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An analysis of a method for training educators in the peer coaching process

Judith Maule Sessions
Iowa State University

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An analysis of a method for training educators in the peer coaching process

by

Judith Maule Sessions

A Dissertation Submitted to the Graduate Faculty in Partial Fulfillment of the Requirements for the Degree of DOCTOR OF PHILOSOPHY

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Approved:

Signature was redacted for privacy.

In Charge of Major Work

Signature was redacted for privacy.

For the Major Department

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Ames, Iowa
1995
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CHAPTER I. INTRODUCTION

Increasing student achievement by enabling teachers to become more effective in the classroom is the primary goal of administrative supervision. The process of observation, data collection, analysis, and feedback provided by a knowledgeable supervisor has continued to be the most widely-used approach to improving teacher performance. This process, though proven effective, consumes considerable amounts of time when the number of teachers supervised is extensive. A growing body of research suggests that not all teachers require this level of direct administrative support to facilitate improvement of teaching (Cole, 1990; Joyce & Showers, 1987; Willerman, 1991; Osterman & Kottkamp, 1993).

As teachers continue to move toward greater professionalism with mentoring, peer coaching, and career ladder experiences, the view of teacher as technician is shifting toward a model of teacher as reflective practitioner. In this role, many teachers are increasingly viewed as competent to make knowledgeable judgments about personal practice and to provide practical support to peers in the improvement of instruction (Conway, 1991; Glickman, 1988; Koballa, 1992; Osterman & Kottkamp, 1993).

Within a typical group of teachers supervised by an administrator, there will be those with strong technical expertise in observation, analysis, and ability to change the performance of other teachers. If a teacher has successfully faced the same or similar instructional challenge, the kinds of suggestions given may have considerable credibility and practicality in the peer's setting. The number of teachers who can improve personal performance and the performance of others without the need for continuous direct
administrative supervision appears to be increasing (Ackland, 1991; Simmons & Sparks, 1985; Tarrant, 1991).

Some administrators have redesigned traditional performance evaluation systems to accommodate these skills by encouraging consistently successful teachers to participate in peer coaching experiences in lieu of the standard supervisory cycle. This allows principals to reserve greater administrative resources for teachers needing direct and frequent supervision. When viewed in this light, the peer coaching process can be considered a significant strategy to extend the effectiveness of an administrator.

A second area where peer coaching contributes directly to improved instruction is in the area of staff development. A number of recent studies on the most effective ways to accomplish staff development have pointed to the necessity of providing peer feedback and support in the implementation of new techniques (Barnes, 1990; LeBlanc & Zide, 1987; Willerman, 1991). Teachers must have support and time to apply an innovation until it becomes a part of the personal repertoire (Showers, 1984b).

Several studies suggest that teachers may initially feel more comfortable trying new instructional strategies with a peer providing feedback than with a supervisor in the evaluative role. Commitment to a peer can be a strong factor in willingness to try out a new technique. When two teachers share observations, there is "peer" pressure to meet expectations that would not be present if the teacher were trying out a new technique alone. The encouragement provided by a peer may help the teacher try again if the initial results were discouraging (Showers, 1985; Smylie, 1989; Osterman & Kottkamp, 1993).
A teacher may participate more freely in brainstorming alternatives and new approaches to recurring problems in the peer situation, as compared to the supervision setting (Bodenhousen, 1990; Ponzio, 1987).

Peer coaching shows high potential for teacher induction programs, and a number of school systems are beginning to implement the peer coaching model for this purpose (Cole, 1990). In 1982, Joyce and Showers outlined the major components of the coaching process for staff developers who were specialized trainers for other teachers. The term "peer" was added in 1984 when Showers trained teachers to be "peer coaches" rather than using staff developers in the coaching role (Showers, 1984a).

A variety of peer coaching approaches have been tried over the past ten years. Most successful peer coaching programs have three characteristics in common. They are 1) non-evaluative, 2) based on the observation of classroom teaching followed by constructive feedback, and 3) aimed to improve instructional techniques (Ackland, 1991).

There is increasing evidence to support immediate benefits of participation in this process. Several recent studies have suggested that there is an increase in collegial respect and feelings of self-efficacy engendered through successful peer coaching experiences (Pozarny, 1991; Sprague, 1992). Greater ownership and responsibility for results can develop. Teachers with strong feelings of self-efficacy outperform teachers with lower degrees of self-efficacy (Coe, 1985; Goodlad, 1983; Heller, 1989).

Research on adult learning suggests that adults are more likely to actively participate in learning experiences when there is some personal control over the selection and direction of areas to be studied (Moore, 1988). In the process of serving as observer and coach, the participants increased personal knowledge of the dynamics of the particular
teaching strategies and applied this knowledge to improve their own teaching (Johnson & Johnson, 1987). Both members of the team strengthened "reflective practitioner" skills through this process.

Administrators will need to continue to develop an expanded vision of how teachers might function if the model of teacher as reflective practitioner is to receive a fair opportunity. With the responsibility for reaching educational goals resting squarely on the administrator's shoulders, some have been reluctant to turn over any part of the responsibility for professional growth to individual teachers. This may be true even though the administrator recognizes that the best use of limited supervisory time may be to spend most of it with teachers requiring the full range of administrative support.

Gradually, more administrators appear to be delegating a share of responsibility to capable teachers; recognizing potential for leadership roles. More teacher input is being used in the administration of the school; peer coaching is being tried more frequently as a way to create a dialogue among teachers about teaching, and as a way to break through the isolation, fragmentation, and invisibility of teaching (Wildman & Niles, 1987a).

Statement of the Problem

In the move to capitalize on the benefits of peer coaching, some administrators have assumed that little training is necessary to initiate the process. A modified supervisory or inservice program may be introduced with a peer coaching component and teachers may feel pushed into these roles with little or no preparation. They may experience frustration and discouragement from the lack of success or negative feelings generated by the situation. Successful teachers may feel cut off from the reinforcement of the traditional
supervisory process, or may believe that the expertise to effectively coach each other is insufficient (Brandt, 1987). Classroom isolation, competition for limited recognition, and similar school culture norms tend to discourage peer coaching (Ackland, 1991; Fullan & Myles, 1992; Hargreaves & Dawe, 1989).

The question of how to best prepare teachers for these coaching roles has not been studied in depth until recently. Too few districts offer formal training for the implementation of peer coaching programs. As more teachers are expected to use peer coaching as part of their modified performance evaluation process, staff development program, or teacher induction plan, there is a great need to develop more effective ways to train teachers in peer coaching methods. Administrators need more specific methods to support and evaluate the professional growth of individual teachers participating in these modified forms of supervision. It is also important for administrators to be able to evaluate such a program's overall effectiveness in the school setting (Darling-Hammond & Goodwin, 1993).

Data related to instructional change, studies of effective training, and research on skill transfer support the concept of peer coaching as a training device which can enhance inservice training and bring about significant change in teacher performance. Although a number of models have been developed for training teachers to become peer coaches, few studies have looked closely at the effectiveness of these training models (Legett & Hoyle, 1987; Munroe & Elliot, 1987; Murphy & Eblen, 1987; Raney & Robbins, 1989; Sprague, 1992). Research that examines the relationship of peer coaching training to transfer of the skills to the coaching setting is clearly needed.
Purpose of the Study

The primary purpose of this study was to examine the effects of an inservice module developed by the School Improvement Model (SIM) at Iowa State University to teach strategies in peer coaching, with the goals of providing suggestions for possible improvement of this module for future instructional purposes, and providing suggestions for trainers and administrators in the implementation of peer coaching programs.

This study was designed to answer the following questions:

1. Do participants show an increase in knowledge of peer coaching following participation in the inservice training provided by the SIM module as shown on written pre-training and post-training tests?

2. Which of the strategies taught in the SIM Peer Coaching Module are more likely to be present in the post-training coaching behaviors of participants as shown by judgment panel ratings?

3. Is it possible to predict the success of the participants in the post-observation conference as rated by the judgment panel by looking at the written post-training scores?

4. Is there any relationship between participant demographics of gender, age, and years of teaching experience as reported on the Personal Data form and success in implementing peer coaching as taught in the SIM module?

5. Are there findings from the opinion data as reported on the form that suggest areas for future study?

6. Are there any suggestions from this study which might be used to revise or refine the Peer Coaching Module (SIM) to make it more effective for future inservice training?
Research on these questions will strengthen the knowledge base concerning the
effectiveness of strategies frequently included in the design of peer coaching training
programs for teachers. Use of the more effective techniques will allow for maximum return
on the often limited training time and resources available to the trainer or administrator
seeking to improve the instructional skills of a faculty.

Objectives of the Study

1. To conduct a review of literature pertaining to such related areas as school
climate, staff development, peer coaching, adult learning styles, reflective practice and
peer coaching, self-efficacy and peer coaching; decentering and the coaching relationship.

2. To develop a scale for the judgment panel to use in rating observations of
behaviors during a peer coaching post-observation conference.

3. To develop a valid, discriminating test instrument to measure peer coaching
strategies taught by the module for the purpose of pre/post-training evaluation of
participants, and to develop a demographic opinion questionnaire to be completed by
participants.

4. To secure a) participants for the peer-coaching training, and b) a second group
of experienced evaluators (hold Iowa certification in teacher evaluation, and currently
serve in roles involving teacher evaluation) to perform the ratings on the post-training
videotapes.

5. To arrange for the peer coaching training to be given to participants.

6. To arrange for the videotaping of each of the participants in a simulated peer
coaching situation.
7. To arrange for the training of the experienced evaluators (judgment panel) in rating of peer coaching segments to be viewed on videotape.

8. To arrange for the judgment panel to view and rate the videotapes of the participants’ peer coaching conferences.

9. To collect the data.

10. To analyze the data.

11. To determine whether participants showed an increase in knowledge of peer coaching on the post-treatment written examination.

12. To determine which coaching strategies taught in the module were more likely to be observed in participants’ coaching behavior following the training.

13. To determine whether participant success on the written exam was related to success in the peer coaching setting.

14. To examine possible relationships between participant demographic information given on the questionnaire to success in implementing the elements of the Peer Coaching Module. To examine opinion data.

15. To report results.

16. To use the data obtained to make suggestions for possible revisions of the training module to make it more effective in bringing about the desired peer coaching behaviors in participants.

The Hypotheses

Specific null hypotheses to be tested are the following:

1. There will be no significant difference in participants' knowledge of peer coaching strategies following the training in the School Improvement Model (SIM) Peer
Coaching Module as shown by scores on the written pre-training and post-training Peer Coaching Examination.

2. There will be no significant difference in the degree to which participants include certain strategies taught in the SIM Peer Coaching Module in their peer-coaching behaviors as rated by the judgment panel on the Postobservation Conference Analysis Scale following the training.

3. There will be no relationship between participants' scores on the written post-training Peer Coaching Examination and the ratings given by the judgment panel for participants' performances on the Postobservation Conference Analysis Scale.

4. Participant demographics as reported on the Personal Data form such as age, gender, or years of teaching experience will show no relationship to success in applying the SIM Peer Coaching Module.

Basic Assumptions

The study will be predicated on the following basic assumptions:

1. Significant improvement in teaching behaviors or implementation of new skills requires practice and feedback, which can be provided by peer coaching activities.

2. Peer coaching enhances the effectiveness of transfer of training from inservice to classroom setting, of strategies learned by teachers in traditional inservice programs.

3. Improved training in peer coaching skills will lead to more effective peer coaching experiences for teachers.

4. Teachers are motivated to learn when there is some personal control over the direction and evaluation of learning efforts.
5. Teachers are willing to assist peers in improvement of teaching.

6. Teachers are motivated to improve effectiveness in assisting peers to improve teaching skills.

7. Administrator knowledge of, and support for, peer coaching plays a major role in successful implementation of a peer coaching program in a school.

Delimitations of the Study

This study was designed to examine the effects of the training provided through a Peer Coaching Module used by the School Improvement Model (SIM) researchers at Iowa State University. The training for the 23 subjects included only the model presented by the SIM researchers. Although there were only 23 participants, in many educational research projects small samples are more appropriate than large samples, particularly when time-consuming in-depth techniques are employed such as role-playing and individual ratings (Borg & Gall, 1989). The experimental group included only students enrolled in Educational Administration Course 557 at Iowa State University or enrolled in the Danforth training group. This represented a highly capable, motivated group of teachers seeking administrative training. The analysis of coaching behaviors shown by the participants in the study was limited to coaching behaviors demonstrated in a simulated conference. The experiment was limited to the coaching strategies elicited by the observation of 20 minutes of a teaching tape of Shereene Wilkerson produced by the Association for Supervision and Curriculum Development.
Definition of Terms

The following definitions of terms are presented to give clarity to their use and meaning in this study:

1. **Active listening** — A form of reflective listening in which the listener tries to understand what the speaker is feeling, then puts his understanding into his own words and feeds it back for the speaker's verification.

2. **Constructivism** — A view of learning as a process of personal knowledge construction from experience, not of absorbing and recording pieces of separate information; learning depends on previous knowledge and is closely related to the situation or context in which it takes place.

3. **Decentering** — Any phenomena which concerns itself with how a person reacts or responds to information about another person. Empathy can be thought of as a form of decentering.

4. **Judgment panel** — A group of individuals who are recognized by the professional community as highly knowledgeable and experienced in their field and who agree to provide evaluation or consultation for the purposes of research.

5. **Peer coaching** — A confidential process through which two or more professional colleagues work together to reflect on current practices; expand, refine, and build new skills; share ideas; teach one another; conduct classroom research; or solve problems in the workplace.

6. **Reflective practice** — The practitioner stands back from the situation, analyzes it, recognizes nuances within it, and proposes solutions that are then tested. This can be accomplished individually or in cooperation with others.
7. **Self-efficacy** — Expectancies regarding one's own ability to use or apply knowledge and skill to perform activities that are believed to be linked to the attainment of certain outcomes; a factor in self-esteem but closely aligned with one's ability to achieve desired outcomes.

8. **Self-esteem** — The overall evaluation an individual makes of self and customarily maintains with regard to self; it is expressed through an attitude of approval or disapproval and indicates the degree to which the individual believes the self to be capable, significant, successful, and worthy.
CHAPTER II. REVIEW OF LITERATURE

Introduction

This study investigated a method for training educators in the peer coaching process. Current efforts at restructuring schools have focused on such strategies as school-based management, enhanced roles for teachers in instruction and decision making, collaborative work cultures, and new designs for teaching-learning. These have included new relationships such as mentors, coaches, and other teacher leadership arrangements (Darling-Hammond & Goodwin, 1993; Fullan, 1993; Garmston, 1987; Joyce, Bennett, & Rolheiser-Bennett, 1990; Little, 1989; Osterman & Kottkamp, 1993; Reyes, 1990; Showers, 1987; Sparks, 1990).

This review of literature has been limited to the "non-evaluative" collegial coaching process involving peers who observe and provide feedback to each other. Though mentoring and peer supervision models are strongly related to peer coaching, they have reflected the more evaluative process with one participant perceived as stronger than the other. The studies on mentoring and peer supervision have shown different outcomes from those on peer coaching because of the underlying differences in purpose and procedure.

Peer coaching programs for teachers were first widely advocated as the research in staff development showed the need for methods of providing transfer of existing staff development training to the classroom. Researchers and educators frequently reported improved results from staff development with the addition of peer coaching (Garmston,
1987; Joyce, 1990; Joyce, Showers, & Murphy 1989; Little, 1989; Reyes, 1990; Sparks, 1990).

Recent research on the benefits of peer coaching has resulted in a steady growth of confidence in the process as one of the most effective methods of extending staff development and increasing reflective practice. Teachers are showing more interest in collaboration for the improvement of teaching skills as a way to improve professional expertise and image (Darling-Hammond & Goodwin, 1993; Reyes, 1991).

From these proven benefits, it would seem likely that peer coaching would be in wide use, yet that has not been the case (Ackland, 1991; Fullan & Myles, 1992; Hargreaves & Dawe, 1989; Seller & Hannay, 1988). The norms of classroom isolation, competition, and similar factors present in many school cultures have tended to discourage peer coaching and other initiatives designed to improve the quality of education.

This review of literature explored the current trends in education which have resulted in increased interest in peer coaching as one of the most potentially effective strategies for the improvement of teaching. This review investigated the major reasons why peer coaching has been difficult to implement and sustain in a school. The collegial peer coaching process, and literature describing the relationship of adult learning, reflective practice, self-efficacy, and decentering to peer coaching were included. Methods of successful administrative support for peer coaching were also described in this literature review.
1960s

An intensive study of change in schools has occurred during the last half of the 20th century. In the 1960s the national concern with Sputnik and the fear that the United States was falling behind in math and science technology caused a flurry of major curricular reforms. Organizational innovations such as open schools, flexible scheduling, and team teaching were tried in an attempt to increase academic excellence. The Elementary and Secondary Education Act of 1965 focused on federal and state assistance to the disadvantaged, desegregation, and the implementation of teaching innovations.

As each new teaching innovation was developed and promoted, it was assumed that local schools would quickly adopt these reforms. This did not happen in any consistent manner; schools tried to adopt innovations without investigating the specific site-based needs for change and gave little forethought to follow-through or long-range effects (Darling-Hammond & Goodwin, 1993; Fullan, 1993).

1970s

Early studies in the 1970s pointed to a dismal rate of implementation of practices thought to improve student achievement. Studies of that decade turned toward looking for factors related to successful implementation (Goodlad & Klein, 1970; Lortie, 1975; Sarason, 1971). Local schools were focusing more on the development of the instructional leadership of principals, looking at effective schools research, and using staff development. The greatest successes occurred where local districts and schools reworked and refined the innovations to meet local needs.
As suggested strategies became more plentiful, schools found themselves in the dilemma of trying to implement multiple innovations simultaneously. Teachers responded with "What's the new trend this year?" as increasingly crowded curricular schedules gave less and less time to try new instructional techniques in a manner that would bring about successful results. Teacher willingness to embrace new innovations began to show a steady decline.

1980s

The Nation at Risk study in 1983 pointed out the futility of attempting to implement many separate innovations at one time and called for a comprehensive reform of how schools were designed and operated. More site-based restructuring and a greater state role in funding and reform emerged (Fullan, 1993; Hargreaves & Fullen, 1992). Teacher input in local decisions was strongly encouraged, but studies of schools that successfully implemented this change showed little or no change in instructional effectiveness (Taylor & Teddlie, 1992). Taylor and Teddlie concluded that increasing teachers' participation in decision making did not overcome the norms of autonomy to the degree that would allow a satisfactory comfort level leading to successful collaboration with colleagues on important instructional issues.

Ford (1992) noted that goals cannot be imposed upon people. Goals must become internalized in order to drive changes in behavior. Personal goals may serve as subgoals for other valued desires, or help the individual to avoid an undesirable outcome.
Neither site-based management, nor attempts to add multiple innovations to teaching repertoires on a top-down basis appeared to result in sustained change in classroom practices (Hallinger, Murphy, and Hausman, 1991; Weiss, 1992).

1990s

More recent research and restructuring efforts have turned toward total "systemic" change, encouraged by Peter Senge (1990) and others attempting to look at systems through a more comprehensive lens. Trying to tinker with only one part of the system did not address the "dynamic complexity" of the system, and even the inherent differences between systems made generalization of successful strategies between settings difficult. Obvious interventions did not produce expected outcomes because of unplanned factors which interfered.

Fullan (1993), McLaughlin (1990), and others concluded that it is impossible to make people change, think differently, or develop new skills if there is little understanding of the reasons, or commitment to the theory.

All groups involved in the proposed change must become stakeholders in the planning and eventual outcome of any lasting implementation (Manatt, 1982).

In order to come together to work on these educational changes, school personnel must be able to overcome isolationist norms, while not succumbing to groupthink (Fullan, 1993; Glickman, 1990; Hargreaves & Fullen, 1992; Reyes, 1990).
Norms of isolation

The traditional professional isolation of teachers has limited the access to new ideas and better solutions, and has permitted incompetence to continue to the detriment of both students and teachers. Isolation has contributed to conservatism and resistance to innovation in teaching (Lortie, 1975; Reyes, 1990). Isolation has limited the range of inquiry and learning that takes place. Because of the traditional isolation, it is still generally not the norm for teachers to observe one another. Advice giving has often been perceived as an unwelcome practice or as bragging (Lortie, 1975; Reyes, 1990). Many teachers have continued to feel that asking for assistance from a peer is a sign of incompetence (Rosenholtz, 1989).

Little (1985) noted that peer coaching placed teachers’ self-esteem and professional respect on the line because it required exposing how one taught, how one thought about teaching, and how one planned for teaching to the scrutiny of peers. Little suggested that the time and social aspects of coaching may have interfered with the process certain teachers were already successfully using to bring about self-improvement.

Another factor in the tradition of isolation, suggested by Flinders (1988), is the trend toward expanded curriculum where teachers have felt very pressed for time to plan and perform all the work required to fulfill professional roles. With the rapid pace of decisions, teachers may have had less actual time to reflect on their teaching. Reflection time appears to be an important factor as teachers strive to gain the new insights about teaching and learning that would help refine current practices. In some cases, it may have been only the "perception" of less time that has discouraged teachers with low motivation for change to prioritize time for reflection. Peer coaching, supported by administration,
has shown the potential to provide not only the time to reflect but also the opportunity for colleagues to discuss and share those reflections.

Robbins (1991) suggested that isolation may be related to teacher choice. Many entered the profession because of the autonomy the individual classroom offered. Those teachers chose the isolation and now have found themselves bound by norms that support individual work and accomplishment. Those performance evaluation systems which are highly competitive have also contributed to a distrust of sharing successful strategies.

Fullan and Hargreaves (1991) observed that educational problems are extremely complex, and collaborative "learning enriched" schools do better than those retaining the isolationist traditions of teaching. Site-based management, peer coaching, and mentoring have been increasingly viewed as valued strategies in educational change. In both business and educational fields, long-term, persistent efforts to achieve have been powered more frequently by caring and committed personal relationships than by tangible rewards or intellectual rationales (Johnson & Johnson, 1991; Kouzes & Posner, 1987).

Is cooperation unAmerican (Brandt, 1987a)? How tightly are educators in the United States tied to the norm of individual enterprise? As the highly complex nature of organizations has been recognized, it has become apparent that in order to get things done, collaboration is essential (Fullan, 1993; Garmston, 1987; Reyes, 1990; Senge, 1990).

Learning from colleagues

Most shared learning has tended to take place among colleagues in the same school (Hargreaves & Fullen 1992). Educators have learned from the formal performance
appraisal process, clinical supervision, discussing ideas with other teachers, and peer coaching. Cultures where change has had the best opportunity for success are those where the values, beliefs, and norms supported collaboration and continuous improvement (Reyes, 1990; Senge, 1990).

Structured systems of feedback and review within the classroom, as in some peer coaching programs, have required quite exceptional conditions of trust and understanding among participating teachers of a kind that has not been frequently found in ordinary schools (Hargreaves & Fullan, 1992).

Continuous examination of practice has been shown to be integral to the improvement of practice. School structures that have supported this are the key (Darling-Hammond & Goodwin, 1993). Collegial interaction among teachers promoting the collaborative discussion, observation, analysis, and study of common problems has led to success when teachers have been able to generate the kind of practitioner-based knowledge needed for improvement of practice. Widely employed teaming and peer coaching have been recommended. Promotion of teacher development and growth has been one of the best strategies to improve student achievement. The structure and resources for this development need to be provided by insightful managers (Darling-Hammond & Goodwin, 1993).

**Support for collaboration**

Teachers need adequate time to meet for purposes of planning instructional questions, solving individual and group learning problems, observing, and providing feedback to peers. Teachers need to share in making key educational decisions for the
school and require access to current literature in related fields. Teachers should legitimately spend time in research, peer assistance, and the improvement of practice.

Teachers need to have substitute coverage for visiting other schools and classrooms. More opportunity to observe and get feedback from peers is a basic part of the scheme for staff development in restructured schools (Shankar, 1990). In working with colleagues, we greatly increase the pool of available ideas and resources (Osterman & Kottkamp, 1993).

When schools are effectively changing, a certain amount of chaos is to be expected, and commitment from the top administration to support the changes should be loud and clear. There should be an acceptance of taking risks and making errors in the learning process. It is important for teachers to develop interactional and decision-making skills. Educators need access to a broad range of information, research data, and technical assistance (Garmston, 1987; Harris, 1990; Osterman & Kottkamp, 1993; Robbins, 1991).

The Coaching/Feedback Process

The benefits of peer coaching have been reported by a number of researchers such as Fullen (1993), Garmston (1987), Hargreaves (1992), Johnson and Johnson (1990), Joyce (1990), Little (1989), Naylor (1991), Robbins (1991), Sakoff (1992), Showers (1987), Sparks (1990), and others. Coaching has been viewed as providing companionship, technical feedback, analysis of application, and personal facilitation (Joyce, Bennett, & Rolheiser-Bennett, 1990).

Robbins (1991) cited a number of positive outcomes for peer coaching in giving a strong rationale for this practice. Peer coaching 1) reduced isolation among
teachers, 2) built collaborative norms to enable teachers to give and receive ideas and assistance, 3) created a forum for addressing instructional problems, 4) promoted sharing of successful practices, 5) increased transfer of training from the workshop to the workplace, 6) promoted the teacher as researcher, and 7) encouraged reflective practice (p. 8).

Robbins (1991) reported that teachers gained 1) an improved sense of professional skill, 2) an enhanced ability to analyze lessons, 3) a better understanding of teaching and learning, 4) a wider repertoire of instructional strategies, 5) an increased sense of efficacy, 6) stronger professional ties with colleagues, 7) improved teaching performance, 8) enhanced student progress, 9) a better articulated curriculum, 10) a more cohesive school climate, and 11) a positive school climate (p. 14).

Joyce and Showers (1982) described five major elements provided by peer coaching but difficult to structure otherwise:

1. Provision of companionship—coaching provided interchange with another human being during a difficult process. The coaching relationship resulted in the possibility of mutual reflection, the checking of perceptions, the sharing of frustration and success, and the informal thinking through of mutual problems. Companionship provided reassurance that problems are normal and helped participants overcome the tendency to avoid practice which may accompany the awkward period.

2. Provision of technical feedback—teachers received training to provide helpful feedback to one another. Teachers pointed out omissions, noted how materials were used and checked to see that all parts of a strategy had been used. The provision of technical feedback helped keep teachers focused on the goal of perfecting the skill and
working through problems. The act of giving feedback was also beneficial to the individual providing it. The coaching partner had the privilege of seeing a number of trials of the new model carried out by another skilled teacher.

3. Analysis of application—two key skills gained from the transfer period were the abilities to (a) figure out when it is appropriate to use a new model, and (b) discern what will be achieved as a consequence. A peer was able to help with the decisions about how well a teaching strategy worked in a given situation and how results could be measured.

4. Adaptation to the students—students have had to learn what is expected of them, how to meet the demands of the new process, and how to gauge progress. The teacher may have needed to learn to modify the strategy to fit the students. In the early stages, adaptation to the students is a relatively difficult process where direct assistance and companionship from a peer can be very helpful. In this situation the coach helped the teacher "read" the student responses and make the necessary changes.

5. Facilitation—the coach has had the major task of providing enough encouragement so that the participant will undertake the necessary practice. Changing what one does can unbalance personal equilibrium. For example, adjusting the grip on a bat or golf club can disrupt one's entire game. In the same way, initiating a cooperative learning lesson may not fit smoothly with a teacher's existing practice, and support from a peer can mean the difference between continuing or dropping the new, difficult challenge (pp. 6-7).

The two most cited areas of successful peer coaching have involved facilitation of transfer of training and the development of norms of collegiality and experimentation. Interviews with teachers indicated that the effects of coaching are more extensive than the
mastery and integration of new knowledge and skill by teachers working alone. The
development of school norms that support the continuous study and improvement of
teaching have apparently built capability for other kinds of change (Little, 1982).

**Advanced stages of learning**

Joyce and Showers (1988) identified a second stage of learning beyond a basic
mastery level, where the teacher needed to consolidate a strategy and adapt it to a
personal repertoire, but skill alone wasn't enough to allow the teacher to accomplish those
tasks. Companionship, especially with peers, appeared to be important for this second
stage. Joyce reported that much of the learning from coaching may occur from watching
another work, as compared to having one's own work observed.

Most teachers have not begun to transfer the new model into freely chosen teaching
strategies until the coaching component has been added and implemented effectively
(Joyce, 1986). Even with the strongest training, there has been a period of discomfort
when using any new skill. Both novice and experienced teachers have needed to be
aware throughout the training process of the importance of getting prepared for a second
stage of learning that will come after the skill has been first attempted. Teachers have
also needed to learn the important component of "executive control"; understanding why
the strategy works, when it is useful, and how to adapt it to varying content and students
(Joyce & Showers, 1982).

Joyce (1986) noted that even though the new skill may have been perfected in parts
and practiced thoroughly in simulated conditions, the problem of transfer of skills may
have occurred. It takes time to adjust; the discomfort of trying something new can be
enough to force the teacher to return to a more comfortable, if less efficient, teaching mode. The model of coaching has helped reinforce the concepts of necessary practice and feedback to guide performance. The importance of continuing to try when results are discouraging has verified the need for coaching and support during this transfer process.

**Training for coaching**

Coaching appears to be most appropriate when teachers wish to acquire complex strategies which require new ways of thinking about learning objectives, and seek the best ways for students to achieve them. Coaching teams have often been established during training given on a teaching strategy or curriculum innovation. The teams have learned about the new skills, seen them demonstrated, practiced them, and learned to provide feedback to one another as they experimented with the skills. At that point coaching has become a cycle of observation and discussion sessions. Teachers have taken turns comparing performances with the demonstrated model through looking at the presence or absence of specified behaviors and the degree of thoroughness shown. Teachers have developed practical feedback forms and provided observational data to each other. It has been difficult to learn to provide feedback which is accurate, specific, and non-evaluative.

Showers (1985) reported that coaching moves to a more complex stage as skills develop and solidify. Participants begin to collaborate on a mutual examination of appropriate use of a new teaching strategy. Ideally, teachers begin to transfer the skill to new areas not demonstrated directly in the training, problem solve unique problems, and operate in a spirit of exploration.
Who should coach?

Although supervisors can and do coach effectively, the logistics involved in a dynamic growing and learning process in schools have often favored peer coaches; teacher teams can be built and taught the coaching skills during training, and may have more time to provide help on a typical day. Teachers should practice a skill at least thirty times to make it as easy to use as the existing repertoire (Garmston, 1987; Robbins, 1991; Showers, 1985). When administrators do take the role as coach, emphasis should be placed on descriptive rather than evaluative feedback (Osterman & Kottkamp, 1993).

Research in schools

Sprague (1992) analyzed personality type in a peer coaching project involving seven middle school teachers. Even though the number of participants was small and there was no control group, there were interesting conclusions worthy of further study: 1) regardless of personality type, teachers had successfully implemented new teaching models, however, extroverted types seem to have more rapidly achieved higher levels of implementation; 2) teachers at the beginning and end points of careers tended not to implement new models; 3) peer coaching was a powerful vehicle for aiding implementation of a new teaching model; 4) teachers perceived positive student response as a primary source of motivation for continuing to use a new teaching model; and 5) the perception of a lack of time to prepare lessons and reach instructional goals was a major constraint to using a new teaching model.

Licklider (1986) studied a site-based peer coaching program involving eleven teachers trying to improve questioning strategies in two secondary schools. Participants
perceived improvement in use of every questioning strategy examined and felt that the component of peer coaching most influenced the growth. Participants also reported being more positive about several aspects of collegial relations and professional growth as a result of the activities involved in the model.

Heberly (1992) compared ten teachers participating in peer coaching with a matched group of ten who were not peer coaching. Both groups took part in four monthly teaching skills workshops. Conclusions were: 1) workshops to increase skills in classrooms needed to include peer coaching; 2) on-going training designs needed to incorporate a peer coaching strand; 3) peer coaching was needed to bring about changes in classrooms; 4) peer coaching time was ideally made available during the contract day; and 5) teachers needed to continue peer coaching on a regular basis. Limited administrative support and inadequate peer coaching training were cited as reasons teachers had failed to adapt peer coaching for further classroom use.

Ehrgott (1993) evaluated responses from 131 questionnaires from elementary and secondary schools in California to determine administrator perceptions of the scale, causes, and difficulties of marginal teachers. Appropriate response strategies advocated by these administrators were also examined in this study. The major perceived causes of marginal teaching included the inability to control classrooms, lack of motivation, burnout, and personal crises. These findings supported related research cited in the study (Frase & Hetzel, 1990; Sweeney & Manatt, 1984). The responses from the sample of administrators indicated that "Continuous Classroom Observation" by the site administrator (73%) and "Peer Coaching" (68%) were the two most frequently recommended effective strategies for changing the performance of marginal teachers.
Adult Learning and Peer Coaching

How and why do adults learn? Does adult learning differ significantly from that of younger learners? Malcolm Knowles (Moore, 1988) has been generally credited with defining the field of teaching adults as "andragogy." Within these widely accepted theories was the assumption that as adults matured, life became more self-directed. There were more experiences that could be used as learning resources; adults tended to learn for specific purposes, and wanted to apply what had been learned immediately. Roles and stages of development were described as major factors of adult learning even though all adults did not move through these stages at the same rate or time in their lives, and some adults did not pass through some of these stages at all.

Research by Rebore (1987) suggested the following points related to adult learning:

1. The learning environment must be effectively managed. A comfortable and stimulating environment enhances learning. The instruction should take place at a time of day when the learners are not fatigued.

2. Instruction should have some immediate practical application for the adult learner. Adults generally can learn more material in less time than children, but it is important for adults to see how the material can be directly applied (p. 158).

The root of differences between adults and preadults as learners lies in the nature of life experiences. Adults know more than children and youth, and they also know "differently" because of a more complex cognitive structure and changes in cognitive processes that occur with maturity. Adults have real-world experience, and knowing more actually aids in acquiring new knowledge. Two strong differences between child and adult learning appear to be: 1) Adults are more self-directed and want to be able to apply
whatever knowledge and skill they gain today to living more effectively tomorrow. Accordingly, learning experiences should be organized around competency-development categories. 2) Adults are performance-centered in their orientation to learning. Adults bring to a group a considerable amount of relevant experience and a definite intention to apply at work or home whatever problem solving skills and knowledge they may acquire (Moore, 1988, p.4).

Dalellew and Martinez (1988) observed that the experience each learner brings to the group is an important resource for learning if it is shared with the teacher and other students. The appropriate approach is to involve the learners as co-inquirers and to utilize group discussion, case studies, simulations, and other experiential instructional methods. Dalellew and Martinez (1988) summarized the following ideas about adult learners:

1. The adult learner tends to control what is learned, selecting new information and/or deciding how to use it.

2. Training programs for adults should help learners achieve self-direction and empowerment.

3. Adults tend to be problem-centered rather than subject-centered learners and learn better through practical applications of what they have learned.

4. Adult learners must be treated as adults and respected as self-directed persons. They learn best in non-threatening environments of trust and mutual respect.

5. The optimum role of the adult learner in the learning situation is of a self-directed, self-motivated manager of personal learning who collaborates as an active participant in the learning process and takes responsibility for learning.

6. Adults learn in a variety of ways and there is no one right method of learning.
7. Continued learning depends on achieving satisfaction, especially in the sense of making progress toward reaching goals which reflect the learner's own values.

8. A goal cannot be readily imposed upon adults. An individual must adopt it as a personal challenge for it to perform a directive function. Adults often accept a goal if it is a subgoal needed to reach some other personally valued achievement. It either helps produce some desired result or allows one to avoid an unwanted result (p. 28).

Constructivism and adult learning

Adults tend to construct their own knowledge, as children do, but in more complex ways. The energy necessary for construction of problem solutions demands commitment, and commitment evolves as the individual "constructs" personal beliefs (Davis, Maher, & Noddings, 1990; Lieberman, 1992; Peterson & Knapp, 1993; Resnick & Klopfer, 1989). Designing, thinking, changing, and evaluating, in response to a personal felt need help to create more interest and energy for a project. Learning to clarify the nature of one's own questions, to pose questions in terms that can be explored, and to interpret the results in light of new knowledge generated are important skills for changing practice in teaching. Adult education should foster critical, reflective thinking. Case studies, role playing, and peer coaching help foster reflective thinking (Clark & Peterson, 1986; Osterman & Kottkamp, 1993).

Ideal settings for adult learning

We need to create environments where learners are encouraged to think and explore for themselves. Educators have frequently been asked to adopt a new
perspective on instruction, while inner perspectives and hypotheses on how students learn have become dormant as the educator moved to apply the new technique in a rote manner.

Slavin (1990) suggested that to learn to be a reflective practitioner as a teacher demands regular reflection and analysis of personal perspectives on learning. Help is often needed to clarify and assess those perspectives and to align teaching practices in accordance with them. Changing one's mind is an invaluable element in the learning process. As teachers become more "facilitative" of learning and less "dispensers" of knowledge, they generally learn to become more responsible for their own learning and growth (Slavin, 1990).

The responsibility for learning should rest with each individual. Teachers need to be thinking, exploring individuals who generate hypotheses and test them out. Having an opportunity to present one's own ideas, as well as being permitted to hear and reflect on the ideas of others, is an empowering experience. The benefits of discourse with others, particularly with peers, facilitates the meaning-making process. The benefits of peer-to-peer dialogue is the foundation upon which cooperative learning is structured. Discourse with one's peer group is a critical factor in learning and development. Peer coaching allows teachers to elaborate on personal hypotheses and to recognize and assess errors in thinking (Slavin, 1990).

**Developmental age factors**

Chronological age may strongly affect how open a teacher might be to the cooperative setting of peer coaching. Certain of life's transitions can serve as reasons for
learning. As one moves from one status in life to another it often becomes necessary to learn new knowledge, skills, attitudes, and values. Experiential learning is a major form of adult education and a major form of learning on the job. Experiential learning refers to learning in which the learner is directly in touch with the realities being studied. It occurs most readily when skills and knowledge can be applied in an immediate, relevant, and meaningful setting and when the learner can receive timely feedback on performance (Evans, 1989; Krupp, 1986).

The teaching force is now composed mainly of people in middle to late career who have been teaching in their current school for most of their professional lives (Evans, 1989). At mid-career professionals may be divided into recognizable types along a continuum of competence, involvement, and growth. On one end are key members who seem endlessly engaged and self-renewing, who sustain both enthusiasm and performance at exceptional levels. On the lower end are stable and stagnant individuals showing a much lower rate of growth. This lethargy may be a response to diminished expectations held by self and others, and is often accompanied by a slide toward less interest and effort at work (Killion, 1988b).

Developmental stage factors

Developmental stage theorists such as Piaget and Kohlberg (Killion, 1988b) described adult stages characterized by particular levels of cognitive complexity at which adults operate. Persons who operate at a higher stage of development function with more complexity, possess a broader range of behaviors, analyze problems from a multidimensional perspective and respond more appropriately to the needs of others. Age
is a less significant factor than level of cognitive development. Both age and stage factors are likely to be influencing an individual at the same time (Killion, 1988b).

Reflective Practice and Peer Coaching

Reflective practice, or inquiry-oriented teaching, engages the teacher in a cycle of thought and action based on professional experiences. Only a few researchers and practitioners were using this terminology until Schön (1983, 1987) began to write about reflective practice in education and similar professions.

After observing the work of architects and other professionals to see how they reflected on their actions, Schön found little emphasis on traditional problem solving. Instead, these professionals engaged in an open debate about the nature of the decisions, the value of the goals, and the ultimate implications of the actions.

Among teachers Schön found a similar artistic comfort with ambiguity, acceptance of more than one right answer, and recognition of the dynamic complexity of professional practice. Schön observed that as teachers described, analyzed, and made inferences about classroom events, individual perspectives were created by drawing on past and present personal and professional experiences in schools. These included theoretical knowledge, self-image, and efficacy; and interactions with peers, mentors, supervisors, and children in school. Such practices as keeping a reflective journal or reflecting with peers over shared observations contributed to the establishment of a reflective mode of practice.

Schön noted best results when administrators moved from a Model I (control) mode to a Model II (collaborative) mode to encourage personal acceptance of responsibility for
change in teachers. Schön pointed out the value of helping teachers analyze "theories in use" rather than "espoused" theories, and to look for differences between the two to find prime areas for change (Schön, 1991).

According to Senge (1990), providing people with clear information about performance enables them to develop a better picture of the current reality. The contrast between what is and what we would like, the contrast between the reality and the vision is the source of the creative tension essential to personal and organizational growth. Through the reflective process individuals become more aware of these discrepancies.

Osterman and Kottkamp (1993) elaborated on the values of reflective practice, noting that the immediate as well as the ultimate purpose of reflective professional development is not knowledge acquisition per se but behavioral change and improved performance; attention should be focused directly on behavior observed and analyzed; change is a process begun not by learning a new idea from an expert but by recognition that something is not exactly right in one's own practice. The motivating force behind change is not the goodness or usefulness of an idea from an external source but the desire to function well in a professional capacity coupled with the awareness that current behavior is not fully reaching this goal. A coach can be helpful in providing accurate descriptions of observations (Osterman & Kottkamp, 1993).

Sparks (1987), Wildman, and Niles (1987a), and Ostermann and Kottkamp (1993), in reporting research on reflective practice, cited the importance of reflection journals, video and audiotaped lessons for self-analysis, collaborative action research, and peer coaching in the development of reflective thinking.
Wildman, Niles, Magliaro, and McLaughlin (1990) reported on a three-year study of reflective practice involving fifteen pairs of teachers. It was concluded that the teachers in the project seemed to organize reflective thinking around shared problems, mentoring episodes involving modeling and coaching, and self-analytic needs. This study also indicated that teachers tended to reflect on teaching "together" when circumstances such as proximity, common problems, shared theories about teaching, or social compatibility caused a bonding to develop. These researchers postulated that reflection can be an important tool in teachers' growth and that improvement is unlikely without systematic reflection. In this study, peer collaboration and coaching contributed strongly to the increase in reflective practice.

Pugach and Johnson (1990) described a similar three-year project involving peer collaboration with teacher pairs to develop reflective practice. It was reported that teachers were able to solve 86 percent of teaching problems addressed through the use of peer collaboration. It was also noted that peer feedback and support appeared to facilitate self-reflection on the part of the teachers, and result in improved practice. Pugach and Johnson also concluded that one of the most significant outcomes of the peer collaboration and peer coaching was the process of engaging each teacher in a guided, supportive, and collegial process of considering professional problems in order to encourage new approaches. Through fostering an experimental attitude, new perspectives were evoked that led to new solutions. Peer coaching brought to the surface many ideas, nuances, and characteristics often missed in isolated practice. It increased the disposition of even the most skilled teachers to engage in reflective practice (Pugach & Johnson, 1990).
Self-efficacy and Peer Coaching

Self-efficacy has been defined as the degree of confidence one has in one's own ability to use or apply knowledge and skill to bring about certain outcomes (Bandura, 1986). Though difficult to define and study, personal teaching efficacy has been described by Bandura as the beliefs that individual teachers hold about their own capacities or abilities to act in ways that bring about student learning and development (Bandura, 1977, 1982, 1986).

In the mid-'70s, the Rand Corporation studies first recognized a sense of self-efficacy as one of the most significant factors in successful teachers' work (Berman & McLaughlin, 1977).

Albert Bandura developed a concept and theory of self-efficacy that is widely cited today. Bandura (1986) observed that an individual's sense of self-efficacy appeared to be less a reflection of actual performance than the manner in which the individual interpreted that performance. Bandura (1986) defined three areas of thought and action which might be affected by an individual's level of self-efficacy:

1. A sense of self-efficacy influences an individual's decisions regarding choices of activities, tasks, and social situations. A strong sense of self-efficacy is associated with active engagement in activities which require individual knowledge or skills which contribute to the growth of individual competencies, whereas weak self-efficacy is associated with avoidance of challenging environments.

2. Individuals with a stronger sense of self-efficacy are more likely to expend greater effort and persist longer in that effort than people with a weaker sense of self-efficacy.
3. A person with a weaker sense of self-efficacy is more likely than a person with a stronger sense of self-efficacy to dwell upon personal deficiencies and view potential difficulties and problems as more formidable than they really are.

Bandura concluded that individuals are motivated in large part by fears of failure, especially repeated failure, where such failure may reflect individual ability as opposed to effort; where such failure threatens self-esteem and social valuation (p. 212).

These risks to esteem and prestige may be powerful in a culture such as ours; dominated as it is by values and norms stressing individual competence, performance, and accomplishment (Smylie, 1990).

The Rand studies reported that the level of teacher perception of efficacy was among the most significant predictors of amounts of change in teachers' classroom practice, proportions of innovation, project goals achieved, and continued use of innovative techniques, methods, and materials (Berman & McLaughlin, 1977).

Berman & McLaughlin found positive relationships between teacher sense of efficacy and teacher involvement in decision making, collegial support of classroom innovations, and teacher collaboration. These findings appear to support Bandura's theory that teachers' sense of efficacy is associated with access to information about individual classroom performances and the effects of these performances on children. These sources of information include direct experience of student performance, vicarious experience, verbal persuasion through collegial interaction, and feedback from other teachers and administrators. This interpretation is not absolutely direct and clear, however, because of the above noted difficulties with definition and measurement of
teacher sense of efficacy, and the possible variance of self-efficacy from task to task (Smylie, 1990).

In general, however, teacher perception of efficacy has been found to relate significantly to improved teaching and is increased by feedback regarding successful performance. In order to enhance teacher efficacy, it is necessary to support teacher access to sources of information regarding effective practice, personal practice, and the outcomes of that practice. Performance evaluation provides this feedback and peer coaching has the potential for providing more frequent feedback along these lines to a teacher within the typical school setting (Smylie, 1990).

Self-esteem and peer coaching

Pozarny (1991) studied the relationship between teachers' self-esteem and teacher attitudes toward peer coaching. It was found that one dimension of teachers' self-esteem (successfulness) affected teachers' attitudes toward the benefits of peer coaching. The other dimension of teachers' self-esteem (pride) did not reliably predict attitudes toward the benefits of peer coaching or comfort in using the peer coaching process. The degree of self-consciousness was also found to affect feelings of success and attitudes toward peer coaching.

Gray (1989) reported that individuals with a higher sense of self-esteem are more likely to try higher level positions, and to participate in a wider variety and complexity of learning experiences and learning content.
Empathy (Decentering) and Peer Coaching

"Decentering" is a relatively new area of study in interpersonal relations. Decentering has been defined as including any phenomenon which concerns itself with how an individual reacts or responds to information known about another person (Johnson, Powell, & Reynolds, 1983). Empathy is considered one of several qualities that make up the decentering skill.

Empathy is considered an important characteristic in the overall interpersonal and communication skills of an individual. Redmond (1989) studied the functions of empathy and noted that empathy enhanced a person's understanding of others. It helped an individual to reflect on that which had been perceived and created a supportive, confirming atmosphere for the other individual in a helping relationship. As trust developed between two people, self-disclosure increased, providing more information on which to develop empathy.

Redmond observed that empathy can have a positive impact on the growth of sharing of information in a relationship and was frequently associated with the development of a helping relationship between two people. When peers provided such support as recognition, acknowledgment and endorsement, the relationship grew. As individuals increased self-disclosure, confirming each other's sense of self-efficacy, a supportive communication atmosphere was created.

Empathy increased the potential for accurate and complete reflection. It increased the likelihood of the growth of positive feelings between the participants, while less empathetic "neutral" feedback from the peer resulted in a more defensive atmosphere.
As Redmond observed, much more research is needed before the contribution of
decentering, including empathy, is well understood. The development of empathy
appeared to produce confirming/supportive communication, helping and comforting
behaviors, and served as a means of increasing the accuracy of reflective communication
between individuals (Redmond, 1987).

Garmston (1987) stated that successful peer coaching appears to require trust
between participants and the ability to empathize appears to enhance this relationship. As
more research is completed in this area, methods to increase the potential for the
development of empathy may result in better preparation for peer coaching experiences.

**Administrator's Role in Support of Peer Coaching**

Administrative support for peer coaching by both superintendents and principals has
been identified as the major factor affecting the success of the program in schools
(Bowes, 1990; Craven, 1989; Garmston, 1987; Landau, 1991; Lieberman & Miller, 1981;
Stallings & Mohlman, 1981; Wildman, Niles, Magliaro, & McLaughlin, 1990; Osterman &
Kottkamp, 1993). A school may not have an appropriate climate to support a peer
coaching program. It is important to look carefully at a school to determine whether peer
coaching would have an opportunity to succeed or endure for enough time to bring about
any significant changes in teacher effectiveness (Little, 1986; Reyes, 1990; Robbins,

In a school where there are strong cultural norms for competition and against sharing
or experimentation, attempts to establish a peer coaching program may result in "contrived
collegiality" at best (Hargreaves & Fullan, 1992). Hargreaves and Fullen noted that
contrived collegiality may actually inhibit the development of real sharing among staff members. Contrived collegiality makes collaboration compulsory rather than voluntary, forced rather than facilitated, formal and scheduled rather than informal and evolutionary. It may be directed toward administrative priorities more than teacher concerns and be predictable rather than unpredictable in its outcomes. Because of these factors it could become a forced, top-down, management-directed initiative with the expected results (Hargreaves & Fullan, 1992).

An administrator is advised to weigh the potential benefits against the resources and time needed for planning, implementing, and maintaining a peer coaching program.

Implementing a peer coaching program cannot be seen as a direct method to initiate a culture of collaboration. It does appear, however, that peer coaching can accelerate the development of collegiality when the school culture is already showing signs of improvement through a combination of other strategies used by an administrator (Hargreaves & Fullen, 1992, Little, 1982).

Robbins (1991) recommended the following points for administrators to consider in initiating a peer coaching program:

1. Participation in peer coaching should be on a voluntary basis with the choice of partners and length of time spent with the same coach left to teacher discretion.

2. Recognize that to be most effective, peer coaching must be totally separated from the performance evaluation process. Peers also must guard against giving judgmental feedback of any kind in the sharing of observation data.

3. Peer coaching is based on professional, not social dialogue. Conversations need to remain focused on the tasks most of the time to be effective.
4. Peer coaching needs to be based on a stance of equality with competition eliminated wherever possible.

5. Coaching should remain supportive rather than evaluative, even when the teacher tries to elicit judgmental responses. Instead, the coach needs to help the teacher compare what was expected with what happened and to analyze what might have contributed to the outcomes of the lesson.

6. Interactions between the coach and the inviting teacher need to remain confidential and nonjudgmental. If the teacher does not ask for praise and the coach offers it after the observation, it is as if the coach has overstepped the boundaries of what the inviting teacher wanted to discuss about the lesson.

7. The focus of coaching visits should vary to meet the needs of the inviting teacher.

8. Teachers need to choose whether or not to participate in coaching. Mandated coaching is rarely effective.

9. It is important to solicit teacher input regarding the possible features of the program and stages of implementation.

10. Administrators need to see that adequate training and guided experiences with the peer coaching process are provided.

11. Administrators need to provide adequate time and support for the preobservation, observation, and postobservation process. Even when substitute teachers are provided, teachers may need time to prepare more specific lesson plans for optimum coverage of the class by the substitute. Teachers need protection from outside interference and competing demands.
12. Administrators need to convey the message that the staff is "good but growing." The faculty should understand that the introduction of peer coaching does not mean that what is currently happening in classrooms is incorrect. Staff and administrator must share a reasonable level of trust; a sense that people care for one another and are willing to help each other (p. 53).

Garmston (1987) gave the following recommendations for effective administrative support for peer coaching: 1) Select a coaching model most likely to produce the outcomes the school deems important; 2) demonstrate that administration values the peer coaching program (providing resources, structuring coaching teams, acknowledging coaching practices, and devoting staff meetings to coaching topics); 3) provide a focus for the coaching activity; and 4) provide adequate training for the coaches and model positive coaching behaviors (p. 22).

Osterman and Kottkamp (1993) recommended that the supervisor or coach engage in a reflective dialogue with the person whose work has been observed; good supervision and reflective practice were found to be interchangeable.

Summary

As school cultures grow toward stronger norms of collaboration, peer coaching is increasingly recognized as a highly effective strategy for improving teacher performance and student achievement. Peer coaching provides the unique advantages of strengthening staff development and increasing the experimentation and reflective practice of teachers. Norms of isolation, competition, and problems with logistics tend to discourage teachers from the sharing necessary for peer coaching. Continuing research
in staff development, reflective practice, adult learning, cooperative learning, self-efficacy, and related areas are providing additional endorsement for the values to be gained from a well-designed and supported peer coaching program. Table 1 summarizes a number of key studies related to peer coaching from 1980 to the present.
Table 1. Studies related to peer coaching

<table>
<thead>
<tr>
<th>Study</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joyce &amp; Showers (1980)</td>
<td>Showed value of trainer coaching in classroom in addition to staff development workshops.</td>
</tr>
<tr>
<td>Little (1982)</td>
<td>Showed importance of school norms of collegiality and experimentation for effective staff development.</td>
</tr>
<tr>
<td>Showers (1985)</td>
<td>Advocated separating peer coaching from any evaluative component. Described peer coaching process of observations followed by non-evaluative feedback and encouragement of experimentation.</td>
</tr>
<tr>
<td>Little (1985)</td>
<td>Trained cadre teachers to return to home school to assist peers in instituting classroom management skills.</td>
</tr>
<tr>
<td>Licklider (1986)</td>
<td>Described value of site-based peer coaching for improving teachers' questioning strategies, increasing collegial relations, and promoting professional growth.</td>
</tr>
<tr>
<td>Barnes &amp; Murphy (1987)</td>
<td>Described success of administrators in providing effective coaching when evaluative component was reduced, and peer examination of current practice.</td>
</tr>
<tr>
<td>Study</td>
<td>Finding</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Rogers (1987)</td>
<td>Cited importance of &quot;reciprocal&quot; coaching arrangement between peers, advocated use of videotaping to help with analysis of teaching in peer coaching.</td>
</tr>
<tr>
<td>Murphy &amp; Eblen (1987)</td>
<td>Demonstrated value of forms in preobservation conference to help peers plan data collection and sharing process for postobservation conference. Documented importance of norms of 1) perception of staff as &quot;good&quot; but growing, 2) reasonable levels of trust, 3) a sense of caring for the well-being of peers.</td>
</tr>
<tr>
<td>Sparks &amp; Bruder (1987)</td>
<td>Noted value of using peer observers to help teachers examine current classroom practices when there is no accompanying staff development training.</td>
</tr>
<tr>
<td>Garmston (1987)</td>
<td>Described three models of peer coaching: 1) technical coaching for transfer of training, 2) collegial coaching for refining current practice, and 3) challenge coaching where teams of teachers resolve persistent teaching problems.</td>
</tr>
<tr>
<td>Wildman &amp; Niles (1987a)</td>
<td>Reported increased use of peer coaching for purposes of dialogue about teaching, reducing isolation of teaching.</td>
</tr>
<tr>
<td>Joyce &amp; Showers (1988)</td>
<td>Described how peer coaching contributed to second stage of learning where teacher developed &quot;executive control.&quot;</td>
</tr>
<tr>
<td>Wolfe &amp; Robbins (1989)</td>
<td>Described three styles of coaching: 1) mirroring—coach only records data, 2) collaborative—peers problem solve together, c) expert—coach as mentor teacher.</td>
</tr>
<tr>
<td>Smylie (1989)</td>
<td>Described impact of changing school culture and importance of norms of autonomy, privacy, and equality in peer coaching relationships.</td>
</tr>
</tbody>
</table>
Table 1. Continued

<table>
<thead>
<tr>
<th>Study</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cole (1990)</td>
<td>Reported the increased use of peer coaching in teacher induction programs.</td>
</tr>
<tr>
<td>Little (1990)</td>
<td>Described how to alleviate threats to teachers' self-esteem with peer coaching: 1) proceed from stance of adequacy, 2) reciprocity, 3) peer's right to make own choices, 4) gear toward success and satisfaction.</td>
</tr>
<tr>
<td>Ackland (1991)</td>
<td>Documented increase in number of teachers capable of improving personal performance and the performance of others without continuous, direct administrative supervision.</td>
</tr>
<tr>
<td>Heberly (1991)</td>
<td>Cited importance of including peer coaching training in workshops on a continuing basis, making time for peer coaching during the instructional day, and providing steady encouragement to continue coaching.</td>
</tr>
<tr>
<td>Pozarny (1991)</td>
<td>Reported the importance of strong self-esteem on the part of effective peer coaches.</td>
</tr>
<tr>
<td>Jordan (1992)</td>
<td>Reported the importance of administrative support for peer coaching to maximize continued use.</td>
</tr>
<tr>
<td>Sprague (1992)</td>
<td>Found that extroverted teachers in mid-career were more likely to successfully peer coach. Positive student response motivated teachers to continue with new teaching model; time was the strongest constraint limiting teacher use of new instructional strategies.</td>
</tr>
<tr>
<td>Darling-Hammond &amp; Goodwin (1993)</td>
<td>Documented growth in teacher willingness to coach for the improvement of teaching as a way to improve professional expertise and image. Described school structures needed to support continuous examination of practice.</td>
</tr>
</tbody>
</table>
CHAPTER III. METHODS AND PROCEDURES

This chapter describes the procedures followed to conduct this study of the effects of the School Improvement Model (SIM) Peer Coaching Module. The chapter is divided into six sections: 1) design of the study; 2) the population; 3) research questions; 4) the description of the inservice; 5) instrumentation; and (6) data analysis procedures.

Design of the Study

This study used a single group, quasi-experimental design with written pre/post-training tests, and judgment-panel ratings of participant performance from videotapes following the training. Demographic and opinion data were elicited from participants in a questionnaire format. This design is particularly useful when all the individuals eligible for the treatment must be treated alike and an untreated comparison group is not feasible. The following steps were taken to implement this study: 1) review of literature to identify key skills to be evaluated; 2) development of a written pre/post test, observer-rating scale, and participant questionnaire; 3) identification of two groups (a) participants for the peer-coaching training and (b) a group of at least 10 experienced raters (judgment panel) serving in roles involving teacher observation and evaluation to complete the performance evaluation from videotapes; 4) collection of demographic and opinion data from the participants; 5) administration of the written pre-training test to gather baseline data; 6) administration of the peer coaching training to the participants; 7) completion of videotapes of each participant conducting a postobservation conference; 8) administration of the
written post-training test; 9) training of videotape raters; 10) collection of data from ratings of the video tapes; and 11) data analysis.

**Population**

**Participants** The 23 participants in the peer coaching training were all teachers enrolled in either the Danforth Cadre training or the Educational Administration 557 course at Iowa State University during the summer of 1991. The Danforth training was designed to prepare interested teachers for educational administration roles. Inclusion in this group was competitive and approximately 50 percent of the applicants were eliminated by screening, so the participants would be considered a select group of teachers. Participants in Educational Administration 557 at Iowa State University were also educators who were preparing for administrative roles in education.

Pertinent demographic data about all of the participants are presented in Tables 2-4. This group consisted of 16 females and seven males. Fourteen of the participants were in the 31-40 years of age range, seven were within the range of 41-50 years of age. One participant was in the 21-30 range and one was in the 51-60 range. The participants averaged 12 years of teaching experience, and the majority were teaching in the secondary school setting. Five of the participants had been involved in some form of peer coaching prior to the training, but only one had five years of experience in peer coaching, and none had received formal training for coaching.

**Judgment panel** The ten videotape raters were all school administrators credited with at least two years of successful experience in evaluation, completion of the 30-hour
Table 2. Distribution of participants by age (N = 23)

<table>
<thead>
<tr>
<th>Age of teacher</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-30 years</td>
<td>1</td>
<td>4.3</td>
</tr>
<tr>
<td>31-40 years</td>
<td>14</td>
<td>60.9</td>
</tr>
<tr>
<td>41-50 years</td>
<td>7</td>
<td>30.4</td>
</tr>
<tr>
<td>51-60 years</td>
<td>1</td>
<td>4.3</td>
</tr>
</tbody>
</table>

Table 3. Distribution of participants by years of teaching experience (N = 23)

<table>
<thead>
<tr>
<th>Range in years of teaching experience</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>1-5 years</td>
<td>4</td>
</tr>
<tr>
<td>6-10 years</td>
<td>9</td>
</tr>
<tr>
<td>11-15 years</td>
<td>4</td>
</tr>
<tr>
<td>16-20 years</td>
<td>5</td>
</tr>
<tr>
<td>21-25 years</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 4. Distribution of years taught at school levels by participants (N = 255)

<table>
<thead>
<tr>
<th>School type</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary K-6</td>
<td>80</td>
<td>31.3</td>
</tr>
<tr>
<td>Secondary 7-12</td>
<td>174</td>
<td>68.2</td>
</tr>
<tr>
<td>College</td>
<td>1</td>
<td>0.4</td>
</tr>
</tbody>
</table>
Research Questions

The study was designed to gather data to examine the following research questions:

1. Is there an increase in participant knowledge of peer coaching resulting from participation in the inservice training provided in this module as shown by written pre/post tests?

2. Which of the strategies taught in the inservice module are more likely to be shown in the post-training coaching behaviors of participants as shown by judgment panel ratings of performance in a videotaped simulated coaching conference?

3. Is it possible to predict the success of the participants in the postobservation conference as rated by the judgment panel by looking at the written post-training exam scores?

4. Are participant demographics related to success in implementing this module?

5. Do participant opinions suggest ideas that might be examined in future peer coaching studies?

6. Are there any helpful suggestions for revising or refining the Peer Coaching (SIM) Module to make it more effective for future inservice training?

Description of the Inservice

The major goal of the training workshops and practice for skill development was to facilitate transfer of skills and knowledge gained by the participants in the inservice training
to peer coaching opportunities in their schools. The objectives of the workshop were to enable the participants to develop a clear understanding of:

1. how to establish coaching roles;
2. how to establish a helping relationship;
3. how adults learn most effectively;
4. effective teaching behaviors;
5. how to collect and analyze observational data;
6. how to communicate effectively in order to provide feedback to a peer;
7. the components of effective preobservation and postobservation coaching conferences;
8. how to use skills and knowledge gained via participation in role-playing settings with feedback provided during the workshop to the school environment.

The Peer Coaching Module of the School Improvement Model (SIM) was designed to influence participants at four levels of understanding: 1) awareness of the theory base underlying the skills and strategies for peer coaching; 2) intellectual control over the relevant content; 3) acquisition of skills for action; 4) transfer of concepts, skills, and strategies learned in the training to peer coaching settings in the schools.

All materials in the SIM module and videotapes used in the training were previously field-tested with appropriate groups during development.

Training format

There were four 2-hour training sessions with one training session each on the first two days, and the third and fourth training sessions occurring on day three. The first three
training sessions focused primarily on presentation of theory, modeling/demonstration, and practice in simulated situations with feedback. The fourth session consisted of participation in triads with each member being videotaped in a simulated face-to-face postobservation conference as a coach, as well as serving in the roles of teacher and process observer. The training workshops were conducted on June 25, 26, and 27, 1991.

Based on the research on effective training programs, the Peer Coaching Module of the School Improvement Model was comprised of five components: 1) presentation of theory; 2) modeling or demonstration; 3) practice in simulated settings; 4) feedback; and 5) coaching for application. A description of each component follows.

Presentation of theory

Shirley Stow, adjunct associate professor at Iowa State University, Program Area of Educational Administration, and instructional trainer for the School Improvement Model (SIM), conducted the instruction for this program. The presentation of theory section included an overview of the rationale and purposes of peer coaching, theoretical base, related research, and a description of the key components.

The first two-hour session was designed to provide an overview of research related to peer coaching, helping relationships, and adult learning. The overview of peer coaching included: "primary functions of coaching," "benefits," "role of coaches," "components of a successful coaching program," "who should coach," "implementing the program," "dimensions of the coaching process," and "topics that might provide the focus for peer coaching." The module based on "establishment of helping relationships" included research which focused on five factors: "realistic teaching assignment," "orientation to the
school," "support system," "time to work with support system," and "opportunity to meet with others." A synopsis of different styles of helping relationships completed this segment of the presentation. Adult learning research was discussed along with an opportunity for participants to analyze the types of adults each would "prefer to work with" and would find "difficult to work with."

The second two-hour session was designed to present theory on communication skills and effective teaching behaviors. The following communications skills were addressed: "communication model," "the processes of communication including listening, speaking, reading, and writing," "listeners must hear and understand what others say," "levels of listening," "benefits of active listening," "benchmarks of listening," "facilitators of communication," "communication blockers," "communication skills can be learned," and "nonverbal behaviors such as body movements, personal space, and setting." The module on effective teaching behaviors addressed "essential elements of instructional planning: instructional objectives, level of difficulty, type of lesson, time allotment, methods and procedures, student activities, variety, and evaluation of student outcomes."

The third two-hour session was designed for presentation of theory and instruction on technical skills of coaching including "preobservation conference," "classroom observation/data gathering," "analysis of data," and "feedback conference." Two additional effective teaching topics were discussed: "variables of motivation," and "teacher questions."
Modeling/demonstration/practice in simulated settings

The instructor modeled peer coaching strategies illustrating the content identified during the theory and techniques presentations.

During the first two-hour session, modeling included a simulation of "Styles of Helpers." With the assistance of the trainer, participants were given the opportunity to form triads, develop a brief scenario, and simulate a discussion where at least one of the styles was being used.

During the second session, the trainer modeled or demonstrated aspects of strong communication skills and effective teaching skills. Participants were given the opportunity to analyze the teaching behaviors demonstrated in a 20-minute videotape presentation of a third grade reading class (Manatt, 1987).

During the third training session, the presenter discussed all of the technical skills of "preobservation conference," "classroom observation/data gathering," "analysis of data," and "feedback conference." The presenter reviewed the nine key characteristics of the postobservation conference found on the Postobservation Conference Analysis Scale (Appendix B).

Participants were given the opportunity to observe and analyze one of three teaching behaviors including variables of motivation, questions, and checking for understanding which were demonstrated during a 20-minute videotape presentation of a seventh grade social studies lesson taught by Shereene Wilkerson from the 1988 Video Library of Teaching Episodes, Tape 6, "Crimes of Omission and Commission" produced by the Association for Supervision and Curriculum Development, ASCD, Arlington, Virginia. A postobservation conference for this segment was planned by the participants.
For the fourth training session, the participants met in the Instructional Media Center videotaping laboratory in Lagomarcino Hall, Iowa State University, and took turns videotaping a postobservation coaching conference. They worked in triads where one person was the teacher, one was the coach, and the third served as the process observer. This simulation was based upon the videotaped lesson viewed earlier that day. The process observer completed the postobservation conference analysis form to provide feedback to the coach. Participants completed the written post-training written Peer Coaching Examination at the end of the fourth training session (Appendix C).

**Feedback and coaching for application** The presenter gave feedback to participants throughout the training on process skills being practiced. The participants provided each other with frequent feedback as they worked in "turn to your partner" pairs, or in triads with a process observer. Participants received written feedback forms on their videotaped coaching conference provided by the trained process observers. The instructor used the postobservation conference analysis form to provide written feedback to participants who requested it. Nine of the participants gave authorization and received this additional feedback.

Development of instructional plans and materials prepared for the peer coaching workshop included:

1. *Instructional plan* — The School Improvement Model Peer Coaching Module was developed by the trainer and included the topics, objectives, activities, and time needed for teaching each major component of peer coaching. The objectives provided the focus for instruction and the activities were designed for learning and practice.
2. **Training session agenda** — The agenda outlined the sequence of activities with a timeline for each day's training sessions (Appendix A).

3. **Key concepts** — A 20-page handout provided the key ideas or a place to record the ideas as the discussion of peer coaching strategies progressed.

4. **Data recording sheets** — Two of the handout pages gave a framework for data recording.

5. **Videotapes** — The teaching segments which were used were from the 1988 Video Library of Teaching Episodes, produced by the Association for Supervision and Curriculum Development, ASCD, Arlington, Virginia.

**Instrumentation**

**Written pre/post peer coaching examination**

The *School Improvement Model Prototype: Summative Evaluation Instrument* (Manatt & Stow) was used as the primary basis for the written pre/post peer coaching examination. This instrument was thoroughly field-tested and has been previously used in research (Faast, 1982; Lucas, 1989). The items in the original assessment instrument were research-based and were designed to assess the knowledge of elements of effective instruction, classroom management, and components of the supervision/evaluation process. Since much of the training in the SIM Peer Coaching Module was based upon these concepts, this test was considered a good tool to use. Seven of the original questions were replaced with specific peer coaching questions. This new test was field tested by administering it to a group of ten students. The results were analyzed using the Standard Examination Analysis Package at Iowa State University Test/Evaluation.
Services. This provides distractor and item analysis, and the item-score correlation, generally referred to as item discrimination. The item discrimination score gives an indication of how well the item differentiates among students on their level of knowledge. An item-discrimination score in the range of +.20 to +.40 is desirable to maintain the reliability of how well the item measures the concept tested. Only peer coaching items with item-score correlation or item discrimination power of +.40 or greater were used in the pre/post examination given to peer coaching participants (Appendix C).

**Personal Data Form**

A review of the literature on peer coaching suggested relevant items to be included on this form giving both demographic and opinion data (Appendix C). This personal data form was given to participants to fill out before the beginning of instruction.

**Postobservation Conference Analysis Scale**

A review of the literature, and the SIM Peer Coaching Module pointed to nine specific conferencing skills. To maximize conference effectiveness, peer coaches in the sample were trained to: 1) review the agreed-upon purpose and format of the observation; 2) encourage teacher to review the lesson (in general); 3) describe what was observed specifically; 4) describe what was observed nonjudgmentally; 5) identify how the specified behavior(s) was effective; 6) promote discussion of ideas for growth; 7) check for understanding; 8) encourage teacher to summarize the conference; and 9) use active listening.
The instrument used to measure these skills after training was the Postobservation Conference Analysis Scale (Appendix B). The format was based upon the Conference Skills Assessment Scale, developed by Professor James Sweeney of the Educational Administration Program Area at Iowa State University, Ames, Iowa. This scale was used in the 1987 Association for Supervision and Curriculum Development (ASCD) Videotape Series (Manatt, 1987) for rating teacher performance. The items on the instrument are congruent with the literature on peer coaching, thus they appear to have construct validity (Borg & Gall, 1989). The Postobservation Conference Analysis Scale has a zero through seven-point Likert-type response mode. Zero represents no evidence of the strategy, and seven represents strong inclusion of the strategy in the conference. High scores indicate success.

The instrument was used in conjunction with a simulation activity. All participants observed a 20-minute segment of a videotaped lesson. The "coach" planned a postobservation coaching conference. A second participant served as the "teacher" being coached. A third participant was the process observer and rated the coach on each of the items on the Postobservation Conference Analysis Scale. In order to decrease opportunity for copying another coach's observed conference, participants in the same taping room were assigned different areas of concentration before viewing the stimulus videotape for their conference, with "cognitive level of questions," "variables of motivation," or "checking for understanding" serving as an area of focus.

A team of ten experienced observers were trained to be the judgment panel. This training was given by the same SIM workshop presenter. The judgment panel members were to observe the nine peer coaching behaviors and use the Postobservation
Conference Analysis Scale. Each observer watched the 23 videotaped coaching segments and rated each "coach" on this scale. Inter-rater reliability was determined for the judges. The ratings of the observations were statistically analyzed to determine which skills were noted more frequently than others. Two errors were found on the Postobservation Conference Analysis Scale at the time participants were being trained: 1) item 2 should have read "coach encouraged teacher to review the lesson" instead of "coach reviewed the lesson," and 2) item 6 contained two of the coaching behaviors. This did not allow for a clear distinction between the ratings for the two behaviors. Participants and judgment panel were requested to note the change in item 2 and to determine the presence of both "discussion of ideas for growth and checked for understanding" in their evaluation of item 6. A high rating on item 6 would indicate the strong presence of both characteristics.

Data Analysis Procedures

After all test and rating materials were completed, the data were prepared for computer treatment. Statistical treatment of the data was completed using the Statistical Package for Social Science (SPSS) for Windows, Professional Statistics for Personal Computers, release 5 (Norusis, 1992), and the Iowa State University mainframe, Wylbur. Descriptive statistics providing frequencies, means, and standard deviations were computed to study the relative value of the variables.

Data were collected from the written pre and post Peer Coaching Examination of the 23 participants. Frequencies and paired t-tests were used to assess the differences between pretest (pre-treatment) and posttest (post-treatment) scores of the participants.
Data from the Postobservation Conference Analysis Scale were collected from the ratings done by the ten judgment panel members for each of the 23 participants. Interrater reliability was determined to examine how well the raters were in agreement in their ratings. Analysis of variance (ANOVA), repeated measures, was used to determine which components of the elements of peer coaching were in strong evidence following the training.

The level of significance was established at .05, and appropriate degrees of freedom were determined for each test. Any test yielding a probability of >.05 resulted in rejection of the null hypothesis and acceptance of the alternate hypothesis.

The Tukey post hoc multiple comparison test was used to determine which means differed significantly when a significant F at the .05 level was observed in the ANOVA.

Scores from the post-training Peer Coaching Examination were compared with the scores given by the judgment panel on the Postobservation Conference Analysis Scale for each participant to see if there was any relationship between success on the written test to success in the conference setting. Scores were standardized prior to the input for computer analysis of data. 1) A correlation coefficient, Pearson r, 2) the coefficient of determination, r-squared, and 3) a scattergram, were prepared.

The following conditions for use of the Pearson r were considered prior to its use: 1) the scattergram suggested a linear relationship between the two variables; 2) the two variables to be correlated were paired observations for the same set of individuals; and 3) the variables were on an interval scale.
An analysis of demographic data was completed showing frequencies, means, and class rank on measures of success of participants. A table was developed to show the results of this analysis.

A t-test (independent) was used to compare males to females on both the written posttest and the judged ratings. A t-test was used to compare the two age groups containing 21 of the participants on both measures. An ANOVA one-way was used to analyze the differences between the four groups of "years of experience" (1-5, 6-10, 11-15, and 16-20) on the test and ratings.

Opinion data were analyzed through a table of response frequencies.
CHAPTER IV. FINDINGS OF THE STUDY

The purpose of this chapter was to report the results of the investigation of the effects of an inservice module developed by the School Improvement Model (SIM), Iowa State University, to teach strategies in peer coaching. The chapter was divided into three sections: 1) Analysis of written pre/post-treatment tests; 2) analysis of data related to the degree of use of the taught peer coaching strategies in the postobservation conferences of the 23 participants following the instruction; and 3) analysis of possible relationships between participant demographic data and degree of success in learning and demonstrating key peer coaching skills taught in the module, and analysis of opinion data. The data were collected from 23 participants receiving instruction in peer coaching as part of their training for the Danforth Cadre or Educational Administration 557: Supervision of Instruction course at Iowa State University.

All subjects volunteered for the study. A written pre-treatment test and a demographic/opinion form were completed by each participant prior to the treatment. All subjects received the same training. Data were gathered from 1) written pre-treatment and post-treatment tests, 2) ratings given by a judgment panel of ten trained evaluators for all 23 participants on key peer coaching strategies taught in the module, and 3) the demographic/opinion form. Data were then aggregated for all 23 participants on these measures.

In this chapter, each research null hypothesis was stated and the results of the statistical tests were displayed in table form. The Postobservation Conference Analysis
Scale can be found in Appendix B. The written pre/post-treatment Peer Coaching Examination and the Personal Data Form can be found in Appendix C.

After all test and rating materials were completed, the data were prepared for computer analysis. Statistical treatment of the data was completed using the Statistical Package for Social Science (SPSS) for Windows, Professional Statistics for Personal Computers, release 5 (Norusis, 1992), and the Iowa State University mainframe, Wylbur.

**Analysis of Written Pre/Post-treatment Peer Coaching Exam**

**Research Question 1:** Is there an increase in participant knowledge of peer coaching strategies following training in the School Improvement Model peer coaching module?

Research Null Hypothesis 1 stated that there would be no significant gain in participants' knowledge of peer coaching strategies following the training in the School Improvement Model (SIM) Peer Coaching Module as shown on the written pre-training and post-training Peer Coaching Examination.

Items on the original test had been selected following analysis using the Standard Examination Package at Iowa State University Test/Evaluation Services. Only additional peer coaching questions with item-score correlation or item discrimination power of +.40 or greater were added to the written pre/post-training examination. This procedure was used to increase the likelihood that these test items would discriminate between levels of knowledge among the participants.

A t-test was used to compare the means of the pre-training exam with the post-training exam to test Null Hypothesis 1 in order to determine if there was any increase in
participants' knowledge of peer coaching strategies following the training. All subjects participated in the written pre/post-treatment examinations.

The results of the paired t-test on subjects' scores for the written pre-training and post-training exams were reported in Table 5. The pretest mean was 27.48 and the posttest mean was 33.96. There was a difference of 6.48 between the pretest and the posttest means. The within group t-value was 10.31, which was significant for the one-tailed test at the $p<0.001$ level. Thus, Null Hypothesis 1 was rejected. Knowledge of peer coaching strategies as measured by this test increased significantly between the pretest and the posttest.

Table 5. Comparison of participant knowledge of peer coaching strategies on written exams before and after the training, using paired t-tests (N=23 participants)

<table>
<thead>
<tr>
<th>No. of Subjects</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Within group t-value</th>
<th>1-tail probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=23</td>
<td>27.48</td>
<td>33.96</td>
<td>10.31</td>
<td>p&lt;0.001</td>
</tr>
</tbody>
</table>

Analysis of Judgment Panel Ratings Data on Participants' Postobservation Conferences

Research Question 2: Which of the strategies taught in the SIM module are more likely to be shown in the post-training coaching behaviors of trainees as shown by performance in a simulated coaching conference?
Null Hypothesis 2 stated that there would be no difference between the degree of inclusion of the various peer coaching strategies taught in the SIM module as rated by the judgment panel on the Postobservation Conference Analysis Scale.

The inter-rater reliability among the ten judges was estimated by computing a correlation coefficient for the ratings given between each of the judges. The mean of the overall correlation among the judges was found to be +.54. According to Borg and Gall (1989, p. 632) this is a reasonably strong result for this purpose. The individual means and correlation coefficients for each judge are included in Table 17 in Appendix D.

Data were collected from the ten-member judgment panel's ratings of the videotapes on the zero through seven Likert-type scale, with zero indicating absence of the strategy and seven indicating strong inclusion for each of the coaching areas for each of 23 participants. Analysis of variance, ANOVA repeated measures, was used to test the null hypothesis that there would be no difference in the level of inclusion of the different key coaching behaviors in the post-training postobservation conferences.

It was important to consider the assumptions relevant to ANOVA in order to use the F distribution as the underlying distribution for testing the null hypothesis. Histograms of the ratings for each peer coaching area were prepared to represent the data graphically for visual examination to check for normality and homogeneity of variance. Hinkle (1988) noted that ANOVA is robust with respect to violation of the assumptions, except in the case of unequal variances with unequal sample sizes (p. 348). In this study the 23 participants were all trained and evaluated on the same coaching behaviors, so the sample size did not vary.
Of the eight areas rated, only the first area, "coach reviewed the agreed-upon purpose and format of the observation," showed a profile with the majority of the ratings at the lower end of the normal curve on the histogram. (Histograms shown in Appendix D.) The other seven areas showed a more normal distribution of scores. In some areas, notably 3, 5, and 6, there was a greater concentration of scores at the higher end of the curve. This suggested the desired post-treatment "J" curve indicating strong learning by the participants, overall, in these areas.

In order to locate the source of the differences among variances, a statistical comparison among the means was required. The Tukey post hoc multiple comparison test was used to locate the source of differences in degree of inclusion of the various peer coaching skills evaluated when a significant F at the .05 level was observed.

Table 6 shows the means and standard deviations of the eight coaching areas and total ratings given by the judgment panel on the Postobservation Conference Analysis Scale.

The results of the repeated-measures ANOVA and Tukey are shown in Table 7. A bar chart showing the means of the ratings given by the judgment panel for each of the coaching strategies is shown in Figure 1.

The ANOVA repeated-measures test on the eight areas of key peer coaching skills yielded a significant F at the predetermined .05 level. The F ratio was 13.67 with p<.000, therefore, the null hypothesis that there are no differences among the means was rejected and it was inferred that there were significant differences between the means of the ratings of the areas of coaching behaviors.
Table 6. Means and standard deviations of the eight coaching areas and total ratings judged on the Postobservation Conference Analysis Scale (N=230 ratings for each area)°

<table>
<thead>
<tr>
<th>Area rated</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Coach reviewed the agreed-upon purpose and format of the observation</td>
<td>3.00</td>
<td>1.87</td>
</tr>
<tr>
<td>2. Coach &quot;encouraged the teacher&quot; to review the lesson</td>
<td>3.80</td>
<td>1.56</td>
</tr>
<tr>
<td>3. Coach described what was observed specifically</td>
<td>5.16</td>
<td>.88</td>
</tr>
<tr>
<td>4. Coach described what was observed nonjudgmentally</td>
<td>4.23</td>
<td>1.31</td>
</tr>
<tr>
<td>5. Coach identified how the specified behavior(s) was effective</td>
<td>4.97</td>
<td>.96</td>
</tr>
<tr>
<td>6. Coach promoted discussion of ideas for growth and checked for understanding</td>
<td>4.93</td>
<td>1.37</td>
</tr>
<tr>
<td>7. Coach encouraged teacher to summarize the conference</td>
<td>4.30</td>
<td>1.63</td>
</tr>
<tr>
<td>8. Coach used active listening</td>
<td>4.51</td>
<td>1.41</td>
</tr>
</tbody>
</table>

°Zero represents no evidence of the strategy, and seven represents strong inclusion of the strategy. High scores indicate success.
Table 7. Repeated-measures ANOVA and Tukey contrasts of judgment panel ratings on each participant's degree of inclusion of key peer coaching strategies in the postobservation conference (N=23 participants; total number of ratings=1840)

### Analysis of Variance

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of squares</th>
<th>Mean squares</th>
<th>F-ratio</th>
<th>Probability at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals</td>
<td>22</td>
<td>216.39</td>
<td>9.84</td>
<td>13.67</td>
<td>.000</td>
</tr>
<tr>
<td>Occasions</td>
<td>7</td>
<td>82.20</td>
<td>11.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual</td>
<td>154</td>
<td>132.29</td>
<td>.86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>183</td>
<td>430.88</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Tukey Multiple Comparison Test

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>2.99</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-2</td>
<td>3.80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-4</td>
<td>4.23</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-7</td>
<td>4.30</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-8</td>
<td>4.51</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-6</td>
<td>4.93</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-5</td>
<td>4.97</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-3</td>
<td>5.16</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the 0.05 level.
Figure 1. Bar chart of the means of the ratings given to participants on the Post-observation Conference Analysis Scale by the judgment panel for the eight peer coaching strategies taught in the SIM module.
Using the Tukey procedure, significant differences at the .05 level were found to exist between Area 1 (coach reviewed the agreed-upon purpose and format of the observation) and all other areas except Area 2. The Area 1 coaching strategy was used significantly less than all others (except Area 2) taught during the training. There are a number of possible reasons why the participants used this strategy less. It may not have been learned as well as the others. The value of including that strategy may not have been as apparent, or the participants did not find the opportunity to include it in their conference. Another possibility is that this strategy was less "observable" to the judges, but there is no apparent reason why this strategy would not be as observable.

Area 2 (coach "encouraged the teacher" to review the lesson) was used significantly less than three of the other strategies (3, 5, and 6).

Area 4 (coach described what was observed specifically) was used significantly less than two of the other areas (3 and 5). Area 7 (coach encouraged teacher to summarize the conference) was used significantly less than Area 3.

Area 3 (coach described what was observed nonjudgmentally) showed the greatest degree of inclusion with a mean of 5.16 (from the Likert-type scale from 0-7). Area 5 (coach identified how the specified behavior(s) was effective) and Area 6 (coach promoted discussion of ideas for growth and checked for understanding) were the next most frequently used techniques with means of 4.97 and 4.93, respectively. It appears that these were the best learned, most valued, or easiest to implement strategies taught in the inservice. The strong inclusion of coaching strategies 3, 5 and 6 are apparent, as well as the less frequent use of strategies 1, 2, 4, and 7.
Analysis of Relationship Between Scores on Judgment Panel Ratings and Written Post-training Examination

Research Question 3: Is it possible to predict the success of the participants in the postobservation conference as rated by the judgment panel by looking at the written post-training exam? Null Hypothesis 3 stated that there is no relationship between the ratings of participants by the judgment panel on the Postobservation Conference Analysis Scale and the written post-training Peer Coaching Examination.

Standard scores were derived for the judgment panel ratings of participants on the Postobservation Conference Analysis Scale and the written post-training Peer Coaching Examination. The Pearson product-moment correlation coefficient was computed with these standard scores to compare the relationship between these two scores for each participant. A correlation of +.63 was found with P at the .001 level (Table 8). This suggested a moderate positive correlation (Hinkle, Table 6.5, p. 114) as it was well within the range of +.50 to +.70 suggested by Hinkle.

The correlation was squared to find the "coefficient of determination," since this statistic (r-squared X 100) gives the percentage of the variance in one variable that can be associated with the variance in a second variable. The coefficient of determination for these two variables was .40, therefore, 40 percent of the variance in participant performance in the coaching setting could be associated with the variance on the written test. Table 8 shows these results. The scattergram of plots can be found in Appendix D.

The null hypothesis was rejected and there was found to be a moderate positive correlation between participant performance on the two measures Postobservation Conference Analysis Scale and the post-training Peer Coaching Examination. These results suggested that students who scored well on the written examination also tended to
perform well in the peer coaching conference. This gave good evidence of the
effectiveness of the transfer of the peer coaching training to the coaching setting. Strong
performance on the written test was a reasonably good predictor of success in the
conference setting.

Table 8. Correlation between judged ratings on Postobservation Analysis Rating Scale
and participant performance on the written post-training Peer Coaching
Examination (Number of participants=23)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Correlation coefficient (r)</th>
<th>Coefficient of determination (r-squared x 100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Standardized scores from judgment</td>
<td>+.63***</td>
<td>40</td>
</tr>
<tr>
<td>2. Standardized scores on written</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. written post-training examination</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

***p<.001.

Analysis of Information from Personal Data Form

Research Question 4: Are participant demographics as reported on the Personal
Data Form, prior to training, related to success in implementing the inservice training
provided in the SIM Peer Coaching Module?

Null Hypothesis 4 stated that participant demographics as reported on the Personal
Data Form would show no relationship to success in implementing the SIM Peer Coaching
Module inservice training.
A table of information with participant demographics as reported on the Personal Data Form compared to measures of success with the Peer Coaching Module was developed in order to look at possible relationships (Table 9). The two indices of success in this peer coaching model were the post-treatment scores on the written Peer Coaching Examination and the ratings given to each participant by the judgment panel on the Postobservation Conference Analysis Scale.

Table 9 shows the ID number, gender, age range, years and area of educational experience, sums of the average scores for each of the eight peer coaching areas rated by the judgment panel on the Postobservation Conference Analysis Scale, and participants' scores and class rank on the written post-training Peer Coaching Examination.

T-tests for independent groups were used to compare the males and females on both of the measures of success: post-training written exam and judged ratings. The same tests were used to compare the two age groups (31-40, 41-50) containing 21 of the participants (N=21). An ANOVA one-way was used to explore possible differences between the four groups of "years of experience" (1-5, 6-10, 11-15, and 16-20) when compared with each of the two measures of success. No statistically significant differences at the .05 level were found in the above six tests. The results of these tests are located in Tables 11-16 in Appendix D. It was not possible to determine any significant differences between males and females, age groups, or years of experience groups on the measures of success.
Table 9. Table of demographic information from the Personal Data Form and scores with class ranks on the Postobservation Conference Analysis Scale and written post-training Peer Coaching Examination

<table>
<thead>
<tr>
<th>ID</th>
<th>Gender</th>
<th>Age</th>
<th>Years taught</th>
<th>Level</th>
<th>Rating by panel (Rank)</th>
<th>Exam score written (Rank)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>M</td>
<td>31-40</td>
<td>1</td>
<td>Univ.</td>
<td>51.3</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>M</td>
<td>31.40</td>
<td>10</td>
<td>HS</td>
<td>49.0</td>
<td>2</td>
</tr>
<tr>
<td>18</td>
<td>M</td>
<td>41-50</td>
<td>19</td>
<td>HS</td>
<td>44.3</td>
<td>3</td>
</tr>
<tr>
<td>22</td>
<td>F</td>
<td>21-30</td>
<td>4/1(5)</td>
<td>ES/HS</td>
<td>44.2</td>
<td>4</td>
</tr>
<tr>
<td>15</td>
<td>F</td>
<td>31-40</td>
<td>10</td>
<td>ES</td>
<td>40.8</td>
<td>5</td>
</tr>
<tr>
<td>21</td>
<td>F</td>
<td>31-40</td>
<td>10</td>
<td>HS</td>
<td>39.8</td>
<td>6</td>
</tr>
<tr>
<td>11</td>
<td>F</td>
<td>41-50</td>
<td>5/4(9)</td>
<td>ES/HS</td>
<td>39.6</td>
<td>7</td>
</tr>
<tr>
<td>23</td>
<td>F</td>
<td>31-40</td>
<td>2/7(9)</td>
<td>ES/HS</td>
<td>38.8</td>
<td>8</td>
</tr>
<tr>
<td>14</td>
<td>F</td>
<td>41-50</td>
<td>13/6(19)</td>
<td>ES/HS</td>
<td>38.2</td>
<td>9</td>
</tr>
<tr>
<td>3</td>
<td>F</td>
<td>31-40</td>
<td>8/7(15)</td>
<td>ES/HS</td>
<td>38.1</td>
<td>10</td>
</tr>
<tr>
<td>10</td>
<td>F</td>
<td>31-40</td>
<td>3/5(8)</td>
<td>ES/HS</td>
<td>38.0</td>
<td>11</td>
</tr>
<tr>
<td>9</td>
<td>F</td>
<td>31-40</td>
<td>3/8(11)</td>
<td>ES/HS</td>
<td>37.6</td>
<td>12</td>
</tr>
<tr>
<td>6</td>
<td>M</td>
<td>31-40</td>
<td>5</td>
<td>HS</td>
<td>34.0</td>
<td>13</td>
</tr>
<tr>
<td>20</td>
<td>M</td>
<td>41-50</td>
<td>25</td>
<td>HS</td>
<td>32.9</td>
<td>14</td>
</tr>
<tr>
<td>1</td>
<td>F</td>
<td>31-40</td>
<td>10</td>
<td>HS</td>
<td>32.0</td>
<td>15</td>
</tr>
<tr>
<td>19</td>
<td>M</td>
<td>31-40</td>
<td>15</td>
<td>HS</td>
<td>30.7</td>
<td>16</td>
</tr>
<tr>
<td>13</td>
<td>F</td>
<td>51-60</td>
<td>19</td>
<td>HS</td>
<td>30.6</td>
<td>17</td>
</tr>
<tr>
<td>5</td>
<td>F</td>
<td>31-40</td>
<td>15</td>
<td>ES</td>
<td>27.7</td>
<td>18</td>
</tr>
<tr>
<td>7</td>
<td>F</td>
<td>41-50</td>
<td>4/4(8)</td>
<td>ES/HS</td>
<td>26.9</td>
<td>19</td>
</tr>
<tr>
<td>12</td>
<td>M</td>
<td>41-50</td>
<td>18</td>
<td>HS</td>
<td>26.7</td>
<td>20</td>
</tr>
<tr>
<td>8</td>
<td>F</td>
<td>41-50</td>
<td>5</td>
<td>HS</td>
<td>24.2</td>
<td>21</td>
</tr>
<tr>
<td>2</td>
<td>F</td>
<td>31-40</td>
<td>16</td>
<td>HS</td>
<td>21.3</td>
<td>22</td>
</tr>
<tr>
<td>4</td>
<td>F</td>
<td>31-40</td>
<td>10</td>
<td>ES</td>
<td>15.8</td>
<td>23</td>
</tr>
</tbody>
</table>

*Class rank on written test notably different from panel rating.
Research Question 5: Are there findings from the opinion data which suggest areas for future research?

Opinion data from the Personal Data Form given at the beginning of the training were not analyzed in depth due to the low number of participants and the variety of responses. A frequency table was prepared, however, and this information was examined for possible questions which might generate future study in the area of peer coaching and peer supervision. The results are shown in Table 10.

The responses to the following questions were 22 "yes" to 1 "no": Question 1 (Would you expect to see improvement in instruction from peer supervision during the formative stage of the teacher performance cycle?); Question 4 (With appropriate teacher performance evaluation training, would you feel comfortable evaluating peers for formative purposes?); and Question 6 (What is your personal attitude toward peer "evaluation" in general?). These results suggested a high level of agreement with these practices.

Question 2 (Would you expect to see improvement of instruction resulting from peer participation in the final, summative teacher evaluation process?) was answered with 21 "yes" and 2 "no" responses. This suggested strong support for this idea.

Question 3 (Would you expect the summative evaluation to be more "fair" with the inclusion of peer teacher input?) was answered with 18 "yes," 1 "no," and 4 "not sure" answers. The "not sure" answers may reflect ambivalence with the definition of "fair" in the question.

Question 5 (With appropriate teacher performance evaluation training, would you feel comfortable evaluating peers for summative evaluation purposes?) was answered with 18 "yes" and 5 "no" responses. This suggested that evaluating peers in a summative type
Table 10. Table of frequencies of opinion information from the Personal Data Form (N=23)

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Would you expect to see improvement in instruction from peer supervision (confidential data not shared with administrator) during the formative stage of the teacher performance evaluation cycle?</td>
<td>22</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2. Would you expect to see improvement of instruction resulting from peer participation in the final, summative teacher evaluation process? (observation data shared with administrator)</td>
<td>21</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>3. Would you expect the summative evaluation to be more &quot;fair&quot; with the inclusion of peer teacher input?</td>
<td>18</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>4. With appropriate teacher performance evaluation training, would you feel comfortable evaluating peers for formative purposes?</td>
<td>22</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>5. With appropriate teacher performance evaluation training, would you feel comfortable evaluating peers for summative purposes?</td>
<td>18</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>6. What is your personal attitude toward peer &quot;evaluation&quot; in general? (positive)</td>
<td>22</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>7. When doing observation for peer coaching, would you prefer to just observe and record specific behaviors requested by the teacher, and let the teacher draw any relevant conclusions?</td>
<td>7</td>
<td>16</td>
<td>0</td>
</tr>
</tbody>
</table>
evaluation process may not be as comfortable as other coaching practices for at least five of the participants.

Question 7 (When doing observation for peer coaching, would you prefer to just observe and record specific behaviors requested by the teacher, and let the teacher draw any relevant conclusions?) was answered with 7 "yes" and 16 "no" responses. These responses suggested the strong feeling of the majority of the group that they would prefer to give more feedback to their peer than may have been requested in the preobservation conference. This points to strongly controversial issues in peer coaching concerning the directness and range of the coach's feedback.
CHAPTER V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Peer coaching, as a strategy to increase teacher effectiveness, has been strongly recommended by a number of researchers in recent years. As more research findings point to the synergistic value of cooperative learning, peer coaching has the potential to become one of the strongest initiatives in staff development and may substantially change the way teachers relate to each other.

Success in sustaining a peer coaching program until it becomes an institutionalized part of a school’s improvement process has been limited. Making changes in the inservice training so that teachers become more comfortable with the process appears to be one of the best ways to encourage the use of peer coaching in schools.

The primary purpose of this study was to examine the effects of an inservice module developed by the School Improvement Model (SIM) at Iowa State University to teach strategies in peer coaching, with the goal of providing suggestions for possible improvement of the module for future instructional purposes. An additional purpose was to generate suggestions administrators and trainers might consider in implementation of peer coaching programs.

This study used a single group, quasi-experimental design with written pre/post-training tests and judgment-panel ratings of participant performance from videotapes following the training. Demographic and opinion data were elicited from participants in a questionnaire format. The 23 participants were all teachers enrolled in graduate level
training in Educational Administration. The judgment panel was made up of ten experienced raters who were trained in the use of the rating form.

This study was designed to answer the following questions: 1) Is there greater participant knowledge of peer coaching strategies following participation in the inservice training provided by the SIM module as shown on written pre-training and post-training tests? 2) Which of the strategies taught in the SIM peer coaching module are more likely to be present in the post-training coaching behaviors of participants as shown by judgment panel ratings? 3) Is it possible to predict the success of the participants in the postobservation conference as rated by the judgment panel by looking at the written post-training scores? 4) Is there any relationship between participant demographics of age, gender, or years of teaching experience, and success in implementing peer coaching as taught in the SIM module? 5) Are there findings from the opinion data which suggest areas for future research? 6) Are there suggestions from this study which might be used to revise or refine the Peer Coaching Module (SIM) to make it more effective for future inservice training?

Research on these questions was conducted to strengthen the knowledge base concerning the effectiveness of strategies frequently included in the design of peer coaching training programs for teachers. Use of the more effective techniques would allow for maximum return on the often limited training time and resources available to the trainer or administrator seeking to improve the instructional skills of a faculty.
Conclusions

The following are conclusions based on the data collected from the participants in this peer coaching study and a look at possible reasons for the results.

**Research Question 1:** Is there greater participant knowledge of peer coaching strategies following participation in the inservice training provided by the SIM module on written pre-training and post-training tests?

Participants in the training showed a significant gain in knowledge of the peer coaching strategies taught in this inservice. A greater gain would have been expected if the length of training time had been increased to more completely cover the topics.

**Research Question 2:** Which of the strategies taught in the SIM Peer Coaching Module are more likely to be present in the post-training coaching behaviors of participants as shown by judgment panel ratings?

When participants were asked to translate their knowledge of peer coaching strategies into action in the postobservation conference setting, it became apparent that certain types of strategies were better learned, more valued, or easier to implement than others. The students had received approximately the same amount of training and practice on each of the strategies.

In looking at the nature of the eight strategies, two of the four least used coaching behaviors asked the coach to "encourage the teacher to summarize the conference" or to "encourage the teacher to review the lesson." These were similar in that they asked to coach to encourage the teacher to do something, whereas the other strategies were behaviors to be demonstrated by the coach. It may have been easier for the coaches to
focus on their own behavior, while forgetting, or finding it more difficult to ask the teacher to perform specific tasks during the conference.

The least used strategy, "coach reviewed the agreed-upon purpose and format of the observation," may have been more difficult to incorporate since the teams had not worked together in a preobservation conference setting to establish a specific purpose and format, though they had practiced this strategy in an earlier role-playing setting.

Research Question 3: Is it possible to predict the success of the participants in the post-observation conference as rated by the judgment panel by looking at the written post-training scores?

Participants who scored well on the written examination tended to perform well in the subsequent judgment panel ratings of the peer coaching conferences.

The SIM inservice training was effective in bringing about an increase in participants' knowledge of instructional and peer coaching strategies. For the most part, coaches were also able to effectively use the majority of the strategies in their taped postobservation conferences.

It was apparent that students who performed better on the written test were frequently rated higher by the judgment panel on the inclusion of the coaching strategies during the taped postobservation conference. This suggested that more successful students, in general, were able to translate their knowledge into action to a greater degree than less capable students.
A higher score on the written test appeared to be more closely related to a higher rated performance in the peer coaching setting than any of the demographic factors of age, gender, or years of teaching experience (see Question 4).

**Research Question 4:** Is there any relationship between participant demographics of age, gender, or years of teaching experience, and success in implementing peer coaching as taught in the SIM module?

The participant demographics of age, gender, and years of teaching experience were examined, but no significant relationships to success with the inservice training were noted.

**Research Question 5:** Are there findings from the opinion data which suggest future research?

The participants' responses to Question 7 of the Personal Data Form (When doing observation for peer coaching, would you prefer to just observe and record specific behaviors requested by the teacher, and let the teacher draw any relevant conclusions?) of 7 "yes" and 16 "no" were different from the instructions they received during their training in peer coaching. Current models of peer coaching have tended to encourage coaches to report only what has been agreed upon during the preobservation conference, and to avoid comments on other observations or evaluative feedback. It has been assumed that greater directness and range of feedback than agreed upon prior to the observation could cause resentment in the coaching arrangement. Some coaches and teachers being coached may prefer a more comprehensive review of the observed lesson.
This may be a direction in which peer coaching evolves when the coaches become more comfortable and trusting in their relationship.

Limitations

The conclusions drawn from this study are constrained by the following limitations:

1. The training for the 23 subjects included only the model presented by the SIM researchers.

2. The sample of participants (23) was small due to the limited number of students participating in the inservice training.

3. The experimental group included only students enrolled in Educational Administration Course 557 at Iowa State University or enrolled in the Danforth training group. This represented a highly capable, motivated group of teachers seeking administrative training. Therefore, results of this study may have limited generalization to the normal population.

4. It was not feasible to use a control group as there was no pool of similar students available.

5. The analysis of coaching behaviors shown by the participants in the study was limited to coaching behaviors demonstrated in a simulated conference. A real coaching conference in a school setting might have yielded different results.

6. The experiment was limited to the coaching strategies elicited by the observation of 20 minutes of a teaching tape.

7. The short period of participant instruction and practice available during the study limited the degree of learning and application of the model.
Discussion

The findings of this study have implications for trainers in the peer coaching process, administrators considering whether to implement a peer coaching program, and researchers looking at factors affecting successful peer collaboration.

This study helped meet the need for looking at the effectiveness of peer coaching training models advocated by Legett and Hoyle (1987), Monroe and Elliot (1987), Murphy and Eblen (1987), Raney and Robbins (1987), and Sprague (1992).

The strong coaching performance by many of the participants in this study supported the research by Conway (1991), Glickman (1988), and Osterman and Kottkamp (1993) which suggested that many teachers are competent to make knowledgeable judgments about personal practice and to provide practical support to peers in the improvement of instruction.

The population participating in this study tended to be risk-taking high-achievers as evidenced by their selection for the Danforth program and choice of taking advanced courses in administration. In particular, the Danforth group had begun to develop strong norms of cooperation as they worked through a number of team exercises in their training. The successful learning and cooperation of the group studied supported theories by Reyes (1990) and Senge (1990), who believe that cultures where change has the best opportunity for success are those where the values, beliefs, and norms support cooperation and collaboration.

The fact that the coach/teachers in this study were able to generate a number of suggestions for teaching practice in the postobservation conferences further reinforced the contention by Johnson and Johnson (1991), Osterman and Kottkamp (1993), Pugach and
Johnson (1990), and others, that in collaborating with colleagues we greatly increase the pool of available ideas and resources.

The success of the design of this SIM Peer Coaching Module in promoting peer coaching behaviors in participants gave further credence to the three common characteristics of successful peer coaching programs advocated by Ackland (1991): 1) non-evaluative, 2) based on the observation of teaching followed by constructive feedback, and 3) aimed to improve instruction.

The finding in this study that degree of success on the written test appeared to be more strongly related to success in the coaching setting than demographic factors such as age, gender, number of years taught, and level of teaching experience has possible relevance in light of the research by several other investigators. It supports Killion's contention that age is a less significant factor than level of cognitive development. Persons who operate at a higher stage of development function with more complexity, possess a broader range of behaviors, analyze problems from a multidimensional perspective, and respond more appropriately to the needs of others (Killion, 1988b).

If the inference is made that in this study, participants who achieved higher scores on the written test may have been operating from a higher level of sense of self-efficacy when they tended to perform better in the peer coaching setting, this may have been a factor affecting this outcome and would support Bandura (1986), Berman and McLaughlin (1977) and Pozarny's (1991) contentions that teachers with a higher sense of self-esteem and self-efficacy are associated with higher levels of collegial support, teacher collaboration, and teacher attitude toward peer coaching.
It is interesting to look for reasons why two of the coaching strategies that asked the coach to "encourage the teacher to do (something)" in this study were less well-implemented than strategies which focused on the coach's own behaviors. It might be inferred that the coaches were reluctant to ask the teachers to do something specific because of one of the following: traditional isolation of teachers; it is still generally not the norm for teachers to observe one another; and advice giving has often been perceived as an unwelcome practice or as bragging, which are insights provided by Lortie as early as 1977, and Reyes (1990).

This study is one of the first to look directly at peer coaching strategies taught in inservice to examine levels of post-training implementation.

**Recommendations for Practice**

Based on the information gained from the review of literature and this study, the following recommendations are given for improvement of the SIM module, and for coaching programs in general.

1. The SIM module, as designed, has frequently incorporated many of the recommendations given below, particularly when the trainer has been able to teach peer coaching on-site and provide follow-up assistance in school districts. In particular, the trainer may wish to spend more time in instruction and practice on the coaching strategies of "reviewing the agreed-upon purpose and format of the observation," "encouraging the teacher to review the lesson," "encouraging the teacher to summarize the conference," and "describing what was observed nonjudgmentally." These were the areas shown to be less consistently used by the participants in this study following the training.
2. Recognize that peer coaching training will be most successful when there is full, visible administrative support for the process.

3. Peer coaching should be separate from the performance evaluation system. Confidentiality and the reduction of competition are important.

4. Staff participation should be elicited during the planning stages for input regarding the possible features of the program and stages of implementation.

5. Whether to participate in peer coaching, choice of coach, and amount of time spent in the process should be teacher decisions, not mandated by the trainer or administrator.

6. Peer coaching training will have a better chance of success if it is initiated on-site and the staff holds the general opinion that "the teachers at this school are good and getting better." Peer coaching should be introduced as a method to facilitate this process.

7. Peer coaching may be most effective as part of an overall improvement process in a school where the attitudes toward experimentation and collaboration tend to be positive.

8. Peer coaching should be considered an important strategy to extend the learning whenever teachers are trying to master new instructional strategies or to refine current practice with a specific focus in mind.

9. Capable, confident teachers may be likely to have greater success with peer coaching. High levels of perceived self-esteem, self-efficacy, and strong interpersonal skills, including the capacity for empathy, will contribute to success with the process.

10. Peer coaching should be taught with guided practice and frequent follow-up support by the trainer for the refinement of the process. Enough practice with one's "real"
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peer coach can help lessen the awkwardness coaches might initially experience when entering into such a close, trusting relationship with another person. Training should include recognition of potential roadblocks and strategies for remediation at varying stages of the coaching process.

11. The entire coaching sequence should be practiced from preobservation conference through postobservation conference until the process becomes comfortable for the participants. Those participants who do not reach a level of comfort or trust with their chosen peer in a reasonable amount of time may wish to withdraw from the process or work with another peer.

12. When possible, the peer coaching training should be based upon actual teaching observations between two people rather than from training tapes or simulations, although a tape of the observation would be helpful for reference. The more realistic the training setting, the greater the chances of generalization of the learning to practice.

13. It should be clearly recognized that peer coaching may not be the most efficient way to bring about improvement with all teachers. Those with complex instructional problems, or those who have already developed strong personal reflective practice skills and methods of providing feedback may not benefit as much as others from peer coaching. It may actually inhibit their growth.

14. Peer coaching should not be considered a strategy to increase collegiality, per se. Greater collegiality and stronger norms supporting experimentation and reflective practice may emerge as a result of successful coaching experiences when the school climate supports such growth.
15. More teachers might continue participating in peer coaching if there were additional perceived benefits such as greater autonomy through release from the traditional teacher performance evaluation cycle. An administrator might consider offering teachers who have consistently performed at a high success level the option of participating in peer coaching. The administrator may wish to monitor the coaching process through verbal, written, or videotaped reviews of progress provided by the participants. The peer coaching teachers would benefit from continued administrative support and recognition for their successes, while more valuable supervisory time would be available for teachers requiring direct supervision.

16. Recognize that peer coaching is primarily a method to encourage reflective practice in teachers. When participants reach a certain level of proficiency in reflective practice, peer coaching may be less efficient than other sources of feedback a teacher may design. The adage of "two heads are better than one" still holds, however, and the benefits of continued collaboration with a peer should not be discounted. Coaching might then be used on an "as needed" basis.

17. Use of technology such as videotaping should be made available to support the coaching process.

18. A support group where problems and successes can be shared should be encouraged. Successes should be celebrated.

**Recommendations for Further Research**

At the conclusion of this investigation, several recommendations to aid other researchers conducting studies in this area are provided: In particular, the questions
generated by the opinion data from Question 7 of the Personal Data Form suggested the potential value of further investigation into the extent and directness of the feedback given by the coach in successful postobservation conferences. A comprehensive study of peer coaching should anchor teaching improvement to increased student achievement.

1. Review the literature for relevant information concerning the extent and directness of feedback given by the coach in successful peer coaching programs.

2. Increase the sample size in a study of successful peer coaching programs, possibly through a questionnaire survey. It would be possible to study more demographic and/or participant attitude data to determine which personality types might be better candidates for peer coaching programs. It would help determine the optimum extent and directness of the feedback given by the coach in the postobservation conference to maintain a reasonable comfort level for the majority of the respondents. The most successful coaching strategies used in practice by these teachers could be determined and tested.

3. Conduct a similar study on the SIM module in school-based settings, where a trained group and a control group might be used in the study design, with one group using the tightly controlled feedback of the coach giving only requested data, and the other group given freedom for the coach to give any opinions or observations during the coaching conference.

4. Send the list of peer coaching strategies taught in the SIM module to a number of experts in the field to see if there is a variance in agreement as to the value of each of the strategies. Elicit additional strategies deemed important by experts, and opinions as to the
optimum level of directness and range of coaching feedback allowed in postobservation conferences.

5. Conduct a poll of a number of teachers and/or administrators to study opinions of peer coaching, in general, and to seek more information as to why it might be difficult for teachers to begin and sustain the coaching process.

6. Study teachers who began coaching and then discontinued to determine why the process did not work for them. Inquire as to what remediation might have encouraged them to continue.

7. Design and test criteria by which administrators could evaluate the overall success of a peer coaching program in schools.

8. Investigate the value of insights gained through serving in the coaching role, specifically, and how this experience may have enriched the coach's own teaching.
BIBLIOGRAPHY


Sprague, M. M. (1992). *Influences of peer coaching activities and teacher personality type on the implementation of the TABA inductive model of teaching*. *Dissertation Abstracts International* (University Microfiche No. AAC 9227840)


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APPENDIX A.

WORKSHOP PLANNER
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<th>TIME</th>
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<th>MODE</th>
<th>VISUALS</th>
<th>HANDOUTS</th>
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APPENDIX B.

POSTOBSERVATION CONFERENCE ANALYSIS
POSTOBSERVATION CONFERENCE ANALYSIS

Below are descriptors to help you analyze the coach’s feedback conference. Carefully examine the descriptors and circle the number which best characterizes the behavior in the conference. In some cases the behavior may not be assessable. In that case, mark NA (not applicable).

1. Coach reviewed the agreed-upon purpose and format of the observation 7 6 5 4 3 2 1 NA (did not review purpose & format)

2. Coach encouraged teacher to review the lesson 7 6 5 4 3 2 1 NA (did not encourage teacher)

3. Coach described what was observed specifically 7 6 5 4 3 2 1 NA (was not specific)

4. Coach described what was observed nonjudgmentally 7 6 5 4 3 2 1 NA (was judgmental)

5. Coach identified how the specified behavior(s) was effective 7 6 5 4 3 2 1 NA (did not identify)

6. Coach promoted discussion of ideas for growth and checked for understanding 7 6 5 4 3 2 1 NA (did not discuss growth & check for understanding)

7. Coach encouraged teacher to summarize the conference 7 6 5 4 3 2 1 NA (did not encourage teacher to summarize conference)

8. Coach used active listening 7 6 5 4 3 2 1 NA (did not use)
APPENDIX C.

PEER COACHING EXAMINATION
AND PERSONAL DATA FORM
PEER COACHING EXAMINATION

Directions:

The items below are designed to assess your knowledge of effective teaching, observing, and peer coaching. For each item, choose the most appropriate response and fully blacken in that letter on your answer sheet. Use only a no. 2 pencil.

1. The distinguishing goals of helping relationships are
   a. communicating and increasing independence.
   b. promoting growth and increasing independence.
   c. caring and sharing.
   d. promoting growth and displaying empathy.

2. Dimensions of nonverbal communication include:
   a. body movements, voice, and reflections.
   b. body movements, personal space, and setting.
   c. time, body movements, and role playing.
   d. timing, voice, and environment.

3. The teacher more likely to get higher student gain scores is one who
   a. lectures less than 50 percent of the time.
   b. provides ongoing feedback to students.
   c. teaches at the appropriate level of difficulty.
   d. gives frequent quizzes or tests.

4. Clues about how best to work with adults are found in their
   a. body language.
   b. behaviors.
   c. use of leisure time.
   d. background.

5. One level of listening is Active Listening which refers to
   a. responses by the sender.
   b. questions from the receiver.
   c. participatory behaviors employed by the receiver.
   d. direction of the communication flow.
6. **Wait Time** (or a pause) increases the probability that students' responses are more acceptable. Research has shown that the effective pause is
   a. 1 to 3 seconds.
   b. 1 to 2 seconds.
   c. 3 to 5 seconds.
   d. 2 to 5 seconds.

7. When planning lessons, the most critical element to focus on is the
   a. learner outcomes.
   b. level of difficulty.
   c. student activities.
   d. methods and procedures.

8. The most important outcome derived from a preobservation conference is to
   a. answer a series of questions.
   b. establish a framework for the classroom observation.
   c. allow the teacher to be heard.
   d. make the teacher feel secure.

9. The primary purpose of data recording during a lesson is to
   a. tell the teacher how to teach the lesson.
   b. observe students.
   c. be visible in the classroom.
   d. be able to give specific feedback.

10. According to research the six needs of new teachers include
    a. a realistic teaching assignment and a support system.
    b. impromptu conversations and conferences.
    c. impromptu conferences and a realistic teaching assignment.
    d. an orientation to the school and impromptu conversations.

11. Communication requires feedback from
    a. the sender.
    b. the receiver.
    c. a process observer.
    d. both the sender and receiver.
12. Motivation, a condition which activates one to satisfy a need/desire, has several variables. Among them are
   a. level of concern, success, and knowledge of results.
   b. level of concern, questioning, and feedback.
   c. level of concern, probing, and directing.
   d. level of concern, success, and analyzing.

13. The two types of data recording are
   a. anecdotal and time-on-task.
   b. time-on-task and scripting.
   c. wide lens and narrow lens.
   d. narrow lens and scripting.

14. The kinds of questions the teacher asks will reveal
   a. the teaching strategy.
   b. what the teacher values.
   c. the reward system.
   d. which activities to use.

15. The classification scheme for identifying cognitive levels of questions is based on the work of
   a. Thomas Good.
   b. David Krathwohl.
   c. B. F. Skinner.
   d. Benjamin Bloom.

16. A coach may use one of several "helping styles" which include
   a. pessimist and available.
   b. credible and parent syndrome.
   c. know-it-all and over-committed.
   d. directive and supportive.

17. Following the classroom observation the coach will analyze the data to
   a. provide the teacher with a general sense of direction.
   b. identify the behaviors in the cognitive, affective, and psychomotor domains.
   c. develop a checklist of activities.
   d. make decisions about what to discuss in the conference.
18. An instructional objective (learner outcome) should be written in terms of
   a. teacher actions.
   b. learner actions.
   c. both teacher and learner actions.
   d. how much time will be used to teach it.

19. An example of a technique which can modify a student’s motivation to learn is using
   a. a consistent lesson plan structure.
   b. attention "getters" and "keepers".
   c. the "textbook" as the primary resource.
   d. predictable questioning patterns.

20. Conditions needed to promote growth in adults include
   a. confrontation, challenge, and repetition.
   b. support, challenge, and consistency.
   c. trust, support, and guided reflection.
   d. repetition, support, and consistency.

21. Communication facilitators are "door openers" and one type is
   a. advising statements.
   b. clarifying statements.
   c. diagnosing statements.
   d. directing statements.

22. To determine the "level of difficulty", the instructor will consider the
   a. artistry of instruction.
   b. relevant activities.
   c. allotment of time.
   d. prerequisite skills/concepts.

23. When the coach prepares for the postobservation conference, he/she
   a. examines recorded data.
   b. verifies how the lesson was taught.
   c. identifies only student behaviors.
   d. identifies changes to be made.
24. Postobservation conference closure should include
   a. positive strokes.
   b. a summary of the discussion.
   c. written action plans.
   d. a discussion on how to enhance the helping relationship.

25. When recording data during the lesson, the coach should
   a. use shorthand.
   b. record only student behaviors.
   c. focus on only the behavior(s) the teacher wants monitored.
   d. use only the wide lens approach.

26. The best way to begin a postobservation conference is to
   a. discuss suggestions for growth.
   b. summarize the conference.
   c. identify effective behaviors.
   d. review the lesson in general.

27. Peer coaches might be especially helpful in situations where
   a. content or techniques are highly specialized.
   b. team teaching is being used.
   c. administrators effectively use the clinical supervision model.
   d. teachers have not established a common vocabulary to talk about teaching behaviors.

28. The primary purpose of lesson observation and analysis is
   a. to inspect the teacher’s classroom.
   b. to critique the teacher’s technique.
   c. to be able to give specific feedback about the lesson.
   d. to give the teacher general information about student behavior.

29. "Task analysis" is a term most closely associated with
   a. selecting an objective at the appropriate level of difficulty.
   b. teaching to an objective.
   c. monitoring and adjusting instruction.
   d. using the principles of learning.
30. Teachers are providing opportunities for individual differences when they select a student to answer on the basis of
   a. who will give the correct answer.
   b. the order in which the students raise their hands.
   c. proximity to the student.
   d. the question being asked.

31. The element of a conference most crucial for enhancing professional growth is
   a. a summary of observations.
   b. discussion of problems.
   c. providing specific feedback.
   d. recognizing weaknesses.

32. Which of the following lists presents the taxonomy of cognitive thinking skills in the correct order from the lowest to the highest levels?
   a. evaluation, synthesis, analysis, application, comprehension, knowledge
   b. knowledge, comprehension, application, analysis, evaluation, synthesis
   c. comprehension, knowledge, application, analysis, synthesis, evaluation
   d. knowledge, comprehension, application, analysis, synthesis, evaluation

33. A data gathering technique which focuses on at-task behavior and movement patterns in the classroom is
   a. the anecdotal record.
   b. the selective-verbatim record.
   c. the seating chart observation record.
   d. the timeline.

34. Research tells us that the best approach to use in a conference is
   a. directive.
   b. non-directive.
   c. tell and listen.
   d. dependent on many factors.
35. When manipulating variables of motivation, one behavior the teacher should exhibit is to
   a. give specific feedback.
   b. communicate restricted expectations.
   c. encourage passive involvement from the students.
   d. thoroughly review all prerequisite skills.

36. The most important accomplishment in a classroom observation is
   a. the consideration of the lesson plan.
   b. the gathering of specific descriptive data.
   c. the identification of ineffective teaching techniques.
   d. involvement in the lesson.

37. A data gathering technique which focuses on a broad flow of events in the classroom is
   a. the anecdotal record/scripting.
   b. the selective verbatim record.
   c. the seating chart observation record.
   d. time on task.

38. Significant improvement in teaching has been found when peer coaching is used in conjunction with
   a. curriculum alignment.
   b. staff development.
   c. peer review.
   d. unspecified performance standards.

39. Peer coaching may be most successful when
   a. the school has a long-standing norm of classroom isolation.
   b. administrators encourage staff competition.
   c. risk-taking and creativity are limited.
   d. it promotes collegiality and self-efficacy among staff members.

40. The postobservation conference should contain all the following elements except
   a. Coach reviewed the agreed-upon purpose and format of the observation.
   b. Coach promoted discussion of ideas for growth and checked for understanding.
   c. Coach shared suggestions for needed improvement in areas observed but not specified for this observation by the teacher, to give direction for future observations.
   d. Coach identified how the specified behavior(s) was effective.
PERSONAL DATA FORM

NAME: ___________________ SS#: ____________________
Male: _____ Female: ______
Age: (circle one) (21-30) (31-40) (41-50) (51-60) (61-70)

Your current position: ________________________________

Number of years you have taught in public schools?__________
Number of years taught at level: elementary____secondary____
Number of years in administration? Bldg.____Central Off.____

Number of years of experience as a teacher performance
evaluator?______
Number of days of teacher performance evaluator training?______

Number of years participation in peer coaching?______________

If you have participated in peer coaching have you found this
process significantly helpful in improving instruction?_______
In what way? (be specific)________________________________

Would you expect to see improvement in instruction from peer
supervision (confidential data not shared with administrator)
during the formative stage of the teacher performance cycle?
______ What kinds of improvement might best be achieved in this
way?____________________________________________________

Would you expect to see improvement of instruction resulting from
peer participation in the final, summative teacher evaluation
process? (observation data shared with administrator)______
What kinds of improvement might best be achieved in this way?__
________________________________________________________

Would you expect the summative evaluation to be more (or less)
"fair" with the inclusion of peer teacher input?_______________

With appropriate teacher performance evaluation training would you
feel comfortable evaluating peers for formative
purposes?__________ Summative purposes?_______________

What is your personal attitude toward peer "evaluation" in
general?________________________________

When doing observation for peer coaching would you prefer to just
observe and record specific behaviors requested by the teacher, and
let the teacher draw any relevant conclusions?______________
APPENDIX D.

HISTOGRAMS AND TABLES
Histogram of strategy #1: Coach reviewed the agreed-upon purpose and format of the obs.

Histogram of strategy #2: Coach encouraged the teacher to review the lesson.
Histogram of strategy #3: Coach described what was observed specifically.

Histogram of strategy #4: Coach described what was observed nonjudgmentally.
Histogram of strategy #5: coach identified how specified behavior(s) was effective.

Histogram of strat. #6: Coach promoted discussion of ideas for growth & checked for und.
Histogram of strategy #7: Coach encouraged teacher to summarize the conference.

Histogram of strategy #8: Coach used active listening.
Table 11. Comparison of participants' judgment panel ratings by gender, using independent t-test (N=7 males, 16 females)

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<td>8.20</td>
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<td></td>
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<td>.232</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Table 12. Comparison of participant post-training written examination scores by gender using independent t-test (N=7 males, 16 females)

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>Males</th>
<th>females</th>
<th>t-value</th>
<th>2-tail prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35.57</td>
<td>2.07</td>
<td>33.31</td>
<td>3.67</td>
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<tr>
<td></td>
<td></td>
<td>.142</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 13. Comparison of judgment panel ratings by age of participants using independent t-test (N=21)

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>31-40</th>
<th>41-50</th>
<th>t-value</th>
<th>2-tail prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35.43</td>
<td>9.55</td>
<td>33.29</td>
<td>7.61</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.618</td>
<td>(.05)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 14. Comparison of post-training written examination scores by age of participants using independent t-test (N=21)

<table>
<thead>
<tr>
<th>df</th>
<th>31-40</th>
<th>41-50</th>
<th>t-value</th>
<th>2-tail prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td>19</td>
<td>34.29</td>
<td>3.54</td>
<td>33.29</td>
<td>3.45</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(.05)

Table 15. ANOVA comparison among years of experience groups on judgment panel ratings (N=23)

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>93.10</td>
<td>3</td>
<td>31.03</td>
<td></td>
<td></td>
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<tr>
<td>Within</td>
<td>1555.86</td>
<td>18</td>
<td>86.44</td>
<td>.359</td>
<td>3.16*</td>
</tr>
<tr>
<td>Total</td>
<td>1648.96</td>
<td>21</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*The critical F value with 3 and 18 degrees of freedom at the .05 level is 3.16.

Table 16. ANOVA comparison among years of experience groups on written post-training examinations (N=23)

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>11.27</td>
<td>3</td>
<td>3.76</td>
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<tr>
<td>Within</td>
<td>236.55</td>
<td>18</td>
<td>13.14</td>
<td>.286</td>
<td>3.16*</td>
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<tr>
<td>Total</td>
<td>247.81</td>
<td>21</td>
<td></td>
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<td></td>
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</tbody>
</table>

*The critical F value with 3 and 18 degrees of freedom at the .05 level is 3.16.
Table 17. Pearson r correlations between ratings given by judges on judgment panel, means and standard deviations of ratings given by each judge (N=184 ratings)

<table>
<thead>
<tr>
<th></th>
<th>J-1</th>
<th>J-2</th>
<th>J-3</th>
<th>J-4</th>
<th>J-5</th>
<th>J-6</th>
<th>J-7</th>
<th>J-8</th>
<th>J-9</th>
<th>J-10</th>
<th>X</th>
<th>SD</th>
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</thead>
<tbody>
<tr>
<td>Judge 1</td>
<td>1.00</td>
<td>.51</td>
<td>.56</td>
<td>.43</td>
<td>.48</td>
<td>.52</td>
<td>.47</td>
<td>.51</td>
<td>.50</td>
<td>.63</td>
<td>4.45</td>
<td>2.30</td>
</tr>
<tr>
<td>Judge 2</td>
<td>.51</td>
<td>1.00</td>
<td>.57</td>
<td>.43</td>
<td>.53</td>
<td>.43</td>
<td>.44</td>
<td>.45</td>
<td>.48</td>
<td>.62</td>
<td>4.34</td>
<td>2.12</td>
</tr>
<tr>
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<td>.56</td>
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<td>.51</td>
<td>.54</td>
<td>.50</td>
<td>.48</td>
<td>.61</td>
<td>.66</td>
<td>4.40</td>
<td>2.02</td>
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<tr>
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<td>.57</td>
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<td>2.01</td>
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<tr>
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<td>.54</td>
<td>.57</td>
<td>1.00</td>
<td>.58</td>
<td>.56</td>
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<td>.55</td>
<td>.69</td>
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<td>.50</td>
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<td>.55</td>
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<td>.45</td>
<td>.61</td>
<td>4.22</td>
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<td>Judge 7</td>
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<td>.44</td>
<td>.48</td>
<td>.42</td>
<td>.56</td>
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<td>1.00</td>
<td>.66</td>
<td>.49</td>
<td>.59</td>
<td>4.29</td>
<td>2.18</td>
</tr>
<tr>
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<td>.45</td>
<td>.52</td>
<td>.48</td>
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<td>.66</td>
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<td>.69</td>
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<td>.48</td>
<td>.61</td>
<td>.42</td>
<td>.54</td>
<td>.45</td>
<td>.49</td>
<td>.52</td>
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<td>1.82</td>
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<td>.62</td>
<td>.66</td>
<td>.57</td>
<td>.69</td>
<td>.61</td>
<td>.59</td>
<td>.69</td>
<td>.62</td>
<td>1.00</td>
<td>4.28</td>
<td>1.67</td>
</tr>
</tbody>
</table>

Mean .51 .50 .55 .48 .57 .53 .52 .58 .52 .63 4.37

Overall Mean of Pearson r: .54
APPENDIX E.

SCATTERGRAM
Scattergram of correlation between participants' score on written post-training Peer Coaching Examination and overall score given by rating panel on the Postobservation conference Analysis Scale.