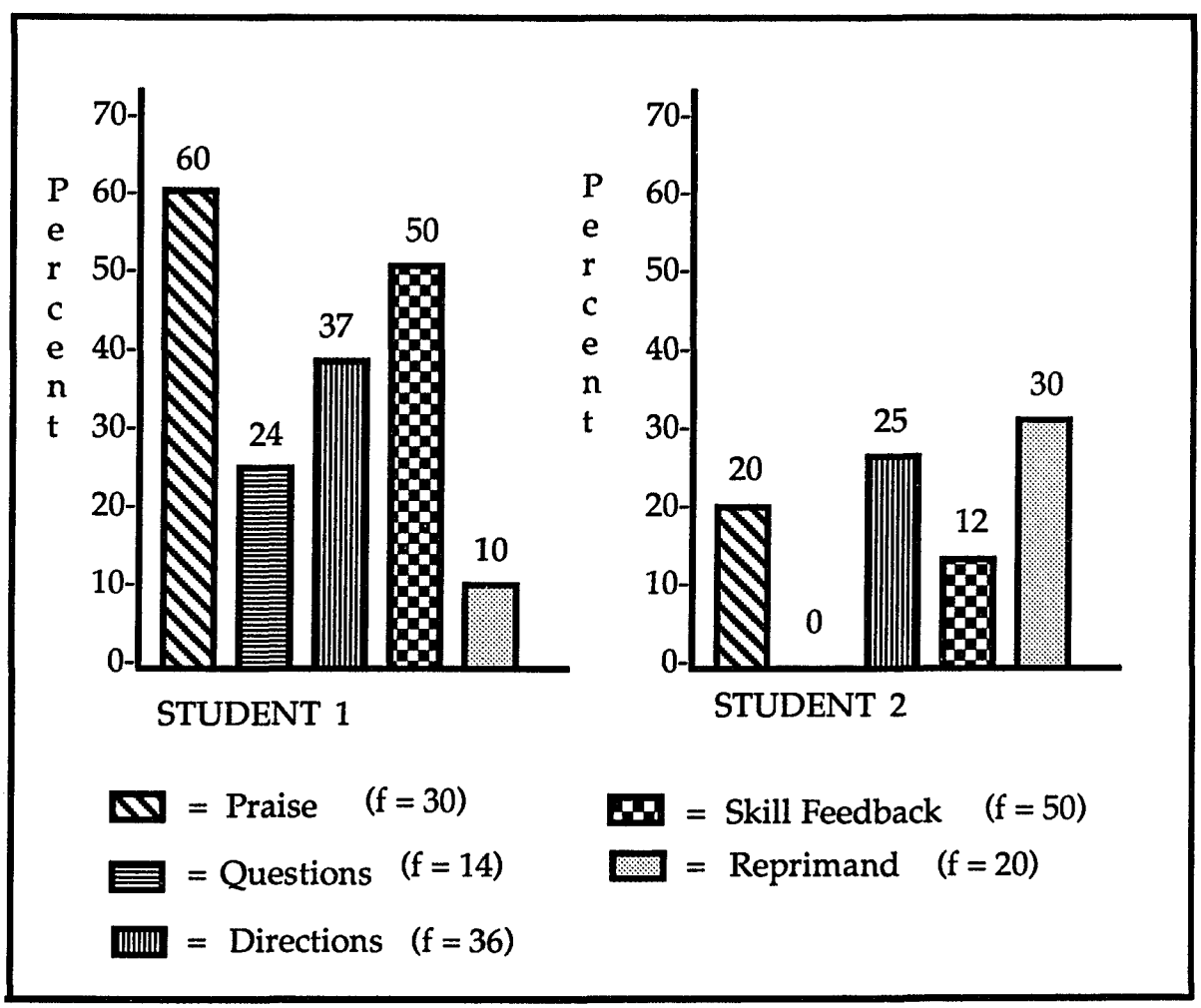
Immediately following his review of the preproject data, Tony began consciously attending to the type of interactions he had with the two students. He made a distinct effort to increase his skill feedback to student one. He also concentrated on increasing the amount of praise given to both students. Post-project observations were scheduled for late January in order to give Tony the time necessary to change his interactions with the two students. Table 5 provides a schedule of coded observations after the project.

Table 5
Postproject Coding Schedule for Tony

DATE	LESSON CONTENT
1/17/89	Individual Instruction - one student
1/24/89	Basketball Game
1/31/89	Basketball Game
2/13/89	Basketball Game

After the coded classes, tally totals were determined. Figure 6 provides a graphic display of Tony's postimplementation coded observations.

Figure 6 Postproject Percentage of Total Interactions with Two Target Students

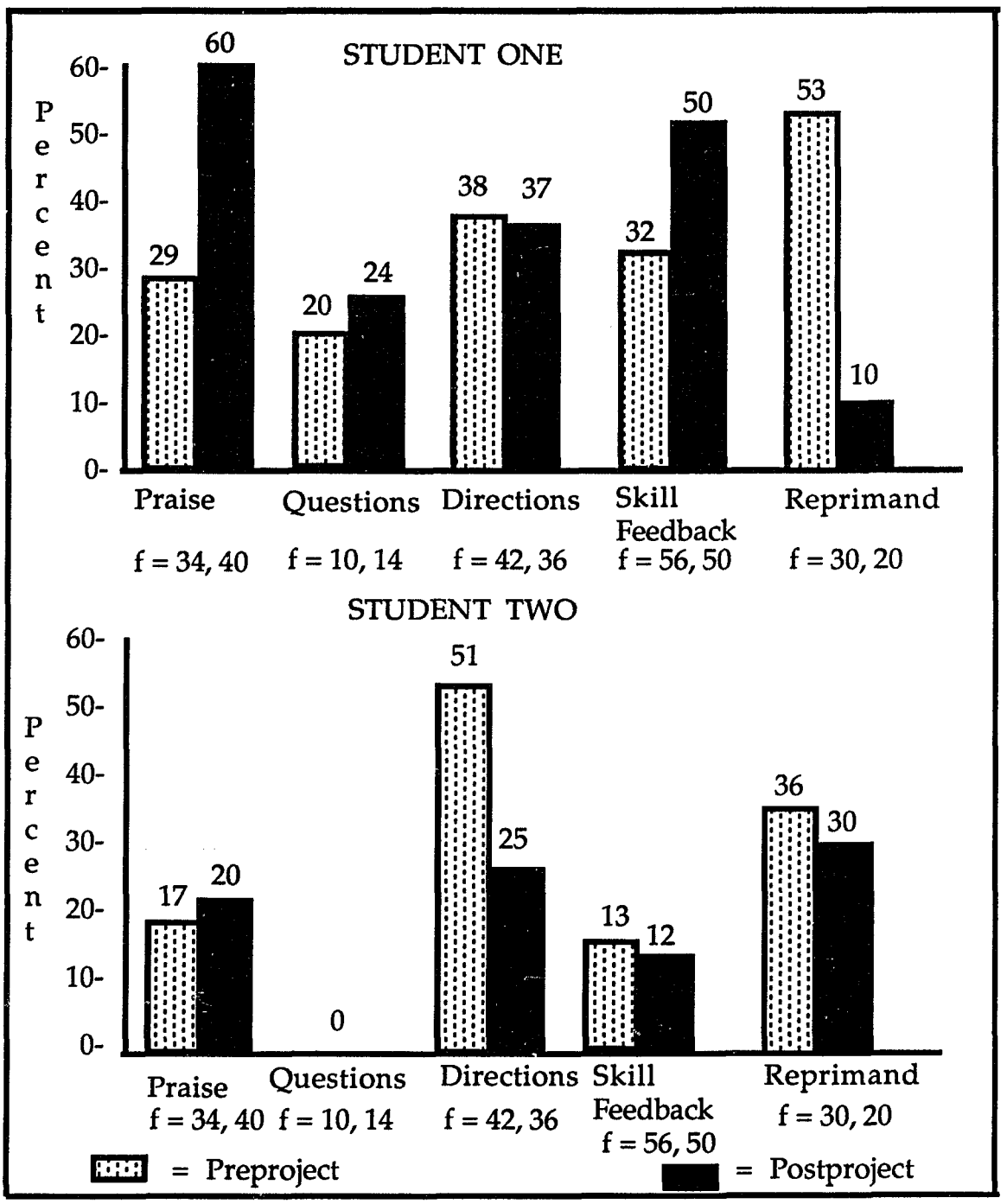


From the data Tony learned that (a) 60 percent of all praise given during instruction was given to student one and 20 percent was given to student two, (b) 24 percent of all questions were directed to student one and none to student two, (c) 37 percent of all directions were given to student one and 25 percent to student two, (d) 50 percent of all skill feedback was directed to student one and 12 percent to student two, and (e) 10 percent of all reprimands were directed toward student one and 30 percent toward student two.

Stage 4: Discussion and Analysis of the Results of the Project

During Stage 4, Tony and the facilitator discussed the results of the project. Figure 7 provides a graphic display of Tony's mean interactions pre- and postproject for student one and student two. The findings revealed that for student one, Tony accomplished his goal of increasing skill feedback. Skill feedback increased by 18 percent from 32 percent to 50 percent. However, in looking at the skill feedback for student two, there was a decrease of 1 percent from 13 percent to 12 percent. Tony also accomplished his goal of increasing praise to student one. Praise increased by 31 percent from 29 percent to 60 percent. However, in looking at praise for student two there was only an increment of 3 percent from 17 percent to 20 percent. The percentage of time directed toward reprimand dropped for both students. For student one, it decreased 43 percent from 53 percent to 10 percent. For student two, reprimand dropped 6 percent from 36 percent to 30 percent.

Figure 7
Pre- and Postproject Interactions with Two Target Students.



The coding also revealed that for student two, Tony decreased directions by 26 percent from 51 percent to 25 percent. There was, however, only a 1 percent change for student one, from 38 percent to 37 percent. Finally, the results of the study revealed that there was only a 4 percent increase from 20 percent to 24 percent in the percentage of time directed towards questions for students one and no change for student two. Student two received no question pre- or postproject.

Stage 5: Evaluation and Discussion of the Collaborative Action Research Project Along With Recommendations for a New or Continued Area of Study.

Tony appeared satisfied with his project. He felt that as a result of changing some of his interactions with the designated students, he was more effective in working with them, especially with the lower skilled student. Tony explained this during the postproject interview.

> I wasn't really interacting with them the way I should have been compared to other students in the class. And I know [the lower skilled] one definitely needed more help. So my project centered around. . . giving these kids instructional feedback, keeping them ontask and just interacting with them. And my research project, the way it came out, I found myself coming out more and reaching these kids, increasing the percentage of time that I talked to them and tried skill corrections.

During the postproject interview Tony also mentioned that he would be interested in continuing to conduct research on his teaching. He said he had several ideas for projects, one being a continuation of this project. He suggested he could look at his interactions with all of his students.

> If I were to follow up this research, I would extend it further by not only concentrating on two students. . . maybe do

> a class, and see who I interact with the most or see who is not getting any type of feedback.

Tony also expressed an interest in learning about and studying evaluation of skill development. He appeared concerned that all students were currently being graded on the same criteria when he knew all students were developmentally different. Tony believed students should be graded according to changes based on their entry level skills. During the final work session with the facilitator, Tony decided that for a future project he would like to experiment using a different evaluation system.

> [I would like to study] testing because this is my concern as far as skill tests or evaluation. I look at each kid as different across skill levels. Do you use different criteria to base the skill expectations on? The highly skilled kids would be tested on these [different] skills, the ones in the middle would be tested on these skills, and then the lower level kids would be tested on something very simple. I would like to do another project looking at using different evaluation processes to evaluate students in physical education. I feel like there's a need to evaluate students on a fair basis, especially when it comes to skill tests. So that's the concern that I have for the next project.

After Completing the Action Research Project

Tony's Teaching

Four themes related to Tony's teaching-- self-growth, relationships with students, individual development, and class management-- emerging from his pre-project interview and log data were re-examined within the postproject data. The relationships with students theme did not emerge again. A new theme, fitness, was found in Tony's postproject and follow-up

interview data. This theme was related to Tony's concern that students be given a balanced program of skill development and fitness.

Self-growth. The self-growth theme found in the preproject data also emerged from the postproject and follow-up interview data. Tony continued to speak about growing professionally as one of his personal goals. In order to attain this goal, Tony said he would like to continue taking courses and staying involved.

> My goals are to be the best I can be, to keep improving myself as a physical educator, to continue to grow in the field of education. . . to maintain my professional level by taking courses or perhaps entering an educational program to earn a master's degree in physical education. . . to get feedback from other professionals in the field of physical education, to observe other teachers, to read periodicals, magazines, do research. To try new things.

Individualized development. Tony's interest in helping all students individually remained consistent throughout the project. During the postproject interview, Tony continued to discuss spending extra time with individual students who needed extra help with their skill development.

> I try to individualize the teaching of skills if a student needs certain help or certain skill development. I try to allow time in the lesson to reach that individual. . . If you are dealing with a skill, you need to make sure that the kids have [enough time to develop] the basics of the skill. Also, you want to look at if a skill needs to be refined, if they are having trouble. . . And if that takes three, four, five minutes, that's fine.

Tony's belief that it is his responsibility as a teacher to help build students' self-esteem and help students feel as if they can accomplish

everything they set out to learn in physical education class, also emerged in the postproject interview data. Again, Tony seemed to focus this concern toward his lower skilled students.

> I try to reach the students from the "whole", not just from the physical, but also the social and mental development of the student. I try to build the students' self-esteem. . . also [help the student] understand that he must [believe] in himself, and that he can attempt or try anything that is asked of [him].

Tony's concern for the students' sense of belonging to the class also surfaced in the postproject data. During his discussion of what one would observe during a typical physical education class, Tony mentioned his concern for how students felt when he had to discipline them. Tony explained that if students had a behavior problem, he would have them sit out of class to further think about the problem. He emphasized that this procedure was used only sparingly, and he would have the student return to the class quickly. Tony was concerned about using this disciplinary strategy because he did not want students to feel as if they were not members of the class.

> If a situation came up as far as behavior, I would talk with the individual. If the behavior problem continued, I would have the student take some time out, to let them think about the problem. And, of course, I would bring the student back, I would not keep the student out the whole class period. I would want to make sure he had the feeling that he was still part of the class.

Class management. Tony's concern about class management and organization also emerged in the postproject data. Tony continued to

organize and run his classes with the pattern described in his early logs. Tony's description of what one would observe during a typical physical education class was almost identical to the description he had given four months earlier, during the preproject interview. The major difference in the description given during the postproject interview dealt with Tony's discussion of what he did as a teacher earlier, Tony had only discussed what the students did.

> On a typical day. . . students would be in their squads, sitting on the floor waiting for me to arrive out of the locker room. I would take roll. After that, you would see a group warm up. After that is done, I would bring them together. If I review from the [previous] lesson, I'd go back over the skills or points that needed to be re-emphasized. Then I would introduce the day's lesson, tell them what I expected from them. If there was equipment involved, I would indicate who I wanted to handle the equipment. If there were major safety factors, I would emphasize that also. Throughout the lesson you would see me observing and interacting if there was a skill correction needed. I would be observing, moving about, not standing in one position but moving around, trying to get a whole view of the class. If there was refinement that needed to be done, I would stop the lesson, bring them in, talk with them, explain what they were doing wrong or what they needed to try [in order] to better their skills. . . I try to cover each group. At the end of the lesson you would see [me] bring the students in, speak with them, ask questions about what went on. . . As far as students are concerned, you would see students ontask the majority of the time. Of course there will be a couple of students offtask, but you would see most of the students ontask. That's it!

Fitness. A new theme, fitness, emerged from the postproject data. During the follow-up interview, Tony mentioned that one of his goals in teaching physical education was to provide the students with a balanced

program containing skill development and fitness concepts. Tony explained the sixth grade program:

> My goal in teaching physical education is to. . . set up a program so that the students will get a full program of physical education and fitness. . . to get a balance of skill activities and also fitness, to combine those two into a good program. We set up our program for three days of skill and two days of physical fitness, to improve students' cardiovascular fitness. We look at the kids. They might be weak in [upper body strength] so we then figure we need to concentrate on strength, such as exercises or activities that develop the upper body parts. . . We give the kids fitness tests, a pre- and a post-. We compare the test results to see where the kids were in October and where they are in May. Also we have outside help from the [University]. Fitness people who are in the field of fitness come in and give the students and teachers fitness points or ideas we can use.

Expressions of Instructional Autonomy

Following his participation in the project, Tony again appeared confident of his abilities to learn and change. When discussing what he had learned from his participation in the action research project, Tony said the project served as a motivating factor for him. He said it helped him act on a concern related to his teaching that he was aware of but had done nothing about.

> I felt that it was useful in the sense that it motivated me as a teacher to really bring forth my teaching strategies to help me deal with a concern about two particular students in my class. Before that, before the research started, it was like, you know, the concern was there, but there wasn't any approach. I knew that the concern was there, and by participating in the research, this enabled me, motivated me, to reach out to the students who needed help. I feel good; it was something different. It was a challenge. I like challenges. It helped me in my instruction. I feel like it helped students along the way also.

Tony also expressed satisfaction in his improved abilities to work with the two LD students.

> My expectations were met because inside it makes me feel good that, as far as reaching any type of student, any type of concern, I would be able to deal with that, instead of standing back and waiting for it to happen, I can just go forward. Or if I need to call in an outside source for a suggestion, I do have that now. . . With action research, I thought it was helpful, very helpful to me, because it was like a self-motivator in trying to reach certain students in the class that really needed help. I really wasn't interacting the way I should have been interacting with those students. And now I can, I feel really comfortable because I could go to a student and. . . interact or do a skill correction right on the stop without standing back too much, go straight to the problem or situation and deal with it right [then].

Opinion of Collaborative Action Research as a Vehicle for Improving Instructional Practice

Tony spent a lot of time after completing the project discussing action research as a vehicle for improving instructional practice. When comparing action research with other types of staff development programs he stated that action research was beneficial because it addressed the concerns of teachers. Tony appeared excited about action research, and said it was beneficial as a form of staff development because it allowed him to see the effects of changes over an extended period of time.

> I feel like [instructional concerns and research] go hand in hand. There are a lot of problems in the physical education field and action research can be really beneficial; it can really benefit a teacher because I can ask myself: what if, how can I do it better, maybe I need to try this, etc. And with research, these things can be brought out or tried. Sometimes we take what we get from a workshop

> and bring it back and present it to the kids. But, it's over; you present it and it's over. But with research, you can see a long drawn out process, what you're trying to accomplish and how the students are progressing. The material, in general, that you bring back from a workshop, you present it, and then you don't see it. But her you can see the growth or [whether there is a decline].

The following assertion, made by Tony during the follow-up interview, reiterates Tony's views on action research as a vehicle for improving his instructional practice.

> I feel that there was a great benefit because [participating in research] gave me the opportunity to identify problems or concerns with my teaching and classes. And from a research standpoint, instead of brainwashing or trying to do it on my own, it gave me an opportunity to deal with those sorts of problems and improve my teaching.

CHAPTER VII

CASE STUDY FOUR: CATHY

Cathy, a white female, 32 years of age, holds a bachelor's degree in physical education. After graduating, Cathy taught kindergarten for one year and she then took an eight-year absence from teaching to raise a family. Cathy is currently in her second year of teaching physical education.

During the collaborative project, Cathy taught sixth grade physical education at Lawrence Middle School. She met with her classes of approximately 25 students, 5 days a week for 45 minutes. Three days of the week were devoted to skill development and the remaining two days focused on improving students' fitness levels.

Prior to the Action Research Project

Cathy's Teaching

Four themes related to Cathy's teaching emerged from her preproject interview and logs. The first theme was Relationship with Students, pertaining to Cathy's concern about developing a "good relationship" with her students. The second theme was Students' Enjoyment of Physical Education. Cathy wanted her students to have fun in physical education class and to "enjoy" playing games regardless of their skill level. The third theme, Communication Skills, related to Cathy's concern that she had

trouble giving clear directions to sixth grade students. The fourth, Class Management, related to Cathy's concern that she did not have "control" over some of her classes.

Relationship with students. One of Cathy's main goals in teaching physical education was to develop and maintain good relationships with her students. Cathy spent a lot of time discussing this. She felt strongly that sixth grade students were still children and that they needed extra personal attention from their teachers. During the preproject interview Cathy explained this further:

> You would see me interacting with the kids. . . These kids are still children, they're not young adults yet and they still need a hug and they still want to put their arms around you or hold your hand. . . And if that's what they really want, that's fine. If I'm providing something, then I don't mind. [For] a lot of the kids that are here at this school, you don't know if they're getting it at home, especially the ones that come up to you [on a regular basis]. Some come up to me every day, . . . it's like something they crave, so if I can give that little bit to them, I feel like I'm doing a lot for them.

Cathy felt it was important for her to participate in students' games in order to foster her relationships with students. She wanted her students to feel comfortable with her participating and playing games with them. Cathy explained:

> I wanted to make sure I was a teacher that participated with my kids and didn't just give instructions, demonstrate, and stand and watch without getting involved; [I wanted to] play with them and interact with them.

Cathy talked about what one would observe during a typical education class.

> You would see me doing with the kids whatever I asked them to do [because]. . . if we're on the floor, I'm on the floor...whenever we are playing dodgeball or. . . a football unit, I [am] out there helping them or I [am] one of their catchers, receivers, or their quarterbacks. . . I'm in there playing with them whenever we have game days. When [we have] dodgeball [I'm] in the middle and they can aim at their teacher, which is a big thrill. . . And when we do exercises, I do the exercises with them. I don't ask them to do an exercise I don't do.

Students' enjoyment of physical education. Cathy stated several times that she was concerned that her students have "fun" and "enjoy" physical education. She did not want her students to "dread" coming to physical education class. One of her main goals was "to make the skills and drills and stuff that I teach the kids sound interesting."

This desire was also evident in Cathy's lesson-planning strategies. In discussing what she thought about when planning lessons, Cathy stated that making her classes "fun" was a major factor:

> I try to think about making it fun to [learn] these skills. I want to make my lessons interesting. Skills and drills can be very dull and boring. . . I try to. . . [teach] the drill [at the beginning] of the class period, so in the last part of the class we [can] use a game situation. . . to show them that this is why we [learned the skill]. Kids can relate to someone saying we are going to learn how to play. . .volleyball instead of hitting with your hands. . . So I try to use [games]. . . so that generally they like being taught what they are supposed to be taught. . . they are more interested when they relate to [the activity].

Communication skills. Cathy expressed some concern over difficulty communicating directions to sixth grade students. During both the pre-

project group workshop and the preproject interview, Cathy said that communication skills was one of her major concerns in teaching.

> My major concern is expressing how I want things done. . . I give an instruction to the kids and I understand it, but I am scared with the sixth grade level; I don't want to talk down to them. One of my weaker points. . . is getting across. . . what I want them to do.

When discussing possible action research project ideas during the pre-project group workshop, Cathy spoke about two project ideas, one being her desire to work on improving communication of directions to her students.

> To get across better what I want the kids to learn. . . . [for the kids to] understand me better, easier, I guess. . . I [want] to try and be able to express myself better to my students whenever we're in an instructional [situation]. If I do it for them and show them how it's done. . . [they understand]. I just can't express it [in words]. . . The class would run a lot smoother. I wouldn't have to back up and try to figure out a new way to explain things. I'd spend less time on explanation and more time on actually [teaching the] class.

Class management. A second concern in Cathy's teaching practice was that she did not have control over her larger classes. During the first work session of Stage 1, Identification of Instructional Concerns, Cathy spoke about getting her fifth period class under control. There was a clear sense of helplessness expressed in relation to this situation.

> [In my] 5th period,. . . one thing that's the matter, and I can't control it, is the size. . . I've got 34 [students]. That's my dumping period and that's one thing that I have no control of. I spend most of my [time] getting the class under control. . . Overall that seems like the worst problem I've got right now.

Expressions of Instructional Autonomy

A lack of a desire for autonomy was shown by Cathy during the preproject interview. Frequently Cathy spoke of wanting someone to show her "how it's done" or "how to do it better". While discussing her expectations for the action research project, Cathy stated that she wanted someone to come in and provide her with constructive criticism and resources for improving her teaching situation.

> I want to have someone or a group of teachers, professors, whatever, give me constructive criticism, observe me, show me what I can do to change what I am doing. I take constructive criticism very well. I'd like to be able to have more resources so I can find out new, not really new ideas, maybe somebody else's ideas of how to do it [better]. Particularly something that works for someone else.

During her Stage 1 planning session, Cathy again asked for someone to come in and observe her teaching and tell her what to change. There was, however, a sense of caution in Cathy's request:

> I want somebody. . . to help me with my instruction, with the children. . . if I could get somebody to listen to how I do it and tell me what might be better and what would help [but]. . . I'd rather have the final say because I have to listen to my principal on what I can and. . . can't do. But I'm sure they won't. . . give me something that would really jeopardize anything.

This desire for someone to show or tell her how to do something appeared again when Cathy discussed her preferred learning style. When speaking about how she prefers to learn something new, Cathy stated that she would like somebody to show her how to do it.

> I would rather see it demonstrated. Somebody actually doing it instead of. . . reading it. If somebody gets in front of me and says the best way to do this is. . . then I can catch that faster than reading. After it is shown to me, then I would go back and read it and try to understand how it would be applied.

Opinion of Collaborative Action Research as a Vehicle for Improving Instructional Practice

Cathy seemed enthusiastic about the idea of doing research on her teaching. During the preproject interview, Cathy stated she expected the research process to provide her with new resources and the end results to have improved her teaching situation. Changing her teaching environment seemed to occupy her thoughts at this time.

> I've got hopes that it shows me how I can handle a situation that I want to change in my classroom. If I try different methods. . . or maybe get one that works better for me than what I'm doing now. . . I feel that if I had the resources to work with, I could [do it more easily], and it would make me feel more comfortable at times. . . I have more or less focused in on what I want help with, and the research program would definitely benefit what I am doing with the kids.

Collaborative Action Research Project

Stage 1: Identification of Instructional Concerns

During Stage 1, the teacher and facilitator worked together to identify various concerns. At the preproject group workshop, Cathy mentioned that she felt "really good" about teaching when "I really tried hard to get across [my directions] and everything worked right and when everybody had a good time. . ." Cathy also mentioned that she felt "discouraged" about teaching

when her classes were disrupted by fights or her lessons were unsuccessful because students were not listening.

After the group workshop, the follow-up work session was scheduled. Here Cathy expressed again her concern about her inability to communicate directions to her sixth grade students and her frustrations with her large fifth-period class, where the balance of time spent in class management and instruction felt unsatisfactory. After discussing these two concerns Cathy decided to focus her research on a class management project with her fifth period class.

Stage 2: Development of a Plan of Action

During Stage 2, with the help of her facilitator, Cathy began to develop a plan of action to address her class management concerns. After discussing project ideas, Cathy asked her facilitator to come in and code her fifth period class several times in order to develop a preproject profile of how she utilized class instructional time. Cathy choose a teacher behavior coding tool from Anderson (1980). See appendix C for the coding tool.

Cathy chose to use the tool as it was published, with no changes, as it coded behavior according to a teacher's professional funtions. The tool coded six behaviors: Instructing, Monitoring, Officiating/Regulating Motor Activities, Class Management, Behavior Management, and Other.

The teacher providing physical education information to the students was coded under instruction. The teacher silently observing students

performing motor skills was coded in the monitoring category. Officiating was defined as the teacher's performing the duties of an official such as enforcing games rules. Class management involved the actions of the teacher in organizing students for an activity. The behavior management category included the teacher's interactions with students around their behavior in class. Other indicated that the teacher participated in an activity other then those defined above.

Cathy asked for some reading material about class management and to review her preproject profile before choosing an implementation. The facilitator provided the following reading materials:

1) Beyond Bats and Balls (Hellison, 1978);

2) Developing Teaching Skills in Physical Education (Siedentop, 1983);

3) Goals and Strategies for Teaching Physical Education (Hellison, 1985);

4) Humanistic Physical Education (Hellison, 1973);

Cathy scheduled three preproject observations with her facilitator for the week following the work session.

The facilitator coded, "live", three of Cathy's fifth-period classes, two on skill days and one on a fitness day. Table 6 provides a schedule of Cathy's preproject coded classes and their content. After each coded observation, percentages of time in each category were determined by the facilitator and shared with Cathy. Following the three observations, Cathy and the facilitator scheduled a second work session to discuss the preproject profile

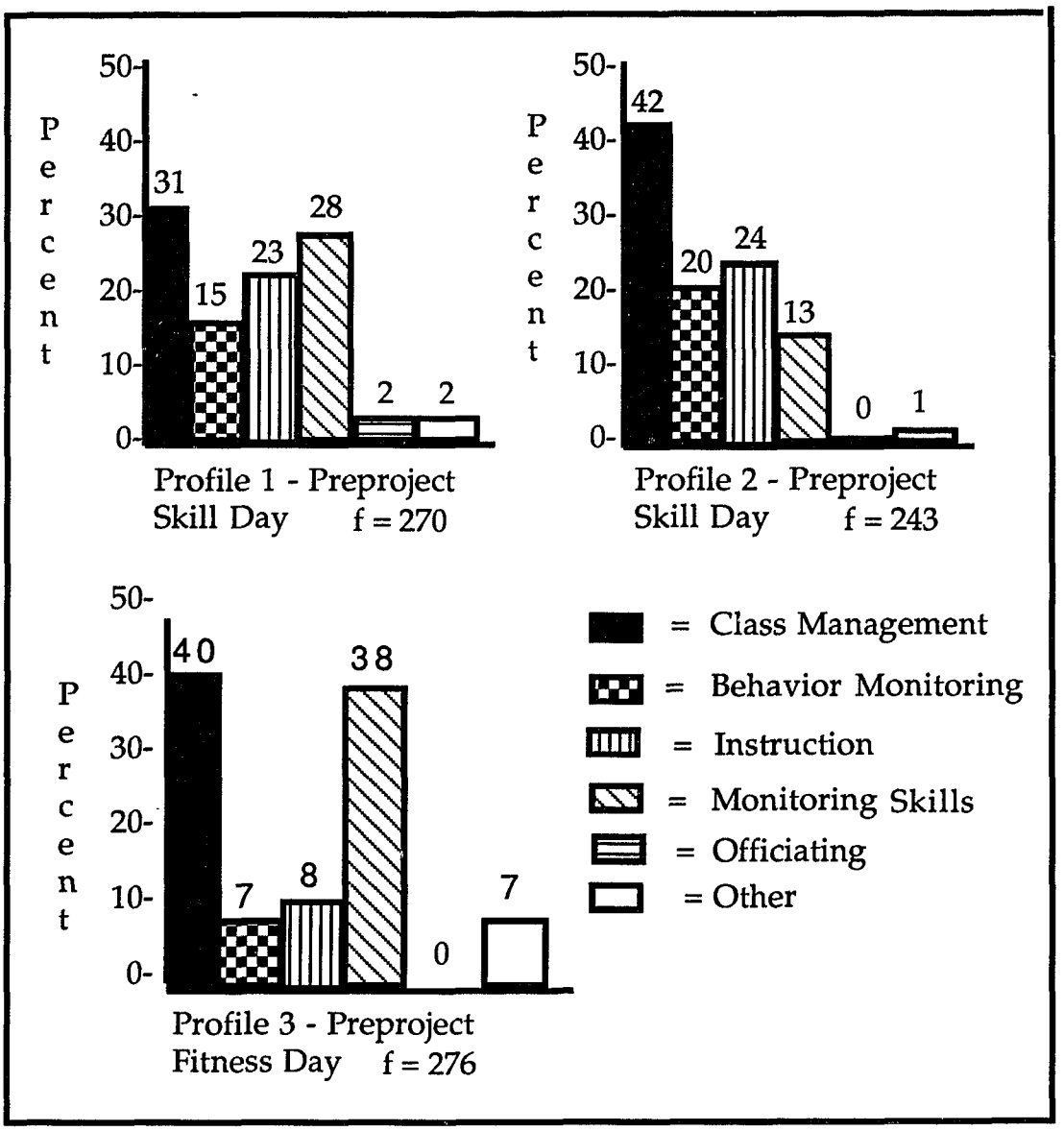
and to continue developing the plan of action (choosing the implementation) for her project.

Table 6
Preproject Coding Schedule for Cathy

LESSON CONTENT	DATE
Volleyball Skills	11/29/88
Volleyball Skills	11/30/88
Fitness Day	12/01/88

As a result of reading the materials provided by the facilitator, and studying her preproject profile (Figure 8), Cathy decided she needed to make several organizational changes in order to spend less time "managing" and more time "teaching" her classes.

Figure 8
Profiles of Preproject Coded Classes for Cathy.



Cathy's preproject profiles revealed that she spent between 31 percent and 42 percent of her class time on class management, 7 percent to 20 percent on behavior monitoring , 8 percent to 24 percent of her time on instruction, and 13 percent to 38 percent on monitoring (see figure 8, profiles 1, 2, and 3).

From the reading material, Cathy was able to glean some new class management strategies such as having the classroom teachers send students down to the locker room, as opposed to the physical education teacher collecting students from several different classrooms, and having all students in the locker room under her supervision. Prior to this, those students who did not change clothes were in the gymnasium, unsupervised, while waiting for those who were changing. A third strategy was having students line up in the locker room and walk directly upstairs to sit down on the gym floor for class exercises, as opposed to having students go up to the gym individually as they finished dressing. Taking attendance as the students warmed up and having the students slide in close together to receive directions after warm-up exercises as opposed to having students relocate for directions were two additional strategies.

Stage 3: Implementation

Cathy began her implementation immediately following the second work session. She requested that no coding take place during the first few weeks of the implementation period as she felt she would like time to "get comfortable" with the new class management strategies. She did, however, request that the facilitator be present to give her ongoing feedback and support during implementation.

Cathy asked the facilitator to begin coding again in mid December so she could develop her postimplementation profiles and compare the pre- and

postproject profiles. Certain shifts in the planned coding schedule were made due to the resignation of another sixth grade physical education teacher, which left Cathy in charge of the sixth grade physical education program. Once a replacement was found, and Cathy's teaching schedule was back to normal, the coding continued. After each coded observation, percentages of time in each category were determined by the facilitator and shared with Cathy. Table 7 provides a schedule of Cathy's coded observations after implementation.

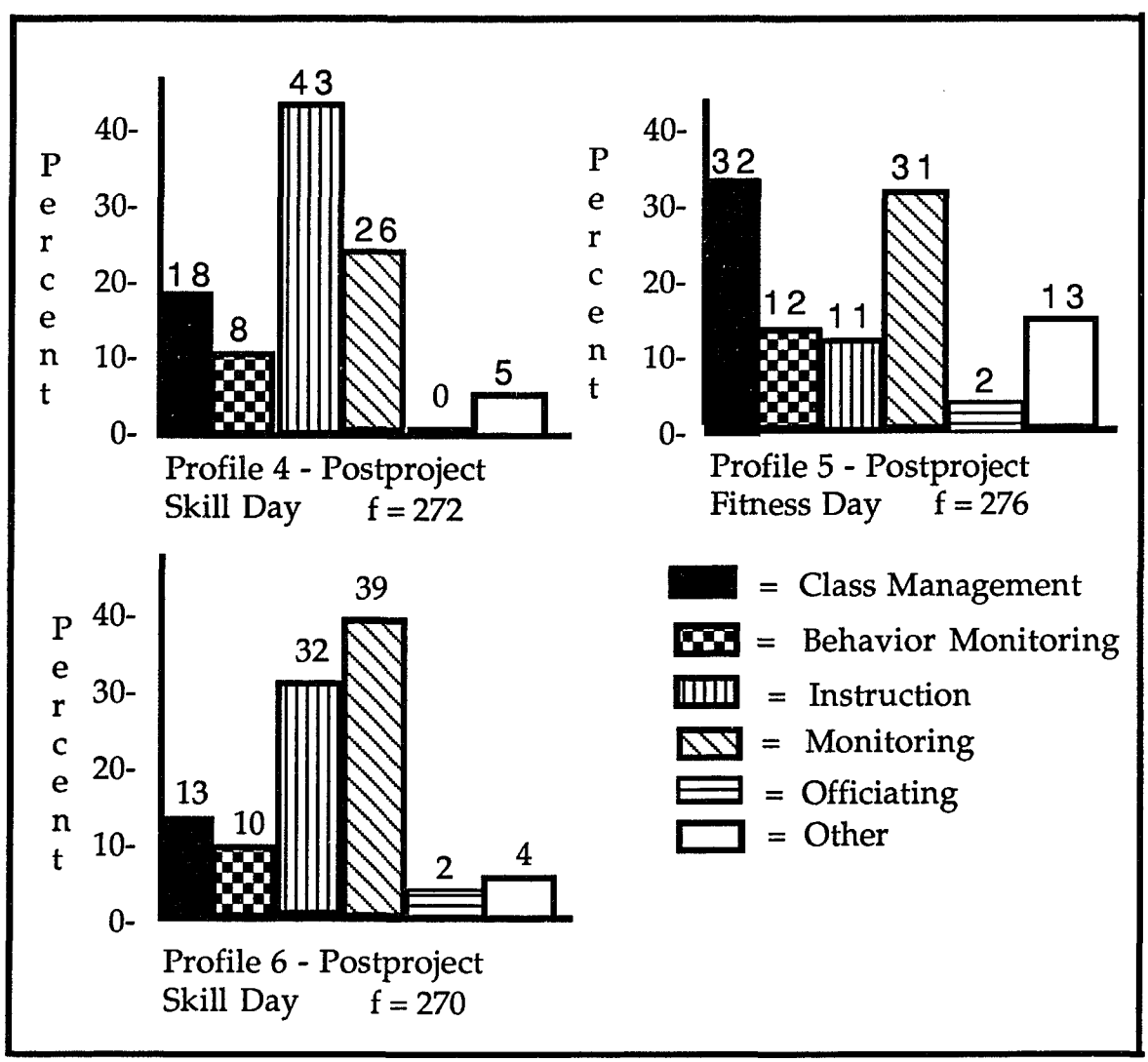
Table 7
Postproject Coding Schedule for Cathy.

LESSON CONTENT	DATE
Basketball Skills	12/12/88
Fitness Day	12/15/88
Racket Skills	01/20/89

Stage 4: Discussion and Analysis of the Results of the Project

During Stage 4, Cathy and the facilitator discussed the results of the implementation. Figure 9 provides a graphic display of Cathy's post-implementation profiles.

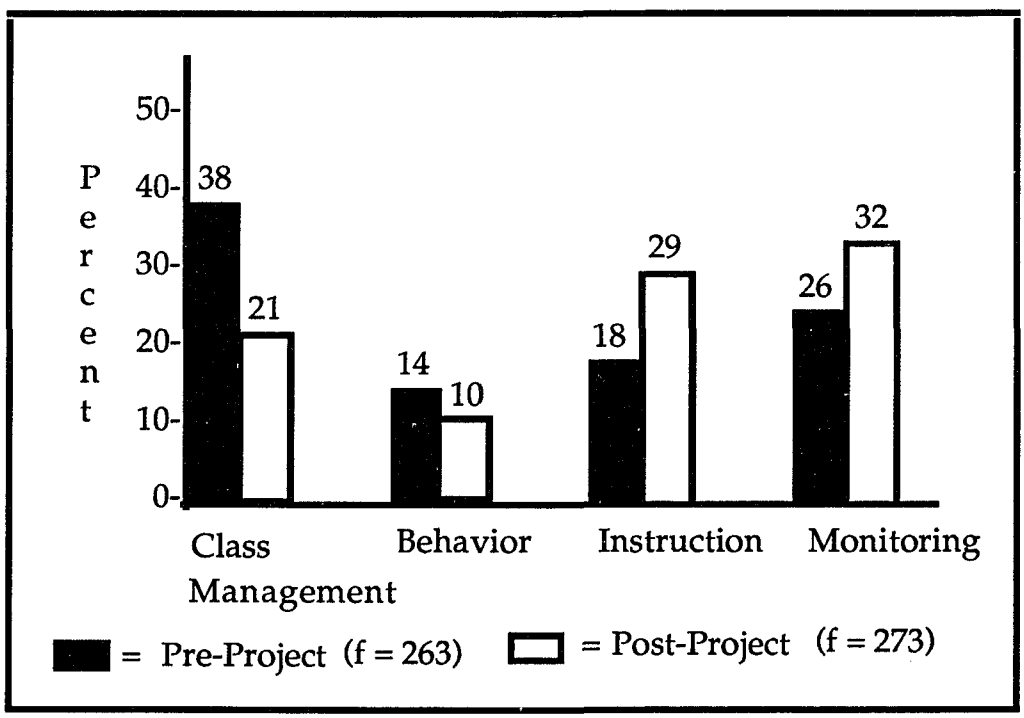
Figure 9
Profiles of Postproject Coded Classes for Cathy.



The postproject coding showed that Cathy now spent between 13 percent and 32 percent of her class time on class management, 8 to 12 percent on behavior monitoring, 26 percent to 39 percent on monitoring of skills, and 11 percent to 43 percent on instruction (see figure 9., profiles 4, 5, and 6).

The coding revealed that Cathy's perceptions of positive changes were accurate; the amount of time she spent instructing and monitoring skills increased and the amount of time spent on management and behavior monitoring decreased over the course of the project. Figure 10 provides a graphic profile of the mean changes in Cathy's percentages of time spent in these areas from pre- to postimplementation. Cathy learned that on the average, with skill and fitness days combined, that class management time dropped 17 percent from 38 percent to 21 percent, behavior monitoring time dropped 4 percent from 14 percent to 10 percent, instructional time increased 11 percent from 18 percent to 29 percent, and monitoring of skills increased 6 percent from 26 percent to 32 percent.

Figure 10
Mean Percentages of Select Behaviors Pre- and Postproject for Cathy



Stage 5: Discussion and Evaluation of the Collaborative Action Research Project Along With Recommendations for a New or Continued Area of Study

Cathy was pleased with her project and its results. She felt that because her class management and behavior monitoring time decreased, she now had the time to "teach" her fifth-period class. Cathy elaborated on this during the postproject interview:

> I feel like I've improved. . . my instruction. Now I'm comfortable with it. I can walk into the classroom and feel like I can do everything I've written down. . . for that lesson. . . It's my prerogative now, [I'm] not constantly [trying] to keep control [now]. . . [I now have] more time to work on instruction.

During the postproject interview, Cathy mentioned she was interested in continuing to do action research in her classroom. When responding to the idea of beginning a new cycle of action research, Cathy said she had already implemented one herself, dealing with behavior contracts with students, and had an idea for another project. During the final work session, Cathy discussed her idea for an action research project which would work on her ability to ask students questions: "[I want to figure out questions to ask kids to get them to explore [ideas]. I feel that I can teach a sport, but to ask questions [is difficult for me]."

After Completing the Action Research Project

Cathy's Teaching

As indicated earlier, four themes emerged from Cathy's preproject interview and logs: relationships with students, students' enjoyment of physical education, communications skills, and class management. These four themes were re-examined in her postproject and follow-up interviews and log data. A search for new themes was conducted, but no new themes emerged.

Relationships with students. Cathy's concern for developing good relationships with students remained constant throughout the project. After completing her project, she commented:

> I have a kind of personal relationship with the [kids]. I like playing with kids. I like getting in there and doing what they are doing. I'm a caring person. . . if

> I see a kid's got problems in the classroom, I try to make sure that I talk with [him/her] at the end of class to try and find out what it is [about]. . . If he got into trouble with another teacher, maybe he can have someone to talk it out with. . .

During the follow-up interview, Cathy continued to speak about the importance of her relationship with students, mentioning again that she wanted to be a teacher who participated with her students.

> I want to be, try to be a teacher that can work with the kids and play with them, participate with them, and a person they can enjoy, to help them enjoy physical education.

Cathy said that participating with the students helped her to develop her relationship with students.

> I'm the teacher, and they respect me. . . to actually be one of them, and not be a side-line person [makes] a relationship with the kids that they don't get in the classroom. . . Their teacher stands in front; I don't have to stand in the front.

Students' enjoyment of physical education. At the close of the project Cathy still spoke about students' enjoyment of physical education as one of her goals in teaching physical education. She wanted her students to come away from physical education knowing that anyone, even someone with low skills, can enjoy participating in physical activities.

> I'd like to be able to show kids that physical education isn't just for jocks, anybody can [play sports]. The activities are something they can play out in the yard working with different equipment. . . Even the person who isn't coordinated can enjoy the class.

When discussing what she thinks about while planning lessons, Cathy again said that she plans skill activities that the students would enjoy:

> I try to figure out things for the kids to do that are fun. . . . If I have to have a drill type situation, that drill is followed by a game they can relate it to because that way they will try their best to do the drills the way I showed them to. . . I try my best every time I set up a lesson plan for a day [to] have several drills and for each drill several games.

Planning for fun was also a predominant theme during the follow-up interview. She even thought about the students' enjoyment when planning fitness days.

> In my lessons, I try to create fun activities. . . creating really fun relay types games on our fitness days where they are using balloons, jump ropes, all kinds of stuff. . . to make it fun. . . I get in there and I play these activities with them. And I try to make it fun [so] they will go home and do it. We've made it to the point where they look forward to this day instead of dreading [it].

Communication skills. In contrast to before the project, Cathy spent less time talking about her communication concerns during the postproject and follow-up interviews. Cathy made only two references to communicating direction to students after completing the project. One dealt with how the research project had helped her with communication skills. She felt that if her students had not understood her directions, she now had time to back up and rephrase her directions when necessary.

The second reference to communication skills was made when discussing what one would observe during a typical physical education class.

Cathy mentioned that one would see her communicating directions to students so that every student understood.

> I would hope that you'd see a teacher who tries to make sure every child understands what she is saying. I didn't work on that as my project, but that was one of the things that I tried to work on, on my own, expressing myself to the kids, because sometimes my tongue gets tied. I know what I want them to do, but it won't come out of my mouth right. I've tried to work on that point on my own, and it seems to be working [well].

Class Management. The class management theme, found in the pre-project data, shifted its focus in the postproject and follow-up interview data. During her later logs, Cathy began writing about the improvement in her class management time. She was able to start class more quickly as a result of having students come up together from the locker room and go directly to the floor for exercises. In her last log, Cathy wrote that she felt "more confident [with] class control, and class management has increased". Additionally, she wrote about how she was now able to "teach more" and needed to "control behavior" less as a result of implementing the new class management strategies.

After completing the project Cathy spoke about how much more "comfortable" she was teaching as a result of having implemented new class management strategies. During the postproject interview, when responding to a question about what she does as a physical education teacher to reach her teaching goals, Cathy said "I try to let the kids know, first, that I have control."

She also spoke about how her new strategies cut down on the percentage of time she spent managing her classes and how that, in turn, allowed her more time to teach.

> This way I didn't waste time and my class management [time] is cut down. . . Behavior [problems] also went down... Instruction [time] was up. . . So I felt that [I] really accomplished what I wanted to accomplish, and after I found [out] how well it worked in that fifth period class, the rest of my classes [went] the same way; my day was a lot easier and there was more time for actually instructing. . . I feel a lot more comfortable with my classes,. . . I don't feel like I have to go in there and pull every persons hair to get them to do what they are supposed to do.

Expressions of Instructional Autonomy

Cathy's expressions of instructional autonomy shifted radically from preproect to postproject. Initially, Cathy spoke about wanting someone to show her how to improve her teaching. During the postproject interview, however, Cathy spoke about implementing new cycles of action research on her own.

> I've already implemented one. . . [on] discipline problems. . . We started writing up contracts and they're working. . . It was in one of those books [the facilitator] showed me. . . It gave me the idea that I could do this on my own. . . and so far [the contracts are] working [well].

This new sense of self-direction also appeared during the postproject interview. Cathy spoke about how much input she had in putting together her project. She said, "I had a lot of input into [the project]. . . I was the one to decide which [strategies] I wanted to work [on]". This appears to be a dramatic change from the preproject desires for someone to tell her how to change.

Cathy also spoke about how, as a result of her action research project, she was now more comfortable with her teaching, and that she also felt that she could accomplish everything she set out to do.

> Now I'm comfortable with [my teaching]. I can walk into the classroom and feel like I can do everything I've written down to do for the lesson. If I feel like the kids need to work on something longer, then I can do that too, it's my prerogative now.

Cathy continued discussing how this new knowledge not only helped her in the present, but how it would help her with her teaching in the future.

> I definitely was happy with it and I've been able to use it not just for fifth period. . . [but] throughout the day. If I hadn't gone ahead with the research, I would still be struggling with that class, and we wouldn't be going anywhere. . . I feel like we have progressed with their skill [development] a lot faster since we started the project. . . I feel more comfortable with what's going on in my classroom. And next year I know what to start out doing to keep it from getting out of hand or getting back to [the way] it was.

During her discussion, Cathy attributed this improved sense of self direction to her involvement in action research.

> I'm glad I was able to be in on this. . . because I feel a lot better with my classes, I know what I need to do, what I need to set up for next year.

Opinion of Collaborative Action Research as a Vehicle for Improving Instructional Practice

Cathy seemed excited about the results of her collaborative action research project. When asked to discuss her project during the postproject

interview, she stated that the action research not only improved her teaching in her fifth period class, but also helped her teaching throughout the day:

> I think it's helped me a lot because [what] I worked on with the fifth period class, I could apply to the rest of my day. And I've been able to set different goals for [my] classes. So with the research we did, it was important to my instruction.

During the follow-up interview, when discussing action research as a vehicle for improving instruction, Cathy reiterated that her research project "worked out great" and that it helped to improve her teaching. The following quote reflects Cathy's opinion of action research as a vehicle for improving instructional practice.

> I was having a lot of problems [5th period]. . . [Action research] has helped me in my whole day by aiming in on this one class because I have been able to use several things that we [did with 5th period] with other classes. . . So the research we did was important to my instruction. . . I'm really glad that I went in with the [research] project. I like my fifth period class [now], where I was dreading it [before].

CHAPTER VIII

DISCUSSION, CONCLUSIONS, IMPLICANTIONS, RECOMMENDATIONS

The purpose of this study was to describe four middle school physical education teachers' self-reported experiences during collaborative action research staff development projects. Specifically, the research explored the teachers' self-reported perceptions about various aspects of their teaching before, during, and after their involvement with collaborative action research staff development projects; the teachers' self-reported expressions of instructional autonomy and any modifications to that during their participation in collaborative action research projects; the teachers' self-reported opinions of collaborative action research as a vehicle for improving instructional practice; and the results of the teachers' collaborative action research projects.

Discussion

In analyzing the data, this researcher sought to discover themes, patterns, and differences among the four case reports. The cross-case analysis is presented in three sections: various aspects of the teachers' teaching, the teachers' expressions of and modifications of instructional autonomy; and the teachers' opinions of action research as a vehicle for improving instruction.

Aspects of the Teachers' Teaching

When looking at various aspects of the teachers' teaching, this researcher sought to bring out teachers' guiding beliefs or theories. The teachers were asked to discuss their goals in teaching, what they did to accomplish those goals, and why they did what they did. It was hoped that these discussions would encourage the teachers to examine their beliefs, because in order for teachers to change they must first confront and then critically reflect on the theories which guide their practice (Stenhouse, 1976).

Eight themes related to various aspects of the teachers' teaching emerged from the teachers' preproject data. These themes were class management, relationships with students, student learning, individualized development, individualizing instruction, students' enjoyment of physical education, management of class time, communication skills, and teacher self-growth. The themes remained relatively constant for the teachers throughout their projects. Only one new theme, fitness, emerged from the postproject data. After completing their projects, both Jerry and Tony named development of students' fitness levels among their teaching goals.

The fact that the various aspects of the teachers' teaching remained constant throughout the teachers' projects was not surprising. Major changes in teachers' attitudes are gradual and can not be expected to appear in the short amount of time alloted to this research project. According to researchers such as Guskey (1986), not only must teachers reflect on their

beliefs, but they must first see changes in student learning if significant changes in their beliefs and attitudes are to occur. Guskey further suggested that "change is a learning process for teachers that is developmental and primarily experientially based (p. 7)" and that evidence of change in students' learning generally precedes any significant change in teachers' beliefs.

For two of the teachers in this study, small changes in attitudes about their teaching were seen after the teachers saw evidence of changes in students. For example, Cathy initially spoke about class management as one of her concerns. She wanted to "get my class under control". After completing the project, and seeing positive changes in students' behavior, Cathy began talking about class management as strategies she used to get the class organized so she could spend her time teaching. Cathy continued to discuss class management after completing her project but only in relation to her project. She no longer discussed class management as a concern. For example, in her postproject interview Cathy said:

> I feel like I've improved on how to express myself and my instructions [because] the new strategies give me more time to work on instruction. . . I don't have to worry about using [too much] time between behavior management and controlling all the kids. . . If it weren't for the research, I'd still be struggling to control [the class] and I wouldn't be getting the instructional time in.

Although the class management theme remained, Cathy's attitudes and beliefs about class management shifted after she saw changes in students' behavior. Cathy now saw class management as strategies she used to increase

the percentage of time she devoted to instruction as opposed to strategies she used to get the class under control.

Jerry also appeared to change his attitude toward class management. Jerry initially spoke of class management as a way to get his students ontask and to get them to listen and behave appropriately. After seeing that changes in his organizational patterns led to increased activity time for students, Jerry began speaking about using various organizational strategies to increase student activity time.

There was little evidence of shifts in attitudes about various aspects of their teaching for Tony or Randi. Noffke & Zeichner (1987) suggested that changes take place when teachers identify discrepancies between their intentions and their practices. Since neither Tony nor Randi identified discrepancies between their intentions and their practices lack of changes may thus be explained.

For Randi, a second possible explanation is that Randi did not have an intervention as part of her project; since she made no changes in her teaching, therefore she witnessed no changes in her students' learning. This would support Guskey's (1986) hypothesis that changes in teachers' attitudes will not occur unless teachers witness changes in students' learning. Randi did, however, confirm the fact that she was achieving her goal of individualizing instruction. Her conversations about individualizing

instructions intensified because she now had evidence that she was accomplishing one of her teaching goals.

Instructional Autonomy

Several researchers claim that teacher autonomy is increased through participation in action research. These claims have been found primarily in the Australian (Carr & Kemmis, 1986; Kemmis & McTaggart, 1982) and British (Nixon, 1981; Stenhouse, 1976) literature; however, an American researcher, Pine (1979), explained this phenomenon best:

> Collaborative action research empowers and emancipates teachers by helping them to help themselves, by placing them, consciously, in critical confrontation with their problems, and by making them agents of their own change. (p. 8)

The idea that action research helps teachers increase their autonomy was illustrated in several ways in this study. First, all teachers who chose to participate in this study addressed areas of their teaching that they hoped to improve, meeting one of Pine's (1979) descriptors of how teacher autonomy is increased through participation in collaborative action research. Randi's explanation of how her action research project began serves as an example of the teacher's self-reported experiences.

> The idea [for the research] was mine. . . it was an area that I was interested in and I mentioned it to [the facilitator]. . . [The facilitator] had the same interest which was good because we had something in common and we could talk about it. And [the facilitator] understood what I was trying to do. . . I devised my own code sheets and I collected my data and [recorded] them on my code sheets. . . Then we charted [each] day so I could

> see the percentage of individualized instruction, number of directions I gave, etc. Then I could see what happened from day to day.

Second, as a result of confronting their concerns, Jerry, Tony, and Cathy were able to change some portion of their practice. For example, Cathy changed several of her class management strategies, while Tony increased the number of interactions he had with two LD students, and Jerry increased the active learning time of his students. Although Randi made no changes during the actual action research project, she stated several times that her newly acquired knowledge about the results of her organizational patterns would affect how she organized group activities in her future planning and teaching.

Finally, the teachers seemed to experience an increase in their ability to help themselves. The improvements occurred in varying degrees for the four teachers. Cathy seemed to show the greatest change. In the area of self-direction related to learning, Cathy went from showing no desire for autonomy to initiating a second action research project on her own. Initially, Cathy asked for authority figures to "show me how I can handle a situation that I want to change in my classroom." During her postproject interview, when asked about beginning a new cycle of action research, Cathy explained that she had started an action research project on her own. She replied: "I've already implemented one; I did it... on discipline problems...I started writing up contracts [for students] and they're working... One of the books [the

facilitator] gave me, gave me the idea." Signs of increased autonomy also appeared in Cathy's teaching and planning. After completing her project, Cathy frequently referred to being able to "do what I want to do with my kids for the first time this year". She felt that the changes she made in her management strategies allowed her to have control over her planning and teaching situation. During the final interview she explained:

> the research project helped [me] feel more comfortable with what's going on in my classroom. And next year I know what to start out doing to keep things from getting out of hand or getting back to the [way] it was [this year] where I was using [most] of my time for managing [students] behavior.

Randi demonstrated an increase in self-direction related to planning. She appeared to experience an increase in her awareness of the results of her organizational patterns; Randi learned that she was better able to individualize her instruction to students when she organized them in small-group games as opposed to large-group games. Randi stated she would use that new knowledge to help her with her future planning. She mentioned that because one of her goals was individualizing instruction, she would, in her future planning, rethink how she brought an instructional unit to a close.

For Jerry, signs of increased autonomy appeared in his ability to reflect on his actions. The ability to reflect on one's actions is a necessary step towards increased teacher autonomy because teachers cannot become agents of their own change unless "they become conscious of the theories which

guide their practice and are able to reflect critically about them" (Elliott, 1976, p. 1). Prior to beginning his project Jerry showed few signs of systematic reflection on his actions. This changed as Jerry began to write his logs. Throughout the project, Jerry repeatedly stated that keeping the logs helped him to reflect on his teaching and question whether what he was doing was useful. Jerry wrote:

> This collaborative action research project is affecting me and my planning by motivating me to think about the "pros" and "cons" of everything I do. [It is] helping me to be more reflective about my teaching before and especially after each class period. This project makes me consider the validity and value of every step I plan for a lesson.

For Tony, signs of increased autonomy were limited to self-direction. He mentioned that the project helped "motivate" him to confront a specific instructional concern. Tony had been aware of the concern; however, becoming involved in the research helped him not only to confront his concern but to act on it. Tony explained:

> [The action research] was like a self-motivator in trying to reach certain students in the class that really needed help. . . Now I can interact with those certain students the way I should have been. . . Now I really feel comfortable because I can go straight to the problem and deal with it.

This self-motivation to face a concern is consistent with Pine's (1979) observation that increased autonomy was experienced by teachers during action research because it helped teachers to help themselves.

Similarly, McKernan (1988) claimed that "a central feature of much action research is its emancipatory nature - its ability to free practitioners - to make [them] more autonomous." (p. 193) The findings of this study appear to support the emancipatory and autonomous changes following action research projects noted by researchers such as Pine (1979), Elliott (1976), and others, about how action research helps improve teacher autonomy.

Action Research as a Vehicle for Improving Instructional Practice

One of the underlying premises of action research is that teachers are involved in the research process from the beginning, starting with identification of a research problem (Tikunoff, Ward, & Griffin, 1979). During Stage 1, the teachers were encouraged to identify an instructional concern. Jerry explained his experience with this process:

> I really felt like I [needed] to improve students' ontask time. Just from teaching [this grade level] for several years, I've developed a concern about students' offtask behavior. . . The kids are used to unstructured physical education time in the first five grades. . . [therefore] it's hard to keep them on-task. . . I told [the facilitator] directly that I wanted to increase active time for students and get them right on task. So, I determined what I was going to do for [the action research] project.

Effective staff development programs have also provided opportunities for participants to practice under guidance (Berman & McLaughlin, 1978; Joyce & Showers, 1980; Sparks, 1983a; and others). The literature on effective staff development practices indicates that practice

under guidance includes feedback about performance (Joyce & Showers, 1980). In this study, both Randi and Cathy elected to have the facilitator present throughout their projects to provide continuous feedback and to "coach" them through the implementation process. Cathy specifically asked for on-going support, although, she requested that her classes not be "coded" until she felt comfortable with the changes she had made.

On the other hand, both Jerry and Tony elected to "try out and adapt" their new teaching behaviors on their own without the facilitator's ongoing feedback. Both teachers did, however, receive feedback prior to beginning and after completing their implementations. Although there was no ongoing coaching or feedback during the implementation phase, the teachers were able to modify their teaching behaviors.

The feedback the teachers received prior to beginning their implementations served to inspire examination and discussion of their practices. This supports Sparks' (1983a) hypothesis that the most important function of feedback is to stimulate analysis and discussion. Jerry's self-reported experience serves to illustrate this. Jerry realized that his long and repetitive introductions had caused students to experience a large percentage of nonactive time. During the postproject interview, he said, "[after reviewing the profiles] I told [the facilitator] that I'd like to [increase] student activity time by cutting down, but not eliminating, the introduction and

review." The feedback that resulted from the research sparked discussion of possible alternatives which helped Jerry accomplish his stated project goals.

Lawrence (1974) and Howey (1980) have suggested that the process of staff development should be ongoing. This is especially relevant to action research as a vehicle for staff development because teachers involved in studying their teaching are automatically involved in an ongoing program. Findings from this study indicate that this ongoing process was in place. For example, Tony's comments reflect how the four teachers felt about the sustained effects of action research:

> Sometimes we take things we get from workshops and take it back to present to the kids. But then it's over, once you present it, it's over. With action research you can see the long drawn out process. You can see what you're trying to accomplish and how the students are progressing. With action research you can see your growth over time.

A final suggestion emerging from the literature is the provision of alternatives to accommodate participants' individual differences (Lawrence, 1974; Wood & Thompson, 1980; and others). Huling (1982), Simmons (1984), and Smulyan (1983) have suggested that by individualizing staff development efforts, a greater and more lasting effect can be insured. Because action research stresses teachers conducting research on their own concerns (Stenhouse, 1976), it is not surprising that the findings in this study were compatible with the staff development literature. All four teachers felt that

one important aspect of action research was that the project was highly individualized. Randi's comment exemplifies this feeling:

> Some of the things that you read about or hear about may not necessarily be helpful to you. . . A lot of research that you read may not be beneficial to you because of your individual situation. [With] action research there's a connection between research and your instructional concerns.

It is important to reiterate that the four teachers participating in this study indicated that they developed an increased understanding of what was happening in their gymnasiums. This clearly indicates these teachers attained one of the major goals of staff development efforts; that is, to better understand their instructional practice (Cameron-Jones, 1983; Griffin, 1982; Simmons, 1984). Randi was the most vocal of the four teachers with respect to her new insights. Early in her project, she made a number of discoveries about her teaching. In one of her first logs Randi wrote, "I am learning from the research that the time I spend on individual instruction varies from day to day. I also find that, depending on the lesson taught, the percentage of individualized instruction is low when the students are in large group games." These types of discoveries continued throughout her experiences with the action research project.

The focusing on what was happening in their gymnasiums seemed to be effective in helping the teachers realize that changes could be made in their teaching behaviors. This focusing then enabled them to accomplish their teaching goals more effectively. Griffin (1982) suggested this was one of the

processes associated with effective staff development: "a systematic attempt by teachers to [sic] identifying and acting upon problems they perceive as being important ones." (p. 23)

Jerry's improved understanding of how he spent his class time allowed him to critique his teaching behaviors and to design and implement changes. While analyzing his preproject profiles, Jerry said, "I need to cut down on that introduction." Jerry and the facilitator discussed how he was presenting the introduction and some possible alternatives. Jerry also reacted to his profiles by noting that students spent too much time being inactive and deciding he would like to "cut back on wait time." Jerry made several suggestions for change. For example, he said, "If I were to use six lines instead of four, there would be less wait time." Through discussions with the facilitator it was evident that Jerry's new insights led to his critique of and decision to make changes in his teaching.

Randi's project differed from the other teachers' projects in that she had no planned behavioral changes. Although Randi did not employ an intervention as part of her project, she did discuss future changes that she would make in her classroom. She stated these ideas came from her increased knowledge as a result of her involvement in the project.

It was apparent that all four teachers realized they could change their behaviors (especially if the behaviors did not match their conscious or stated goals). This reflects what other studies have found; through participation in

action research as staff development, teachers moved toward an in-depth understanding of what was happening in their classrooms and toward the ability to systematically reflect upon, critique, and when appropriate, make changes in their teaching (Cameron-Jones, 1983; Simmons, 1984; Smulyan, 1983).

In conclusion, the perception that action research was a useful vehicle for improving instructional practice (research problem 3), was shared by each of the teachers. These perceptions were present throughout the teachers' interviews and logs. A statement made by Randi, however, best summarizes the teachers' perceptions of their experiences with action research:

> What's encouraging to me, is that [action research] is something that I can do on my own. . . I can actually develop a plan [of action] to address a problem in my classroom. . . Action research is useful in improving instruction [because] you can see it work in your own classroom. . . [Action research] can show you exactly what you are and are not doing [therefore], when you have a situation which you want to improve, with action research, you can do that.

Implications

In Lewin's (1946) work he noted that perhaps the greatest obstacle in improving group situations was the "lack of clarity of what ought to be done" (p. 34). He also questioned how change could come about if we thought in terms of generalities rather than in terms of the specific problems of the particular people involved. This current research, in following Lewin's ideas about particularity rather than generality, addressed the individual teachers'

concerns rather than general improvement of teaching. The stages of collaborative action research followed herein led inevitably to helping clarify particular concerns for the teachers. Defining and clarifying problems was likely a major force in helping the teachers to be able to change.

Lewin (1946) felt that one of the consequences of a lack of clarity would be a lack of standards for measuring progress. This lack of objective standards for evaluating the relationships between the efforts made and the outcome could lead to wrong conclusions and to the encouragement of wrong work habits. In this current research, clearly defined goals and predetermined methods of measurement of outcomes helped to clarify the teachers' concerns and the subsequent level of success of their strategies.

The ability to make change also depends on how the participant views the situation and her/his subsequent change in perception. The teachers in this study all commented on an increased understanding of their instruction and their greater feelings of instructional autonomy. Furthermore the teachers all felt some degree of increased satisfaction with their teaching practices. These perceived gains likely reinforced the efforts the teachers were making and may encourage them to continue their concentrated efforts toward further instructional improvement.

Wood and Thompson (1980) stress that participant control -- being the originator of one's own learning -- and goals that are relevant, realistic and of importance to the learner, are major factors in the ability to create

teacher interest in research and the capability to make changes in teachers' practices. In this research the teachers generated their own goals and in collaboration with the facilitator developed strategies to address those concerns. As the study demonstrated teachers perceived themselves as becoming agents of their own change. This follows Lewin's (1946) findings which suggest that groups which work on clarifying and solving their own concerns rather than having the solutions handed down to them are better able to produce change.

A serious question following any change is its degree of permanence. Lewin (1946) felt working in teams following workshops would likely lead to a greater chance for permanent changes. Group enthusiasm and resultant productivity, Lewin suggested, could increase the power of the participants to bring about desired changes. This current research began with a teacher workshop which generated enthusiam and cooperative spirit among the teachers who participated. The collaborative action research projects were then carried out by individual teachers and university facilitators. Once teachers are experienced in this process, the next step may be for teachers to work in teams with their fellow teachers, not necessarily requiring the participation of the university researcher. This would enable teachers to become more autonomous and to generate more action research.

Idiographic collaborative action research faces a most difficult task in understanding and interpreting the essences of change. This study examined

the teachers perceptions of collaborative action research as a vehicle for improving instruction. Action research on action research may be the next step to discover how action research works, the dynamics of change, and why things happen in the change process. This would increase the power of action research as a staff development tool.

Conclusions

Within the limits of this investigation, the following conclusions are drawn:

1) The themes that emerged related to various aspects of the teachers' teaching (class management, relationships with students, fitness (postproject), student learning, individualized development, individualizing instruction, students enjoying physical education, communication skills, and teacher self-growth) remained constant throughout the collaborative action research projects.

2) The themes that emerged from the data associated with increased teacher autonomy included learning styles, planning, and reflection. An increase in instructional autonomy related to one or more of these themes was experienced in varying degrees by all teachers during their participation in collaborative action research projects.

3) Collaborative action research served as a useful model of staff development because it met the conditions frequently recommended for effective staff development:

a) teachers had control over the "what" and "how" of their staff development program

b) teachers practiced under guidance

c) the action research projects were ongoing

d) the projects accommodated the teachers' individual needs.

4) All four teachers experienced an increase in understanding of their instructional practice as a result of their participation in collaborative action research. Three of the teachers were then able to change their teaching to varying degrees.

5) Action research was reported by the teachers as a useful vehicle for improving their instruction.

6) All teachers gained a sense of being an agent of their own change.

Recommendations for Future Studies

Based on the results of the research and the insights gained during this investigation, the following recommendations for future studies are made:

1) Because the role of the facilitator and the process of facilitation are essential to the success of collaborative action research, these warrant further study. In this study two facilitators were used. This researcher felt as if the two facilitators approached the facilitation process differently. For example, this researcher felt that one facilitator was more directive with the teachers

than the other facilitator. How these types of differences affected the collaborative action research process is unknown.

It would, therefore, be interesting for future researchers to study how facilitators affect the process of collaborative action research. This researcher further recommends that a future researcher either be the sole facilitator or be a nonparticipant observer throughout the entire process in order to gain a full understanding of the projects and process.

2) It is recommended that future studies be more in-depth and follow the teachers for a sustained period of time in order to study more closely the process, any changes that resulted, and the lasting effect of the teachers' use of action research. Additionally, it would be interesting to follow up with these four teachers at several future intervals to assess the strength of the impact and any changes in their perceptions.

3) It is recommended that future studies also investigate collaborative action research from a less natural science paradigm. This researcher experienced preset interview questions as constraining at times. It is therefore suggested that future researchers consider using other types of interviews such as semi-structured interviews, which would allow for deeper probing. Not being the interviewer may also have limited the depth of probing into issues that could have enriched the understanding and write-up of the projects.

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APPENDIX A

INTERVIEW QUESTIONS

APPENDIX A

INTERVIEW QUESTIONS PRE- AND POSTPROJECT

1. Tell me about your goals in teaching physical education.

2. Tell me what you do as a physical education teacher to achieve your goals in physical education.

3. Tell me about the kinds of things you think about when preparing lessons.

4. If I were to come in one day during a typical week, and observe you teach, what would I see?

5. Let's talk about your learning style. How do you prefer to learn when the material is new to you? When you begin becoming familiar with the material? When you are very comfortable with the material?

6. Let's talk about your perceptions of research, especially action research. Do you think it will be useful in improving your instructional practice? (How?, Why?)

7. Is there a connection for you, between instructional concerns and doing research? (No - Could there be?, Yes - What have you thought about?)

8. Let's talk about your expectations for the collaborative action research project. What are your expectations for yourself and for your students?[1]

9. Please describe the type of input / collaboration you want and / or expect to have in putting together and carrying out your project. (How much "say"?, How much structure and when?)[2]

---

[1] In the post- and follow-up interviews this question will be reworded: To what extent were your expectations for your collaborative action research project met for yourself and for your students?

[2] In the post- and follow-up interviews this question will be reworded: Please describe the type and amount of input/collaboration you had when putting together and carrying out your project.

APPENDIX B

WORK SHEETS

WORKSHEETS FOR STAGE 1 WORKSHOP

1) A value I wish all teacher would hold is. . .

2) I feel encouraged about teaching when. . .

3) I feel discouraged about teaching when. . .

4) I feel successful as a teacher when. . .

5) I feel unsuccessful as a teacher when. . .

6) I feel the students are learning when. . .

7) I feel the students are not learning when. . .

8) My greatest successes as a teacher are. . .

9) My greatest failure as a teacher is. . .

10) Three things I do expectionally well as a teacher are. . .

11) Two things that I can improve on as a teacher are. . .

APPENDIX C

CODING FORMS FOR FOUR PROJECTS

RANDI'S CODING FORM

Individualized instruction to enhance student skills

---

1. Contact / Type
    Directions (Individual)
    Directions (Group)
    Monitoring Behavior
    Instruction (Individual)
    Instruction (Group)
    Other

HOW MUCH TIME IS SPENT ON INDIVIDUAL INSTRUCTION?

---

2. Time

HOW MANY STUDENTS ARE CONTACTED FOR INDIVIDUAL INSTRUCTION?

---

3. Number of Students
    Directions:
    Instruction:
    Behavior:

Comments:

JERRY'S CODING FORM
Definitions From Anderson (1980, p. 24, 25)

1. *Performs motor activity:* Actively engages in motor task normally considered to be the subject matter of physical education, including: playing game or sport, practicing skill, performing exercise or calisthenics, and exploring solutions to movement problems.
2. *Receives information:* Listens to teacher or other student; attends to demonstration, audiovisual aid, or written material.
3. *Gives information or assists:* Talks to other student or teacher (includes asking questions); demonstrates, manually assists, or spots for others.
4. *Waits:* Engages in "holding" behavior - e.g., waiting his turn, waiting for game to begin, etc. Is not performing motor activity or giving or receiving information.
5. *Relocates:* Moves from one place to another, such as walking from one activity area to another, or walking to get on line. Is not giving or receiving information.
6. *Other:* Engages in activity other than those mentioned above, such as obtaining equipment, getting drink of water, tying shoes, etc.

Sample Coding Form

TIME SAMPLING OF A SINGLE STUDENT'S BEHAVIOR

Record a check for each 5 seconds of student activity

Student Name:
Class:

Segment	Performs Motor Activity	Gives Information	Waits	Relocates	Other
9:00 - 9:03					
9:06 - 9:09					

TONY'S CODING FORM

Sample Coding Form					
Record a check for each intervention					
	Praise	Questions	Directions	Skill Feed-back	Reprimand
Student One					
Student Two					
Class					

CATHY'S CODING FORM

Definitions from Anderson (1980, p. 40, 41):

1. *Instructing:* Providing information about the subject matter of physical education (such as movement concepts, motor skill performance, game rules, and strategies), with the intent that students learn it. The information from students, having a student demonstrating; or indirectly by soliciting information from students, having a student demonstrate, using audiovisual aids, etc. Includes preparatory instruction as well as providing students with feedback about their performance.

2. *Monitoring motor activities:* Silently attending to students(s) who are performing motor activities* (not actively guiding or instructing).

3. *Officiating / regulating motor activities:* Performing the recognized and established duties of an official in a game or sport. Also includes performing the duties an official (i.e., regulating the starting and stopping of activities, enforcing rules, keeping time, keeping score) in a game or activity for which there are not established rules.

4. *Class management:* Organizing students for activity by grouping, assigning location or position. Performing administrative tasks such as taking attendance, making announcements, setting schedules, etc. Providing or adjusting equipment, or readying the environment.

5. *Behavior management:* Interacting with students about compliance with classroom norms and rules for social-personal conduct. Includes disciplining, praising proper behavior, explaining rules, etc., but not related to subject matter.

6. *Other:* Inlcudes participating in motor activities (not demonstrating); spotting interacting with students about matters other than those mentioned in the preceding categories; noninteractive intervals when the teacher is not communicating with or observing students.

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* Motor activities are those goal-directed movement activities normally considered to be part of the subject matter of physical education, such as games, sports, exercises, motor skills practice, exploratory movements, and fundamental movements.

Sample Coding Form

Class: Teacher:

Codes: (I) Instructing (C) Class management
(M) Monitoring (B) Behavior management
(F) Officiating (X) Other

5 second intervals	1	2	3	4	5	6	7
1							
2							
3							
4							
5							