THE EFFECTS OF PRACTICE ON CONFERENCE BEHAVIOR OF SUPERVISORS FOLLOWING PARTICIPATION IN INSTRUCTIONAL SUPERVISION TRAINING

by

ROGER WAYNE HARTY

B.Ed., The University of Lethbridge, 1977

A Thesis Submitted to the Faculty of Education
of the University of Lethbridge in Partial Fulfillment
of the
Requirements for the Degree
MASTER OF EDUCATION

LETHBRIDGE, ALBERTA

1987

Abstract

The purpose of this study was to determine the nature and extent of changes in supervisor conference behavior which could be attributed to the effect of practice following a graduate course in Instructional Supervision. In this study half of the supervisors were able to practice their supervisory skills following their training in Instructional Supervision while the remaining supervisors in the sample were not able to practice their supervisory skills.

Data were gathered from video-tapes of post-course and final conferences through the use of the Supervisor-Teacher Analogous Categories System (STACS) and the Timed Interval Categorical Observation Recorder (TICOR). STACS is a 19-category behavior system which was developed to investigate behavior which occurs between supervisors and teachers in supervisory conferences. TICOR is a micro computer used for collecting and analyzing observational data through the use of hardware and software components which in this case were adapted to use STACS.

The data were gathered to answer the study question, do participants who had opportunity to practice supervisory skills differ significantly from those participants that had no opportunity to practice their skills. Eleven variables from STACS were chosen to document conference

behavior change between the practice and no practice groups.

Analysis of Variance was used to test for significant differences in conference behavior between the post-course and final conference tapes for the supervisors in the practice and no practice groups. The study findings indicated that there were no statistically significant differences between the group of supervisors who were able to practice their supervisory skills and the group of supervisors who were unable to practice their supervisory skills.

Acknowledgements

I wish to express my sincere appreciation to Dr. Ritchie Whitehead for his interest, encouragement and guidance in the preparation of this thesis. I also wish to thank the scholarly work evaluation committee, Dr. Dale Burnett, Dr. Richard Butt, Dr. Mel Fisher and Dr. David Smith for their assistance and support at various stages of my thesis.

I thank Dr. Jon Thorlacius for his time and encouragement for the training of myself and the other coders in the Medicine Hat Project, in the use of STACS, and TICOR. I also thank Mr. Russ Spencer who taped many of the conferences used in this research study. I also appreciate greatly the supervisors who so kindly gave of their time to participate in this study.

To my wife, Chris, I give thanks for her unfailing support and encouragement. I also appreciate greatly the skill and patience with which she typed the manuscript from its initial to its final stages.

To my parents, Jake and Irene Harty, my family and friends, I extend my deepest gratitude for their continued support and encouragement.

TABLE OF CONTENTS

TABLES

FIGURES

Chapter I

Introduction

The concept of Clinical Supervision originated through the work of Morris Cogan, and others, during the mid 1950's at Harvard University. These educational practitioners stressed the "clinic of the classroom with the focus on in-class supervision" (Cogan, 1973, p.4). They also identified the importance of data collection through systematic observation of teacher behavior. The premise in this early work was that teaching behavior was patterned and could be analyzed by teachers and supervisors who wanted to improve instruction. The goal of supervision, therefore, is to "benefit students by focusing on teacher behavior in the classroom, while at the same time increasing the teacher's self-concept and desire to improve instructional strategies" (Reilkoff, 1981, p.29).

The practice of supervision involves a series of "systematic, continuing, and developmental cycles of planning, observation, and analysis" (Mosher & Purple, 1972, p.81). The importance of the interdependence of the components of the supervisory cycle have been summarized in the following way:

> The basis of supervision is the planning, observation, and analysis cycle ... Each element of this cycle is crucial and builds upon those which precede it. Without planning, the observations are likely to be haphazard or meaningless; the analysis session is prone to problems of vagueness, misunderstandings of intent, and arbitrary evaluations; without observation there is no basis for analysis and little for planning; and without analysis there is little possibility of rational understanding and no basis for future planning which will build upon strengths and compensate for weakness (Goldhammer, 1969, p.13).

The essence of supervision according to Garman (1982), "consists of both a focused problem-solving procedure involving identifying, collecting, and interpreting information explicitly germane to the educational goals accepted by teacher and supervisor, and a congruent and permeating spirit of personal commitment to growth through colleagueship" (p.43).

The type of supervisory support process most likely to generate benefit for teachers is one which "recognizes teachers' pragmatic on-the-job style of learning, and which enables them to experience the benefit of autonomous professional development which is possible through systematic study of their own teaching" (Smyth, 1984, p.431). Elliot has described as "practical reflection" the process of engaging teachers in an analysis of their own practice so that emerging problems can be resolved through the generation and testing of hypotheses in teachers' own classrooms. He proposes that this be done by assisting

teachers to identify and diagnose practical problems of importance to them. Under these conditions the teacher becomes "an autonomous person who is capable of improving classroom performance" (Elliot, 1976, p.55). Bodine has also identified the potential gains in analyzing one's own practice:

> Self-assessment is probably the most powerful means yet developed for a teacher to be the master of his own professional growth ... Self-assessment, like opening a door, allows a person to look and see what he is actually doing in the classroom. It is the mirror of his present teaching behavior. It gives the teacher objective information about his role in the classroom and enables the teacher to learn as much as he can about his own methods of working with and influencing children and other people (Bodine, 1973, p.171).

In order for a change in teaching behavior to occur and when a change in teacher behavior is needed the teacher "needs help in disengaging oneself from familiar patterns and needs professional-technical support during the time the novel behavior is being practiced" (Cogan, 1975, p.262). Once a teaching skill has been obtained it needs to be transformed in order for it to be transferred into the teacher's daily repertoire. The conditions of the classroom are different from in-service or conference situations and one cannot simply walk from the learning situation into the classroom with the skill completely ready for use. "Like athletes, teachers will put newly learned skills to use if they are coached" (Joyce &

Showers, 1982, p.5). The supervision process therefore identifies the significance and meaning of teaching experience such as Hymes (1979), for example, describes as "ethnographic monitoring". This is the process of going beyond merely focusing upon problem areas within teaching and providing technical solutions to discovering instead "what is working already, and then to provide support, explanation and legitimacy for these practices" (Smyth, 1982, p.50).

This supervision process, however, takes time. Each individual cycle of supervision involves commitment and planning through the stages of pre-conference, observation, and post-conference. Using this framework, Costa and Garmston (1984) state that "effective supervisors view their facilitative relationship with teachers as being long-term since it can continue for two, three or more years" (p.17). The administrative team of a school, therefore, would find it very difficult to supply teachers with this type of in-depth supervision. An alternative may be the supervision of teachers by fellow teachers. This can be "an effective means of supervision since teachers naturally turn to each other for help" (Glickman, 1985, p.264). It can be a successful procedure since peer supervision is concerned primarily with improving instruction rather than with summative evaluation. Teachers helping teachers can become a formalized and well received

way of assuring direct supervisory assistance to every staff member. "If teachers become proficient in observation skills and the format of Instructional Supervision, then the administrator can take on the role of trainer, scheduler, and troubleshooter" (Glickman, 1985, p.264). By the term "the role of trainer," Glickman means that the administrator prepares the teachers for the task of supervision. "Scheduler" implies that the administrator forms teams of teachers who take the responsibility for pre-conferencing, observing, and post-conferencing with each other. The "trouble-shooter" role is performed through consultation with teams of teachers that are having difficulty or with individual teachers who need more specialized attention.

Active teacher involvement in pedagogical analysis is important because researchers (Good & Brophy, 1978; Medwid, 1980) have documented that teachers are often unaware of many of their own teaching behaviors. This finding is not surprising given the rapid pace of classroom teaching and the fact that teachers are rarely trained to analyze their own classroom pedagogy. The Instructional Supervision model, with its emphasis on collegial analysis of observational data, works well with the idea of peer supervision and offers the potential of raising teachers' awareness levels. As Good and Brophy (1978) observe: "Teachers are often unaware of much of what they do, and this lack of

perception sometimes results in unwise, self-defeating behavior" (1978, p.34).

Additionally, peer interaction using Instructional Supervision may benefit the observer as well as the teacher being observed. "The experiences of systematically observing one's colleagues, analyzing collected data, and structuring and conducting conferences may well contribute as much or more to the professional development of the observer as to the refined practice of the teacher being observed" (Goldsberry, 1981, p.11).

With the reality of tight budgets and large teacher-to-supervisor ratios in public school jurisdictions the idea of peer supervision seems to be very practical. If direct assistance is a meaningful task for instructional improvement and if a supervisor cannot provide time for supervision on a regular basis, then the choice is either to have teachers provide help to each other or to have no help available at all. Peer supervision, therefore, in the opinion of Carl Glickman (1985) and others, can be an effective way to foster professional growth in teachers.

The successful use of peer supervision in the school is also strengthened through the following working realities of teachers:

1. A peer naturally generates a sense of collegiality and empathy necessary for open communication within the supervision process.

2. A peer supervisor is often more readily accepted by the supervisee as bringing to the supervision process a degree of expertise in both classroom reality and subject matter which an administrator may not. The person giving advice "must understand the teacher's world as a whole and must be there long enough to get a sense of what counts for what" (Butt & Olson, 1983, p.8).

3. The power relationship found within peer supervision is horizontal in nature. This structure further facilitates the collegial nature of the supervision process "since both participants share equal power" (Butt, 1984, p.22).

For peer supervision to occur successfully participating teachers need to be trained in the most effective use of Instructional Supervision skills. Although supervision may be viewed from many perspectives the "supervisory conference is widely acknowledged as a vital component, perhaps the most valuable of all, in the process through which supervision might be effectively accomplished and instruction improved" (Hruska, 1961, p.22). It is at this time that ideas and suggestions can be exchanged and the potential to improve instruction may occur. However, despite the recognized potential of the supervisory conference to improve instruction, "the interpersonal transactions and relationships that develop during its fulfillment are also considered by both teachers and

supervisors to be the greatest source of conflict between them" (Keir, 1981, p.2).

Even with the importance of the supervisory conference known "...few studies have dealt formally with the behavior of the supervisor and/or the supervisee during the supervisory conference" (Dussault, 1970, p.51). Since 1970 there have been three research studies, Trew (1979), Thorlacius (1980) and Keir (1981) which indicate that training in Instructional Supervision has a positive effect on conference behavior. The question as to what happens to conferencing behavior during significant elapsed time periods if conferencing skills are left unused or if they are practiced remains unaddressed. This question is of significant practical, as well as theoretical relevance, to the emerging realities of attempts at peer supervision. The object of this thesis then is to examine changes in supervisory behavior during a time lapse after training within groups of supervisors who have had a significant chance to practice supervisory skills as compared to groups who had no chance to practice. To date there are no research studies specifically related to the effect of practice of supervisory skills. O'Toole (1978), however, studied the effect of practice on counseling interviewing skills and found that practice had a positive effect on interviewing skills. The major finding of the study was that subjects who participated in the practice sample were

able to produce the preferred interviewing skills at a higher frequency than the subjects who were in a no-practice situation after interviewing skills training. An example of a preferred interviewing skill is the use of open-ended questions which was found to be significant at the .05 level for the subjects who were able to practice their interviewing skills after training.

In the field of education the findings in the O'Toole study support the idea of transfer as described by Joyce and Showers (1982). Their belief is that once a teaching skill has been obtained, it needs to be transformed into the active repertoire of the teacher. Since the conditions of the classroom are different from training situations "one cannot simply walk from the training session into the classroom with the skill completely ready for use - it has to be changed to fit classroom conditions" (Joyce & Showers, 1982, p.5). In order for this to successfully occur the following process is outlined for learning a new skill:

1. Study the theoretical basis or rationale of the method.

2. Observations of demonstrations by persons who are relatively expert in the model.

3. Practice and feedback in protected conditions such as trying out the strategy on each other and then on others who are relatively easy to work with.

4. Coaching one another as the new model is practiced in order to discover the optimal use of the new skill within the everyday situation.

Unfortunately, the development of skill by itself does not ensure transfer. Joyce and Showers state that, "relatively few teachers, having obtained skill in a new approach, will then transfer that skill into their active repertoire and use the new approach regularly and sensibly unless they receive additional information" (1982, p.5).

Statement of the Problem

As school districts encourage their teachers to become involved in peer supervision, the question of the teacher's or administrator's ability to supervise others must be raised. To aid professionals in learning the supervision process the University of Lethbridge offers a semester long course using video-tape feedback and human relations training techniques to prepare supervising teachers and administrators in the use of the Instructional Supervision model of teacher supervision. The principle objective of the course has been to decrease supervisor's directive behavior in conferences with teachers while, concurrently, increasing their indirect behavior. According to research conducted by Trew (1979), Thorlacius (1980) and Keir (1981),

training in Instructional Supervision enables supervisors to attain this objective. These findings help to strengthen the idea that teachers and administrators are better equipped to supervise others after the completion of a course in Instructional Supervision. The problem, however, which this study primarily addressed was to determine the nature and extent to which supervisory conference behavior skills change as a result of the effect of time following instructional training.

A secondary problem identified which supervisors in the sample were able to practice their supervisory skills during the research period and those who did not. Using this information the effect of practice on conference behavior was studied.

Need for the Study

It is anticipated that this study may be of interest to three groups:

1. Instructors of Instructional Supervision

By making comparisons between supervisor conference behavior at the end of Instructional Supervision training and at a later date in time instructors will be able to estimate the level of effectiveness of their training

and possibly identify strengths and weaknesses in their course.

2. Teachers Interested in Self-Initiated Professional Development

Teachers interested in finding out more about their own pedagogy may initiate the peer supervision process to meet their own professional development needs.

3. Researchers Investigating Conference Behavior

Even though supervision has been used in schools in an organized way for over a century,

> ...research on the effects and on the processes of supervision is virtually non-existent. Supervision is rarely observed except by those who are actually involved in the process... In reality, very little is known about what actually happens in Instructional Supervision (Weller, 1971, p.1).

In 1980 Sullivan stated that "at this point the research related to supervision is sparse and that which does exist reflects a lack of rigor often associated with a new field of inquiry" (p. 14).

This study will provide much descriptive information on behavior in supervisory conferences both at the end of training and also after formal training in Instructional Supervision has been completed. The research will add to the literature by showing how supervisory skills may or may not change over time with or without the opportunity to practice.

Delimitations of the Study

The study was delimited to:

1. Supervisors who have participated in Education 5530 at the University of Lethbridge.

2. Verbal and non-verbal conference behavior on the part of the supervisor as defined by the Supervisor-Teacher Analogous Categories System.

3. Focus mainly on supervisor behavior in supervisory conferences.

4. Supervisors working within a school environment.

As a note of caution it is also important to state that this study has also been delimited to the Instructional Supervision process. Other methods such as monitoring student achievement as a gauge to measure the effectiveness of supervision will not be included. Another example includes supportive supervision which is "...a system in which supervisor and teacher collaborate to assess and maximize student performance" (Reilkoff, 1981, p.31). Unlike Instructional Supervision, which focuses on teaching behavior, Supportive Supervision focuses on the student. Student attitudes, behaviors, and learning outcomes are analyzed for the purpose of their improvement. At no time during this process is the teacher evaluated or negatively criticized. Finally individual teacher characteristics

such as personal characteristics and years of teaching experience which may distinguish effective from less effective teachers and has an effect on the supervision process will not be examined.

It is also important to note that Instructional Supervision is situation specific as well as person specific. This occurs since each cycle of supervision takes its principle data from events which occur in the classroom. It is the "analysis of the data and the relationship between teacher and supervisor which form the basis of the program, procedures, and strategies which are designed to improve the students' learning by improving the teacher's classroom behavior" (Cogan, 1973, p.9). What has happened in one classroom, therefore, cannot be generalized to all classrooms.

Definition of Terms

For the purpose of this study the following terms will be defined in the following way:

Supervisor - A practicing teacher or administrator who is an actual or potential supervisor of teachers and who has successfully completed Education 5530 -

Instructional Supervision at the University of Lethbridge.

Teacher - A colleague of the supervisor or a student teacher who has agreed to serve as a supervisee.

Instructional Supervision - A form of supervision focussing on the improvement of teachers' classroom instruction through direct observation and analysis of actual in-class behavior.

Post-Course Tape - A video tape of supervisor conference behavior which is recorded at the end of the Instructional Supervision course.

Final Tape - A video tape of supervisor conference behavior which is recorded six months to eighteen months after the Instructional Supervision course has ended.

STACS - An acronymn for a 19-category observational instrument designed to categorize behavior in supervisory conferences. A complete description of each of the STACS categories is located in Appendix A.

Behavior Which is Factual - That which solicits information or provides both solicited and unsolicited information.

Behavior Which is Evaluative - That which solicits opinion or suggestion or provides both solicited and unsolicited opinion or suggestion.

Behavior Which is Solicited - That which provides solicited information and solicited opinion or suggestion.

Behavior Which is Unsolicited - That which provides unsolicited opinion or suggestion.

Behavior Which is Indirect - That which is supportive, accepting, solicits information, opinion, or suggestion from others, and provides information, opinion, or suggestion solicited by others.

Behavior Which is Direct - That which is critical and provides others with information, opinion, or suggestion not solicited by them.

Supervisor Contribution to the Conference - The time supervisors spoke or were otherwise in control in conferences, expressed as a percentage of the duration of conferences.

Organization of the Thesis

Following this introductory chapter the remainder of the document includes Chapter 2, which provides a review of the literature, Chapter 3 which deals with the research design and methodology, Chapter 4 which presents and analyzes the data, and Chapter 5 which presents the summary, conclusions, implications, and suggestions for future research.

Chapter II.

Review of the Literature

Throughout its development, supervision has been a major topic of interest for teachers, administrators, and the public at large. Knowledge of the way in which the process of supervision has evolved within the institution of public education helps educators understand the supervisory process used in education today. Lucio and McNeil stated that "Historical knowledge gives insight into the nature of supervision, for we are wedded in our practice to the thought of other eras" (1962, p.3). Supervision has changed over the years and has been the subject of many papers. More information and research, however, are needed to understand more fully the supervision process as a whole and, specifically, within the area of the supervisory conference. The review which follows has been divided into three parts: (1) Historical perspective of supervision, (2) Supervision and the supervisory conference, and (3) Use of interaction analysis in the supervisory conference.

Historical Perspective of Supervision

Supervision has proceeded through a number of developmental periods during the past three hundred years. In the early eighteenth century special lay people who had little or no knowledge of teaching had supervisory control and were "less interested in improving a deficient teacher than in dismissing him" (Lucio & McNeil, 1962, p.3).

Between 1870 and 1885 the lay supervisors yielded their supervisory function to scholarly professionals who were identified as teachers of teachers. It was the job of these supervisors to train their teachers using the belief that the best method of helping teachers was by example. The idea of training teachers became very important.

Due to urbanization and the implementation of compulsory schooling between 1885 and 1905 in the United States it became common practice for teachers to follow educational programs and to be evaluated by rating schemes. This autocratic approach was justified by the supervisors since they claimed to hold knowledge of philosophy, business management, and a science of education not held by teachers. There can be very little doubt that the "supervisory conference to this date was highly evaluative" (Keir, 1981, p.17).

In the early 1900's Taylor's scientific management paradigm had its effect on educational supervision.

Ratings and comparisons against standards were the main supervisory techniques used. The major thrust of supervisory effort was that of efficiency. Button (1961) stated that "at this time it was only important that the teacher be efficient" (p.166).

By about 1920, supervisors moved away from Taylor's scientific management, since its methods were not particularly applicable to education, and moved towards another "science" of supervision. In using this method the cooperation with teachers was included as well as the development of scientifically determined education standards. Teacher cooperation, however, was not a major part of this process since "great numbers and varieties of rating forms were completed by supervisors who placed much value upon unannounced visits on teachers and conducted interviews afterwards" (Button, 1961, p.270). By this means supervisors served to entrench further the "...inspectional concept of supervision" (Smyth, 1984, p.426).

Eventually the idea of supervisor cooperation with teachers began to develop by about 1960. This was the age of "democratic" supervision. The focus of supervision shifted to a "concern for human relations and a cooperative group effort to improve instruction" (Sullivan, 1980, p.3). It was also recognized that a supervisor's success in supervision depended on friendly relations and frank

understanding with teachers. It was through this movement that Instructional Supervision started to evolve.

The Clinical Supervision method was developed by Morris L. Cogan and his colleagues at Harvard. These supervisors decided that their supervisory practices of observing a lesson and then conferring with the teacher were inadequate and were not helping the teacher to develop in the profession. They developed a method of supervision which changed over the years as the ideas were reviewed and revised. Clinical Supervision contains a number of components which reflect the major trends of the time during which it was developed. The supervision model is interactive rather than directive, democratic rather than authoritarian, and teacher-centered rather than supervisor-centered.

The word "clinical" is often negatively associated with sickness. Cogan, however, uses the term clinical in a more positive way by citing Webster's Third New International Dictionary which states that clinical also means "of relating to, or as if conducted in a clinic" and "involving or depending on direct observation." The dictionary further supports the appropriateness of the term clinical by referring to "the presentation, analysis, and treatment of actual cases and concrete problems in some special field." The word clinical was selected "precisely to draw attention to the emphasis placed on classroom observation, analysis

of in-class events, and the focus on teachers' and students' in-class behavior" (Cogan, 1973, p.9). The word clinical is also used to suggest a "face to face relationship between teacher and supervisor" (Cogan, 1973, p.9). The primary emphasis of Clinical Supervision is on the teacher's professional development or, said in a different way, "it is supervision which helps the teacher improve his or her instructional performance" (Cogan, 1973, p.9). Clinical Supervision requires that teachers and supervisors attack problems together and rests on the conviction that instruction can only be improved by direct feedback to a teacher on aspects of teaching that are of concern to the teacher.

It is important to note that the Clinical Supervision process identified above is one way of defining the pre-conference, observation and post-conference supervisory process. Other authors use different names to identify the same supervisory process in their writing. Examples include Carl Glickman's (1985) Developmental Supervision and Costa's (1984) Cognitive Coaching. For the purpose of this study the term Instructional Supervision will be used to describe the supervision process.

Supervision and the Supervisory Conference

Throughout the past 25 years of the development of Instructional Supervision very little research has investigated the area of interaction between teachers and supervisors in supervisory conferences. This is surprising since this is a concept central to the whole Instructional Supervision approach. The following research, however, helps to identify the concepts and processes which have helped to clarify supervisor behavior during the supervisory conference.

Blumberg (1974) examined the behavior styles of supervisors and factors that both supervisors and teachers see as affecting their productivity. They viewed supervision as a master-apprentice relationship with the supervisor as "the control figure by virtue of his wisdom or authority and power" (Blumberg, 1974, p.43). Instructional Supervision does not support this conclusion, since Instructional Supervision is based on the proposition that the supervisor-supervisee relationship is one of mutuality. The teacher and supervisor work as colleagues. However, the study has implications for Instructional Supervision, since Blumberg considered supervision behavior to range along a continuum from highly direct to highly indirect. The following supervisory styles were identified:

STYLE A - High Direct, High Indirect

The teacher sees the supervisor emphasizing both direct and indirect behavior: the supervisor tells and criticizes but also asks and listens.

STYLE B - High Direct, Low Indirect

The teacher perceives the supervisor as doing a great deal of telling and criticizing but very little asking or listening.

STYLE C - Low Direct, High Indirect

The supervisor's behavior is rarely direct (telling, criticizing, etc.); instead puts a lot of emphasis on asking questions, listening, and reflecting the teacher's ideas and feelings.

STYLE D - Low Direct, Low Indirect

The teacher sees the supervisor as passive, not doing much of anything.

Using these styles of supervisor behavior Blumberg and Amidon investigated teachers' perceptions of supervisors' behavior in conferences and concluded that:

A. High indirect supervisory behavior, whether combined with high direct behavior or not, is related to evaluations of greater conference productivity.

B. High indirect combined with high direct supervisory behavior is related to learning

about one's self both as a teacher and as a person.

C. Freedom to communicate in the conference appeared to be curtailed only when the supervisor exhibited a combination of high direct and low indirect behavior (Blumberg, 1965).

The above conclusions support Instructional Supervision since it also works to develop conference behavior which is productive. A teacher becomes more fulfilled "as a person and in the relationship with the organization when the teacher experiences a sense of communicative openness, colleagueship with the supervisor, personal worth, independence, freedom, and support for risk taking" (Blumberg, 1974, p.66). The points identified above can be facilitated and nurtured through supervisory styles more similar to styles A and C than to styles B or D.

Glickman (1985) examined supervisor behavior and, like Blumberg, was able to develop behavior categories which he placed on a continuum. These categories are called nondirective, collaborative, and directive and are identified by the amount of power or control the supervisor maintains throughout the conference. The following supervisor approaches were identified:

Nondirective Interpersonal Approach

When a supervisor listens to the teacher, clarifies what the teacher says, encourages the teacher to speak more about the concern, and reflects by verifying the teacher's perceptions, then clearly it is the teacher who is in control. The supervisor's role is that of an active prober or sounding board for the teacher to make his or her own decision. The teacher has high control and the supervisor has low control over the actual decision.

Collaborative Interpersonal Approach

When a supervisor uses nondirective behaviors to understand the teacher's point of view but then participates in the discussion by presenting his or her own ideas, problem solving by asking all parties to propose possible actions, and the negotiating to find a common course of action satisfactory to teacher and supervisor, then the control over the decision is shared by all.

Directive Interpersonal Approach

When a supervisor directs the teacher in what will be done, standardizes the time and criteria of expected results, and reinforces the consequences of action or inaction, then the supervisor has taken responsibility for the decision. The

supervisor is clearly determining the actions for the teacher to follow (Glickman, 1985).

These supervisory styles correspond to Blumberg's styles in the following way:

Glickman	Blumberg
Nondirective	Style C - Low Direct, High Indirect
Collaborative	Style A - High Direct, High Indirect
Directive	Style B - High Direct, Low Indirect

Glickman (1985) further clarified his position on Developmental Supervision by stating that for supervision to be effective it must be a function that responds to the developmental stages of teachers. Teachers are not all alike in their thinking or their motivation for teaching.

The abstract thinking ability in teachers "can be classified as low, moderate or high" (Glickman, 1985, p.58). According to this classification, teachers with low levels of abstract thinking have difficulty in determining whether changes in their classroom are necessary. They often do not see the relationship of their own behavior as part of the problem. Teachers with moderate levels of abstract thinking realize that improvement is needed but have difficulty deciding what action should be taken. Highly abstract teachers can use a rational process of problem solving by incorporating several sources of

information and applying their own knowledge and experience to solve problems.

In order to maximize the effectiveness of supervision, Glickman suggests that the supervisor take into account the teacher's level of abstract thinking. In this way the supervisory process can be most useful to the teacher instead of it being above or below the teacher's level of understanding. Glickman (1985) also identifies three levels of teacher motivation. These levels can be placed on a continuum beginning with egocentric (survival and security), to group motivation (students in the classroom), to altruistic motivation (concerns for all students).

It is upon this theory - the relationship between supervisory style and teachers' level of abstract thought, that Glickman bases his approach to supervision. In this way Developmental Supervision is directed towards the teacher gaining the ability needed to take control of the supervision process. To accomplish this the supervisor may begin with behavior which comes from the directive end of the supervision continuum. On other occasions, the supervisor may start with collaboration or nondirective supervision. The starting point is determined by where the teacher is functioning and is directed towards the goal of nondirective supervision.

Costa (1984) referred to supervision as Cognitive Coaching, which is the supervisor's application of a set of

strategies designed to enhance the teacher's perceptions, decisions, and intellectual functions. Costa argued these inner thought processes are prerequisite to improving overt instructional behaviors which will, in turn, produce greater student learning. The goals of Cognitive Coaching are to:

A. create and maintain trust

B. facilitate teacher learning

C. foster the development of teacher autonomy.

Cognitive Coaching is intended to expand a teacher's repertoire of skills and to enchance the capacity for self-supervision and self-evaluation. "If supervisory efforts are to result in learning, then there should be some change in the teacher's thinking which, in turn, results in a change in behavior" (Costa, 1984, p.15). The quality of learning resulting from the supervisory process should reflect knowledge and application of the basic principles of human developmental sequences in learning. Bruner (1960) and Piaget (1953) have helped us understand that learning proceeds through developmental stages from:

A. the concrete - sensory and enactive stages involved in direct experience.

B. through to the representational and figural stages involved with visual experiences.

C. to the more abstract, symbolic stages involving indirect and semantic thinking.

Bloom (1968) has constructed a model of thinking which progresses through increasingly higher levels of thinking from simply recalling information, through the processing or making meaning out of the information, to the application of ideas in novel situations. By using these stages of intellectual development Cognitive Coaching can guide the supervision process by "starting at the teacher's level of dependency and level of thinking and work towards the goal of teacher autonomy" (Costa, 1984, p.10).

It is apparent that many authors agree on similar aspects of the supervision process. Research documenting the supervisor's behavior, however, needs to be developed to understand better what happens in supervisory conferences.

Use of Interaction Analysis in the Supervisory Conference

Literature in the field of supervision was found, for the most part, to relate to studies based on perceptions. Recently, however, research employing interaction analysis has enabled researchers to identify more accurately

patterns in the supervision process. Techniques developed by Flanders, Blumberg, Weller and Thorlacius have created observational category systems for coding verbal and non-verbal communication and methods to arrange data into useful displays in order to study the data for patterns of behavior.

Observational category systems have a number of advantages over less structured methods. These systems "allow researchers to produce comparable data with a minimum of observer bias, have less need for extensive observer training, and to allow greater ease in maintaining observer reliability" (Keir, 1981, p.30). It may be appropriate that research in supervision use interaction analysis since "any situation in which people are interacting face-to-face is amenable to behavioral analysis by categories appropriate to it" (Blumberg, 1974, p.92). These coded factual data along with qualitative data can give a researcher a very clear idea of the concept being studied.

Blumberg's (1974) system for the analysis of supervisory conferences was designed to provide information on how help is offered and the relative supportiveness or defensiveness of communications between supervisors and teachers. It was incorporated into this analysis system that the supervisor was the most important member of the group. Because of this, 10 of Blumberg's 15 categories were allocated to supervisor behavior and only 4 to teacher behavior. One

category was reserved for silence and confusion. Blumberg's Category System measures accurately the data that he wanted to collect. However, it was not suitable for this research for two reasons:

A. "His system examines the supervisor's verbal behavior but it does not provide much information on the behavior of the supervisee. Since Instructional Supervision places a high value on the active participation of both supervisor and supervisee it is important to examine comparable parameters of each participant's interaction" (Thorlacius, 1980, p.5).

B. In working to create a collegial relationship one would tend to work towards less influence and control by the supervisor and work towards developing the teacher's own influence and control in the supervisory conference.

Weller's (1971) observational category system called MOSAICS (Multidimensional Observational System for the Analysis of Interaction in Instructional Supervision) is a model which was developed to study Instructional Supervision. It was designed for the analysis of teaching interactions where the supervisor was instructing the teacher about teaching. It also identified the participants' verbal interaction. The coding procedure involves two coders who work independently. Once they have

checked their coding their differences are arbitrated by a further two coders. The major problems with this analysis model in research are the cost and time factors involved in having more than one coder for each observation.

In 1978, Thorlacius created the observational category system called STACS, which stands for Supervisor Teacher Analogous Categories System. This system consists of nine categories which give equal recognition to both supervisor and teacher behavior. Supervisor behavior is indicated by single digit numbers while teacher behavior is indicated by two digit numbers. The exception is category ten which indicates silence or confusion on either the supervisor's or teacher's part. The categories describe the verbal and non-verbal behavior of the conference participants and was used to identify the verbal behavior patterns needed in his research. The STACS system was also created to collect data in Instructional Supervision conferences, thus helping to make this method of data collection appropriate to the study.

STACS has been used successfully in three research studies. Thorlacius (1982) examined the changes in supervisory behavior resulting from training in Instructional Supervision. The process used was to examine the pre and post-course supervisory behaviors of the participants by analyzing video taped supervisor-teacher conferences before and after Instructional Supervision training.

The specific objectives of the study were to examine how supervisory behavior changed in each category of STACS and to identify whether there was an overall increase or decrease in each behavior. The results showed that 6 out of 9 supervisor categories and 4 out of 9 teacher categories by STACS showed changes which, according to analysis of variance, were beyond .05 level of significance. This study suggested that there is a high probability that the changes were the result of the treatment. Thorlacius noted that further study was needed to determine the permanence of changes in behavior.

Keir (1981) worked to determine the nature and extent of changes in supervisor conference behavior which could be attributed to participation in semester-long workshop programs providing training in the Instructional Supervision model for supervising teachers. Data were gathered from video tapes of baseline and post-workshop conferences through the employment of the STAC system. The results show that there were significant changes in 11 of the 14 variables between baseline and post-workshop conferences. The study findings indicated a major change between baseline and post-workshop conferences in the area of greater self evaluation by teachers. This implication was clearly indicated in the considerable reduction in supervisor provision of unsolicited opinion or suggestion, and in

the significant increase in supervisor solicitation of opinion or suggestion from teachers.

The findings also indicated a second major change in supervisors' conference behavior. If baseline conferences were characterized by supervisor provision of unsolicited evaluative behavior, their post-workshop conferences were most noteworthy for the dramatic increase in their provision of information solicited by teachers. This behavior was almost non-existent in baseline conferences, but accounted for 13 percent of supervisor activity in post-workshop conferences.

Trew (1979) found a significant difference in the percentages in the categories of more solicited information and less unsolicited opinion. These findings are also supported by the Thorlacius and Keir studies.

Keir's study, which identified changes in supervisor conference behavior, as with the Thorlacius study did not investigate the permanence of these changes over time. At this time it is not known what the effect time has on learned conference behavior in supervisory conferences.

Whitehead (1982) studied to determine whether practicum students could identify which of their teacher associates had taken the Instructional Supervision course and those who had not. The students' perceptions were assessed by means of a questionnaire which included the following categories:

A. the Instructional Supervision process as a whole

B. freeing vs. binding supervisor behaviors

C. direct vs. indirect supervisor style

D. information vs. opinion emphasis of supervisor feedback

E. solicited vs. unsolicited supervisor feedback.

The results identified significant differences between the teacher associates trained and untrained in Instructional Supervision since those using the Instructional Supervision approach received higher ratings on the questionnaire. A similar result was apparent for the fifth category - solicited vs. unsolicited supervisor feedback. Students whose teacher associate had taken the Instructional Supervision course perceived that their supervisor provided proportionately less unsolicited feedback and more solicited feedback about their performance. This research has shown us that student teachers can identify a difference between supervisors who have Instructional Supervision training and those who do not.

Chapter III

Research Design and Methodologies

Research Design

The design of this study was the pre-test/post-test design since each member of the sample group had their post observation conference skills measured at two intervals. The pre-test was a video tape which provided an example of each supervisor's conference behavior at the end of Education 5530. The post-test in this design was a second conference video tape which occurred for one group of supervisors after 6 months, for the second group after 1 year, and for the third group after 18 months. The difference between the two conference tapes identifies a measure of the change of the skills learned during the Instructional Supervision course reflecting both permanence of the skills and the influence of chance to practice skills. Chance to practice supervisory skills was determined through communication with each supervisor directly following the recording of the second video tape.

The Sample

The sample of this study was drawn from the graduate students at the University of Lethbridge who had taken part in Education 5530 - Instructional Supervision, and who had given their written consent to take part in the study. The sample included students from four different Instructional Supervision classes which took place during the spring of 1985, the spring of 1986, and the first summer session of 1986. Taken together the total number of possible subjects in these classes equalled 39. For various reasons, however, the following did not take part in the study:

- 14 students decided not to take part in the study.
- 6 students were not included as part of the study due to the decision on the part of the researcher to limit the sample to supervisors who work in a school environment.
- 3 students were not able to take part in the study due to the fact that their post-course video tape could not be located at the University.
- the researcher's supervisory conference behavior was also not included.

The subjects in this study were selected on the basis of their availability and willingness to participate in the study. All had classroom teaching assignments while six had some administrative assignments. The remaining three

supervisors who agreed to take part in the study were dropped due to technical problems.

Limitations

Limitations of the study include the following four factors:

1. The non-random nature of the selection of supervisors.

2. The effect video taping had on the subjects in the study.

3. Knowledge of the STACS instrument used in this study, on the part of the supervisors, may have had an effect on the subjects' behavior.

4. Six of the supervisors in the sample were administrators who were also teaching much of the time which may have had an effect on supervisee behavior.

Instrumentation

Categories of Behavior

The instrument used to collect data on supervisor behavior in supervisory conferences was the Supervisor-Teacher Analogous Categories System (STACS). STACS

consists of nineteen categories which give equal recognition to both supervisor and teacher behavior. Supervisor behavior is indicated by single digit numbers while teacher behavior is indicated by two digit numbers, with the exception of category 10 which indicates either silence or confusion caused by both supervisor and teacher talking at the same time. The STACS categories effectively describe both verbal and non-verbal conference behavior. Non-verbal behavior is included because "it is especially important to be able to make interpretations based on either congruency or lack of congruency between the verbal and non-verbal behavior of both participants" (Thorlacius, 1980, p.85). A description of the STACS categories of behavior has been included in Appendix A.

Coding Procedure

The computerized Timed Interval Categorical Observation Recorder (TICOR), which was developed by Wadham (1977) was used in this study to record conference behavior using the STACS categories. The TICOR system collects and records observational data through the use of both hardware and software programs. In the case of this research the system was used to record observed data directly from each video tape.

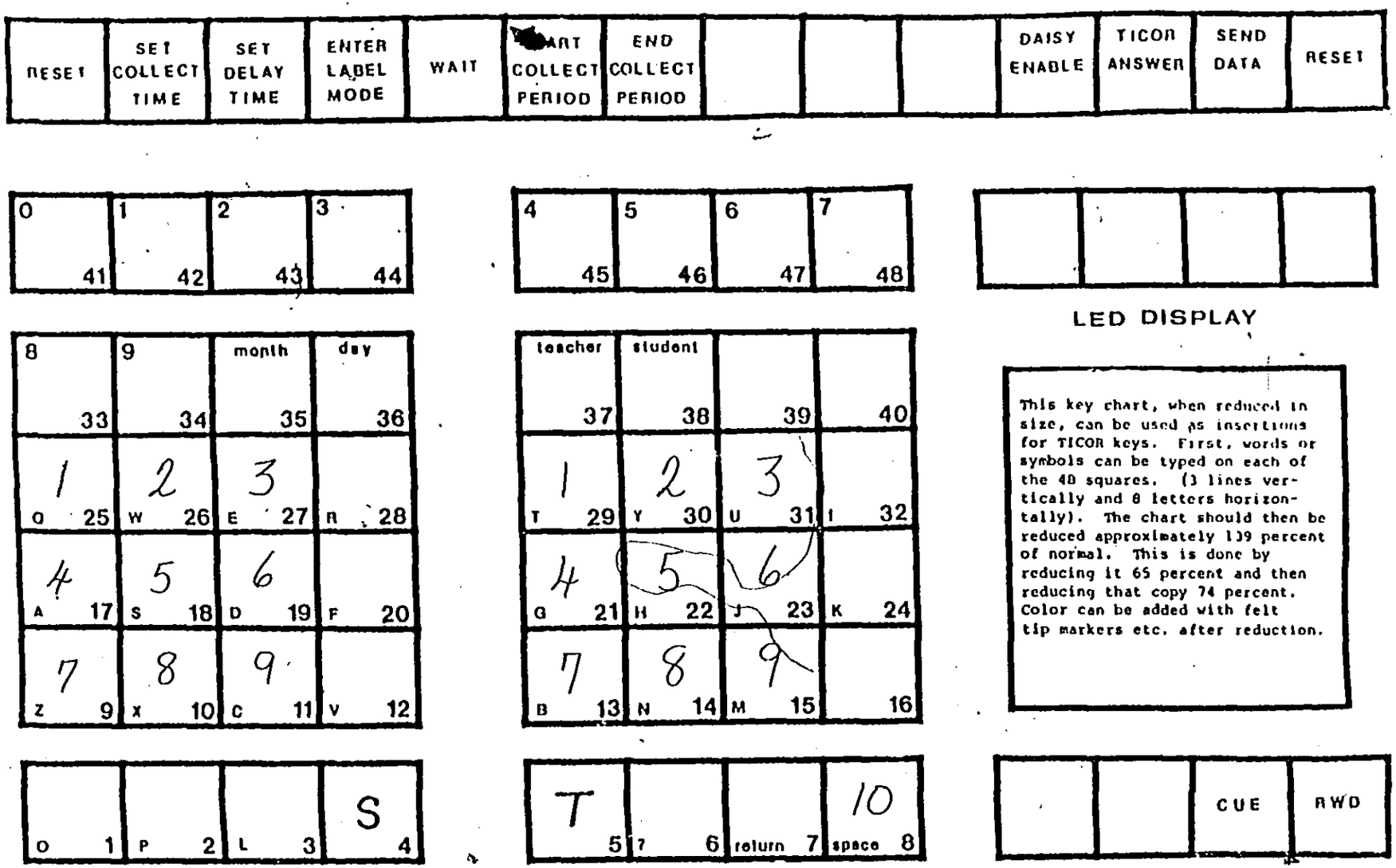
The face of the TICOR unit contains a set of keys on both its left and right hand side. The keys were labelled

according to the STACS coding system. In addition, three primary keys were identified to distinguish between supervisor behavior, teacher behavior and silence or confusion. This enables the user to depress a primary key indicating, for example, supervisor behavior and, while that key is down a secondary key may be pressed to record what category of supervisor behavior is being used. A similar and simultaneous function is available for teacher behavior so that one can record either simultaneously or separately, each category of supervisor and/or teacher behavior. While each primary key is held down it records the duration, in seconds (accurate to one-tenth of a second), of the specified behavior. When the key is released TICOR automatically terminates the identified string of behavior and awaits the depressing of the next primary key with its modifier. If, for example, supervisor behavior changes from one category to another one must release the primary key and press it again with a new modifier; similarly for teacher behavior.

Figure 1 shows the key pad on the TICOR recorder.

Figure 1

TICOR Key Pad



This key chart, when reduced in size, can be used as insertions for TICOR keys. First, words or symbols can be typed on each of the 40 squares. (3 lines vertically and 8 letters horizontally). The chart should then be reduced approximately 139 percent of normal. This is done by reducing it 65 percent and then reducing that copy 74 percent. Color can be added with felt tip markers etc. after reduction.

In order to check the accuracy of the TICOR data collection procedure the researcher ran test data through the system in a controlled manner. Each category of supervisor behavior was tested by depressing a secondary key, numbers one through nine, while having the supervisory primary key depressed for ten seconds. Likewise each category of teacher behavior was tested by depressing a secondary key, numbers eleven through nineteen, while having the teacher primary key depressed for ten seconds. Category ten, silence or confusion, was also tested for ten seconds. Once this was completed the test data was taken from the TICOR data cassette and fed into the computer for analysis. When the computer print-out of the data was compared to the researcher's actual test data the results showed that TICOR recorded all nineteen categories of conference behavior. When the duration of time per response was examined the results showed that TICOR recorded each category of behavior very close to ten seconds with a range from 9.1 to 10.3 seconds. This variation in recorded times was due to the researcher's manual dexterity.

Reliability

Reliability may be defined as the stability of the measuring device: "Data are reliable when two or more observations of the same event result in the same recording" (Watson & Thorp, 1972, p.98).

Intra-rater Reliability

To obtain two observations of the same event, the researcher re-coded the video tapes of two randomly selected supervisors and compared them with the initial codings completed previously. To measure the researcher's level of reliability Scott's Coefficient of Reliability was used (Scott, 1955, 321-325). Ober (1970) used this coefficient of reliability to test the reliability of his Reciprocal Category System of classroom observation which is similar to the STACS method. Both systems use nineteen categories and utilize identical categories for both parties involved in their respective observations.

The researcher's intra-rater reliability measures were .73 and .75 which were considered acceptable for purposes of this study, as a reliability of ".70 can be achieved by most serious students" (Ober, Bentley, & Miller, 1971, p.85). In order to obtain a frame of reference for these values of the researcher's intra-rater reliability two of

the research studies reviewed in Chapter 2, which included intra-rater reliability scores, were consulted. It was discovered that the intra-rater reliability reported by Trew (1979) was .62 while the intra-rater reliability reported by Keir (1981) was .79.

Since Scott's Coefficient of Reliability measures were computed through a computer program the researcher tested the accuracy of the computer program. The process used to test the accuracy of the TICOR data collection procedure was repeated. This test data along with the test data gathered earlier gave the researcher two observations of the same event since each category of behavior was pressed once for ten seconds. The data from each test tape was put into the computer where the Scott's Coefficient of Reliability program was used. The results reported the following Scott's Correlation Co-efficients:

Raw Responses	1.00
Duration of Responses	.97

Inter-rater Reliability

The researcher trained with Ritchie Whitehead and achieved an inter-rater reliability score of .80 prior to coding the tapes for this study. To provide an estimate of the researcher's ability to code observed behavior in a manner consistent with a second coder two additional

inter-rater reliability checks occurred during the data collection period. Scott's Coefficient of Reliability was used to obtain the measure of inter-rater reliability. The three reliability values were .80, .66 and .81 which were considered acceptable for purposes of this study. Scott states "if the pair of coders had agreed on 80 per cent of their judgments the index of inter-coder agreement would be .66" (1955, p.321).

In order to compare the researcher's inter-rater reliability two of the research studies reviewed in Chapter 2 which included inter-rater reliability scores were consulted. It was discovered that the inter-rater reliability reported by Trew (1979) was .65 while the inter-rater reliability reported by Keir (1981) was .79.

Validity

As Isaac (1971, p.83) stated, validity "is the degree to which the test is capable of achieving certain aims." In this case the STACS instrument has been used by Thorlacius in his study at the University of Lethbridge in 1980. The method was also used by Keir in 1981 at the University of Calgary in his thesis and Trew in 1979 at the University of Regina in her thesis. All three researchers found the STACS instrument to provide a reasonable accurate

measure of supervisor conference behavior which supports the content validity of the instrument. Although construct validity has not been verified both Jon Thorlacius and Ritchie Whitehead from the University of Lethbridge agree that the categories of behavior used in the research design were valid for this study.

Research Question

The purpose of this study was to examine changes in supervisory behavior following a time lapse after training to determine differences within groups of supervisors who had a significant chance to practice supervisory skills as compared to a group who had no chance to practice. In order to study these effects on supervisory skills the following question was examined:

Do participants who had opportunity to practice supervision skills differ significantly from those participants that had no opportunity to practice their skills in each of the following variables:

A. Supervisor behavior which accepts or uses the other's ideas.

B. Supervisor behavior which solicits opinion or suggestion.

C. Supervisor behavior which provides solicited information.

D. Supervisor behavior which provides solicited opinion or suggestion.

E. Supervisor behavior which provides unsolicited information.

F. Supervisor behavior which provides unsolicited opinion or suggestion.

G. Teacher behavior which solicits information.

H. Teacher behavior which solicits opinion or suggestion.

I. Teacher behavior which provides solicited opinion or suggestion.

J. Teacher behavior which provides unsolicited information.

K. Teacher behavior which provides unsolicited opinion or suggestion.

Collection of the Data

Permission to collect data for the study was obtained from each supervisor. Teachers working with the supervisors involved in the study also gave their permission to the researcher for the tapes to be used with the understanding that their conference behavior was not the focus of the

study. Each supervisor supplied the researcher with a video tape which became an example of their post-course supervisory behavior as well as an example of their final conference behavior six to eighteen months later. Table 1 shows the number of subjects in each of the three time periods.

Table 1

NUMBER OF SUBJECTS IN EACH TIME PERIOD

6 Months	12 Months	18 Months
6	4	2

All data were collected on video tape using portable recording equipment. The video camera was used to frame both supervisor and supervisee in the picture in order to observe non-verbal behavior during the conference. Video tape was chosen to record conference behavior in order to accommodate the non verbal requirements of the STACS instrument. The data regarding conference behavior was collected through using the STACS and TICOR instruments as described earlier. In order to determine which supervisors had practiced their supervision skills during the time lapse each supervisor was asked directly after the second video was taped to identify the extent to which they had

been involved in Instructional Supervision during the research period. This information was used to place each supervisor in either the practice or no practice group in the sample.

Treatment of the Data

The data collected in the study were interval in nature. It was appropriate, therefore, to adopt parametric statistical techniques in order to analyze the data.

To test for statistically significant differences between supervisors' post-course and final supervisory conference behavior a 2-way Analysis of Variance procedure was employed.

The procedure used involved coding the post-course and final conference video tapes using the TICOR recorder. Once the coding was completed TICOR was hooked up to the computer for analysis. Using a program developed for STACS the computer provided print-outs for each supervisor's post-course and final conference video tape (see Figure 2). These print-outs showed duration of time (to one-tenth of a second) devoted to each category of behavior as identified by the STACS instrument. Data from all twelve supervisors were then analyzed using the SPSS-X computer program for 2-way Analysis of Variance. Graphs of means and standard

deviations were produced using the Statview 512+ computer program for the Macintosh computer.

Figure 2

STACS Summary Print-Out

STACS RESEARCH FILE:
DATE: 0/ 0 SUPERVISOR:*** TEACHER: MINUTES OF OBSERVATION: 9.46
TOTAL SECONDS TIME: 567.4 NULL TIME: 11.6 TIME UTILIZED: 555.8

EXPLANATION	NUM RESP	RESP /MIN	STAND DEV	% RESP	DURATION	MEAN	STAND DEV	% DUR
NULL TIME	28.	2.96	1.47	27.45	11.6	0.41	0.61	2.04
SUPERVISOR BEHAVIOUR	32.	3.38	1.47	31.37	382.9	11.97	11.01	67.48
TEACHER BEHAVIOUR	42.	4.44	1.66	41.18	193.3	4.60	6.48	34.07
TOTAL RESPONSES:	102.	10.79	3.68	100.00	587.8	5.76	8.71	

EXPLANATION	NUM RESP	RESP /MIN	STAND DEV	% RESP	DURATION	MEAN	STAND DEV	% DUR
NULL TIME	28.	2.96	1.47	27.45	11.6	0.41	0.61	2.04
SUP. ACCEPTS OR USES	5.	0.53	0.67	4.90	3.2	0.64	0.19	0.56
SUP. SOLICITS INFO.	1.	0.11	0.30	0.98	2.1	2.10	0.00	0.37
SUP. PROVIDES SOLICITED	16.	1.69	1.02	15.69	321.5	20.09	9.99	56.66
SUP. PROVIDES UNSOL. INF	1.	0.11	0.30	0.98	8.7	8.70	0.00	1.53
SUP. PROVIDES UNSOL. OP-	9.	0.95	0.94	8.82	47.4	5.27	2.77	8.35
TEACH. SUPPORTIVE	5.	0.53	0.92	4.90	2.6	0.52	0.04	0.46
TEACH. ACCEPTS OR USES	17.	1.80	1.10	16.67	13.0	0.76	0.49	2.29
TEACH. SOLICITS INFO.	4.	0.42	0.66	3.92	10.8	2.70	1.11	1.90
TEACH. PROVIDES SOL. INF	1.	0.11	0.30	0.98	2.2	2.20	0.00	0.39
TEACH. PROVIDES UNSOL. I	11.	1.16	0.70	10.78	124.5	11.32	7.81	21.94
TEACH. PROVIDES UNSOL. O	4.	0.42	0.66	3.92	40.2	10.05	5.36	7.08

Chapter IV

Presentation and Analysis of Data

Introduction

The 11 variables identified in the research question were analyzed in each conference by identifying the percent of conference duration supervisors used each variable. Once these percent durations were identified the amount of change for each variable over the research period was determined. In order to test for significant differences between the group of supervisors who were able to practice their supervisory skills and the group of supervisors who were unable to practice their supervisory skills two way Analysis of Variance was used. Since 11 separate ANOVA's were conducted, each containing 3 F ratio's an alpha level of 0.01 was chosen to represent statistical significance, thus reducing the likelihood of spurious significance. A detailed analysis of each variable follows.

Supervisor Behavior Which Accepts or Uses the Other's Ideas

Tables 2 and 3 and Figure 3 present data which represents differences in supervisor behavior which accepts or uses the other's ideas. Figure 3 uses the data found in

Table 2

Supervisor Behavior Which Accepts or Uses the Other's Ideas

	Practice (post)	Practice (final)	No Practice (post)	No Practice (final)
1	10.83	0	5.04	2.67
2	2.60	7.21	3.50	1.18
3	4.52	2.91	3.00	0
4	4.37	.40	0	.52
5	2.30	4.43	7.52	7.44
6	5.62	1.59	.47	.51
Mean	5.04	2.76	3.26	2.05
Std. Dev.	3.10	2.72	2.82	2.79

Figure 3

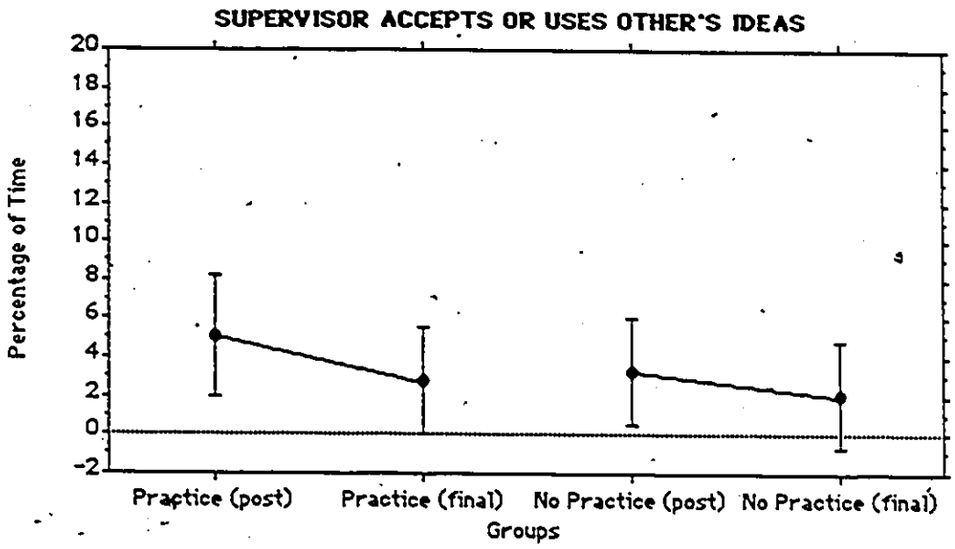

SUPERVISOR ACCEPTS OR USES OTHER'S IDEAS
Percentage of Time
20
18
16
14
12
10
8
6
4
2
0
-2
Practice (post)
Practice (final)
No Practice (post)
No Practice (final)
Groups

Table 3

Analysis of Variance Scores for Supervisor Accepts or Uses the Other's Ideas

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF. OF F
Main Effects	27.506	2	13.753	1.675	0.212
Practice	9.288	1	9.288	1.131	0.300
When	18.218	1	18.218	2.219	0.152
2-Way Interactions	1.755	1	1.755	0.214	0.649
Practice-When	1.755	1	1.755	0.214	0.649
Explained	29.261	3	9.754	1.188	0.339
Residual	164.172	20	8.209		
Total	193.433	23	8.410		

Table 2 to create a plot of the means for the four types of conferences with a + or - one standard deviation error bars. The line connecting the two means has no statistical value, however, it aids the eye to see an increase or decrease between the means. The other variables in this study use tables and figures to present their data using the same format. The data for this variable in post-course conferences where supervisors were able to practice their supervision skills ranged from 2.30% to a maximum of 10.83% of conference duration; with a mean of 5.04%. Final conferences for this group had a mean of 2.76% of conference duration ranging from 0.0% to 7.21%.

Within this group of supervisors who were able to practice their supervisory skills, 4 decreased in their amount of use of this variable while the other 2 supervisors used more of the other's ideas in their conferences. A mean decrease of 2.28% of conference duration was, therefore, experienced between post-course and final conferences for this variable.

Accepting or using the other's ideas in post-course conferences where supervisors were not able to practice their supervision skills ranged from 0.0% to a maximum of 7.52% of conference duration, with a mean of 3.26%. Final conferences for this group had a mean of 2.05% of conference duration ranging from 0.0% to 7.44%.

Within this group of supervisors who were not able to practice their supervisory skills, 4 decreased their amount of use of this variable while the other 2 supervisors used more of the other's ideas in their conferences. A mean decrease of 1.20% of conference duration was, therefore, experienced between post-course and final conference.

The analysis of variance indicated no statistically significant differences for either of the main effects (practice to no practice or post to final) or for the interaction between the two main effects.

Supervisor Behavior Which Solicits Opinion or Suggestion

Tables 4 and 5 and Figure 4 present data which show changes in supervisor behavior which solicits opinion or suggestion. The data for this variable in post-course conferences where supervisors were able to practice their supervision skills ranged from 0.0% to a maximum of 10.43% of conference duration, with a mean of 4.50%. Final conferences for this group had a mean of 5.65% of conference duration ranging from 0.0% to 13.73%.

Within this group of supervisors who were able to practice their supervisory skills, 3 decreased in their amount of use of this variable while the remaining 3 supervisors solicited more opinion or suggestion in their conferences. A mean increase of 1.15% of conference

Table 4

Supervisor Behavior Which Solicits Opinion or Suggestion

	Practice (post)	Practice (final)	No Practice (post)	No Practice (final)
1	7.70	0	9.29	0
2	0	13.73	1.82	1.27
3	10.43	4.01	6.92	0
4	6.25	4.90	3.23	3.21
5	0	2.99	1.04	4.43
6	2.64	8.27	1.52	0
Mean	4.50	5.65	3.97	1.48
Std. Dev.	4.29	4.78	3.69	1.91

Figure 4

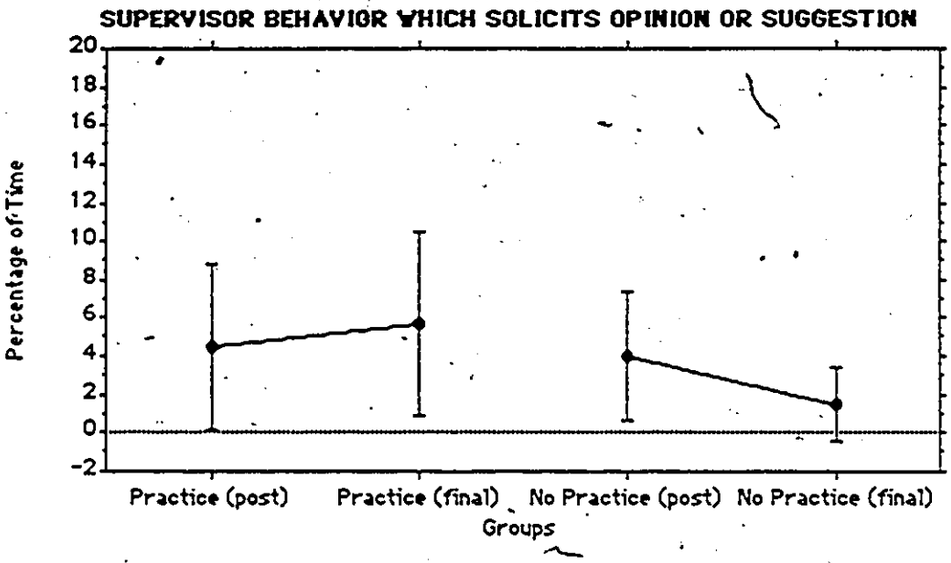

SUPERVISOR BEHAVIOR WHICH SOLICITS OPINION OR SUGGESTION
Percentage of Time
20
18
16
14
12
10
8
6
4
2
0
-2
Practice (post)
Practice (final)
No Practice (post)
No Practice (final)
Groups

Table 5

Analysis of Variance Scores for Supervisor Behavior Which Solicits Opinion or Suggestion

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF. OF F
Main Effects	35.798	2	17.899	1.270	0.303
Practice	33.112	1	33.112	2.349	0.141
When	2.687	1	2.687	0.191	0.667
2-Way Interactions	19.784	1	19.784	1.404	0.250
Practice-When	19.784	1	19.784	1.404	0.250
Explained	55.582	3	18.527	1.314	0.297
Residual	281.901	20	14.095		
Total	337.483	23	14.673		

duration, however, was experienced between post-course and final conferences for this variable.

Soliciting opinion or suggestion in post-course conferences where supervisors were not able to practice their supervision skills ranged from 1.04% to a maximum of 9.29% of conference duration, with a mean of 3.97%. Final conferences for this group had a mean of 1.48% of conference duration ranging from 0.0% to 4.43%.

Within this group of supervisors who were not able to practice their supervisory skills, 5 decreased their amount of use of this variable while the remaining supervisor solicited more opinion or suggestion. A mean decrease of 2.49% of conference duration was, therefore, experienced between post-course and final conferences.

The analysis of variance indicated no statistically significant differences for either of the main effects (practice to no practice or post to final) or for the interaction between the two main effects.

Supervisor Behavior Which Provides Solicited Information

Tables 6 and 7 and Figure 5 present data which represents differences in supervisor behavior which provides solicited information. The data for this variable in post-course conferences where supervisors were able to practice their supervision skills ranged from 14.13% to a maximum of 72.3% of conference duration, with a mean of

Table 6

Supervisor Behavior Which Provides Solicited Information

	Practice (post)	Practice (final)	No Practice (post)	No Practice (final)
1	32.10	44.96	21.91	20.49
2	72.30	16.04	27.88	17.82
3	27.24	17.39	23.06	36.75
4	14.13	28.86	20.45	29.28
5	36.82	34.04	25.20	13.05
6	46.45	42.99	16.23	35.70
Mean	38.17	30.71	22.45	25.51
Std. Dev.	19.84	12.33	4.01	9.83

Figure 5

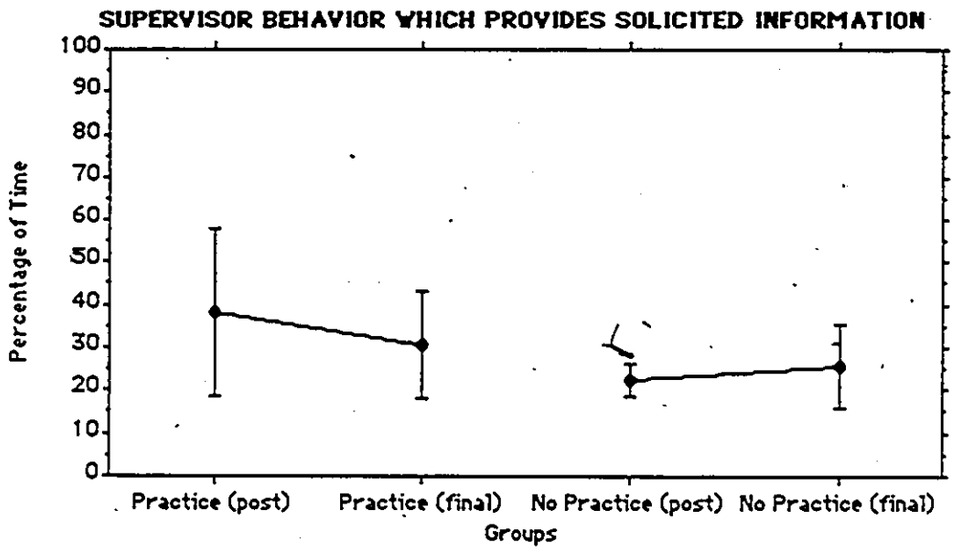

SUPERVISOR BEHAVIOR WHICH PROVIDES SOLICITED INFORMATION
Percentage of Time
100
90
80
70
60
50
40
30
20
10
0
Practice (post)
Practice (final)
No Practice (post)
No Practice (final)
Groups

Table 7

Analysis of Variance Scores for Supervisor Behavior Which Provides Solicited Information

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF. OF F
Main Effects	685.300	2	342.650	2.080	0.151
Practice	656.260	1	656.260	3.984	0.060
When	29.040	1	29.040	0.176	0.679
2-Way Interactions	166.006	1	166.006	1.008	0.327
Practice-When	166.006	1	166.006	1.008	0.327
Explained	851.306	3	283.769	1.723	0.195
Residual	3294.847	20	164.742		
Total	4146.153	23	180.268		

38.17%. Final conferences for this group had a mean of 30.71% of conference duration ranging from 16.04% to 44.96%.

Within this group of supervisors who were able to practice their supervisory skills, 3 supervisors increased their amount of use of this variable while the other 3 supervisors decreased their amount of providing solicited information in their conferences. A mean increase of 7.46% of conference duration was, therefore, experienced between post-course and final conferences for this variable.

Providing solicited information in post-course conferences where supervisors were not able to practice their supervision skills ranged from 16.23% to a maximum of 27.88% of conference duration, with a mean of 22.45%. Final conferences for this group had a mean of 25.51% of conference duration ranging from 13.05% to 36.75%.

Within this group of supervisors who were not able to practice their supervisory skills, 2 decreased their amount of use of this variable while the remaining 4 supervisors increased their amount of providing solicited information. A mean increase of 3.06% of conference duration was, therefore, experienced between post-course and final conferences.

The analysis of variance indicated no statistically significant differences for either of the main effects (practice to no practice or post to final) or for the interaction between the two main effects.

Supervisor Behavior Which Provides Solicited Opinion or Suggestion

Table 8 presents data which represents differences in supervisory behavior which provides solicited opinion or suggestion. This category failed to appear in many conferences and was used by only 3 supervisors. Because of lack of data it was decided that this variable would not be analyzed further.

Supervisor Behavior Which Provides Unsolicited Information

Tables 9 and 10 and Figure 6 present data which represents differences in supervisory behavior which provides unsolicited information. The data for this variable in post-course conferences where supervisors were able to practice their supervision skills ranged from 5.97% to a maximum of 13.36% of conference duration, with a mean of 9.10%. Final conferences for this group had a mean of 7.26% of conference duration ranging from 2.99% to 19.94%.

Within this group of supervisors who were able to practice their supervisory skills, 4 decreased in their amount of use of this variable while the other 2 supervisors increased their use of providing unsolicited information. A mean decrease of 1.84% of conference duration was, therefore, experienced between post-course and final conferences for this variable.

Table 8

Supervisor Behavior Which Provides Solicited Opinion or Suggestion

	Practice (post)	Practice (final)	No Practice (post)	No Practice (final)
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	3.97	0
5	0	0	0	0
6	1.18	2.26	0	12.97

Table 9

Supervisor Behavior Which Provides Unsolicited Information

	Practice (post)	Practice (final)	No Practice (post)	No Practice (final)
1	13.36	3.83	1.75	8.19
2	8.69	19.94	0	.71
3	6.56	9.22	4.62	5.11
4	11.91	3.32	8.20	3.61
5	8.10	2.99	0	12.18
6	5.97	4.23	.44	0
Mean	9.10	7.25	2.50	4.96
Std. Dev.	2.94	6.62	3.29	4.62

Figure 6

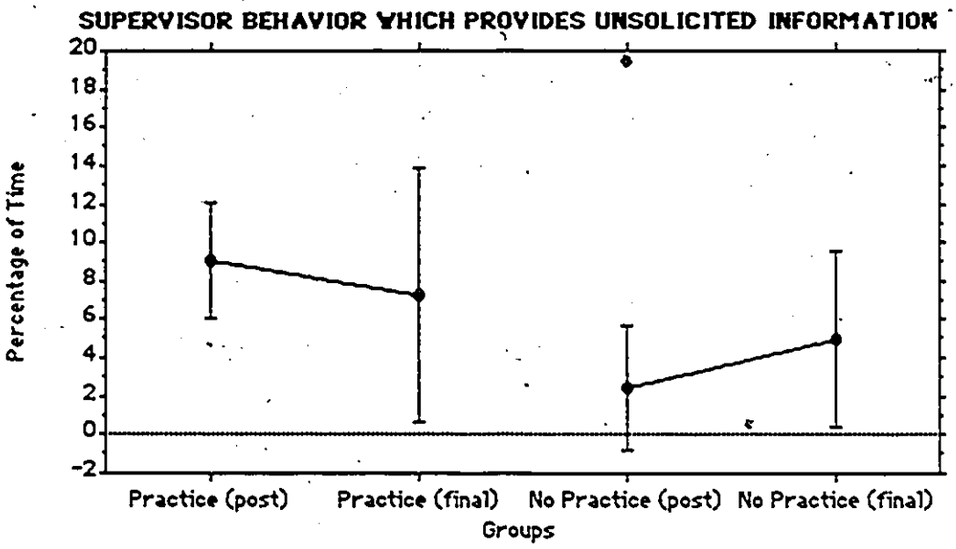

SUPERVISOR BEHAVIOR WHICH PROVIDES UNSOLICITED INFORMATION
Percentage of Time
20
18
16
14
12
10
8
6
4
2
0
-2
Practice (post)
Practice (final)
No Practice (post)
No Practice (final)
Groups

Table 10

Analysis of Variance Scores for Supervisor Behavior Which Provides Unsolicited Information

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF. OF F
Main Effects	118.995	2	59.497	2.806	0.084
Practice	118.415	1	118.415	5.584	0.028
When	0.580	1	0.580	0.027	0.870
2-Way Interactions	27.843	1	27.843	1.313	0.265
Practice-When	27.843	1	27.843	1.313	0.265
Explained	146.837	3	48.946	2.308	0.107
Residual	424.147	20	21.207		
Total	570.984	23	24.825		

Providing unsolicited information in post-course conferences where supervisors were not able to practice their supervision skills ranged from 0.0% to a maximum of 8.20% of conference duration, with a mean of 2.50%. Final conferences for this group had a mean of 4.96% of conference duration ranging from 0.0% to 12.18%.

Within this group of supervisors who were not able to practice their supervisory skills, 4 increased their amount of use of this variable while the other 2 supervisors used less providing unsolicited information in their conferences. A mean of 2.46% of conference duration was, therefore, experienced between post-course and final conferences.

Within this variable a factor which is close to statistical significance at the 0.01 level appears with the group which were able to practice their skills as compared to the group that were not able to practice their skills. Out of the 12 conferences in which supervisors were able to practice their skills, the group mean was 8.18% of conference duration while the 12 conferences in which supervisors were not able to practice their skills obtained a group mean of 3.73%. The mean difference was 4.45% of conference duration with a significance of 0.02.

The analysis of variance indicated no statistically significant differences for either of the main effects (practice to no practice or post to final) or for the interaction between the two main effects.

Supervisor Behavior Which Provides Unsolicited Opinion or Suggestion

Tables 11 and 12 and Figure 7 present data which represents differences in supervisor behavior which provides unsolicited opinion or suggestion. The data for this variable in post-course conferences where supervisors were able to practice their supervision skills ranged from 0.0% to a maximum of 5.45% of conference duration, with a mean of 3.20%. Final conferences for this group had a mean of 4.28% of conference duration ranging from 0.0% to 7.48%

Within this group of supervisors who were able to practice their supervisory skills, 3 supervisors increased their amount of use of this variable while 2 supervisors decreased their use of providing unsolicited opinion or suggestion in their conferences. One supervisor did not use this variable in either conference. A mean increase of 1.08% of conference duration was, therefore, experienced between post-course and final conferences for this variable.

Supervisor behavior which provides unsolicited opinion or suggestion in post-course conferences, where supervisors were not able to practice their supervision skills, ranged from 0.0% to a maximum of 18.21% of conference duration, with a mean of 6.54%. Final conferences for this group had a mean of 4.16% of conference duration ranging from 0.0% to 9.11%.

Table 11

Supervisor Behavior Which Provides Unsolicited Opinion or Suggestion

	Practice (post)	Practice (final)	No Practice (post)	No Practice (final)
1	4.68	7.03	5.22	1.79
2	2.63	7.48	0	2.69
3	5.45	4.27	11.51	6.94
4	0	0	18.21	4.41
5	5.16	3.75	4.30	9.11
6	1.28	3.15	0	0
Mean	3.20	4.28	6.54	4.16
Std. Dev.	2.25	2.74	7.11	3.15

Figure 7

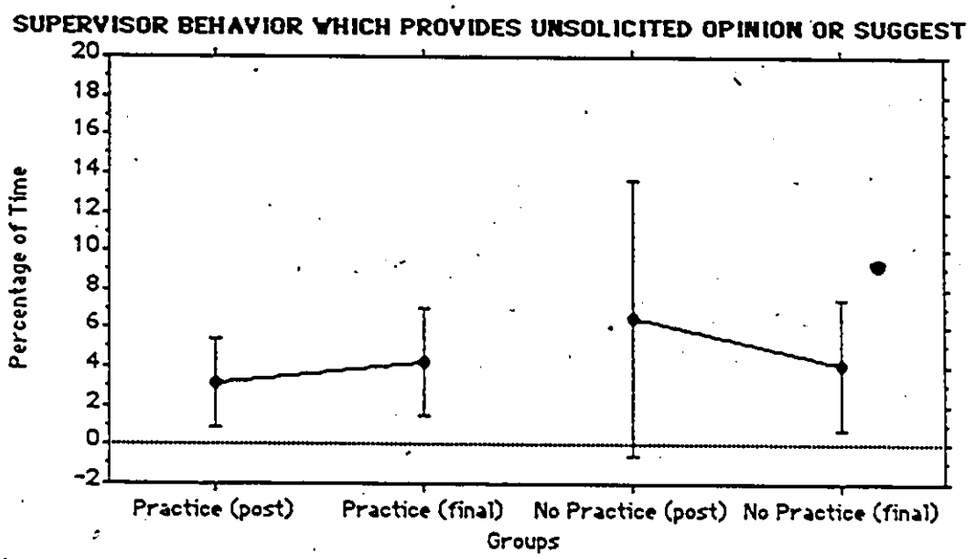

SUPERVISOR BEHAVIOR WHICH PROVIDES UNSOLICITED OPINION OR SUGGEST
Percentage of Time
20
18
16
14
12
10
8
6
4
2
0
-2
Practice (post)
Practice (final)
No Practice (post)
No Practice (final)
Groups

Table 12

Analysis of Variance Scores for Supervisor Behavior Which Provides Unsolicited Opinion or Suggestion

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF. OF F
Main Effects	18.068	2	9.034	0.4840	0.624
Practice	15.520	1	15.520	0.831	0.373
When	2.548	1	2.548	0.136	0.716
2-Way Interactions	17.992	1	17.992	0.963	0.338
Practice-When	17.992	1	17.992	0.963	0.338
Explained	36.060	3	12.020	0.643	0.596
Residual	373.594	20	18.680		
Total	409.655	23	17.811		

Within this group of supervisors who were not able to practice their supervisory skills, 3 decreased their amount of use of this variable while 2 others used more providing unsolicited opinion or suggestion in their conferences. One supervisor did not use this variable in either conference. A mean decrease of 2.39% of conference duration was, therefore, experienced between post-course and final conferences.

The analysis of variance indicated no statistically significant differences for either of the main effects (practice to no practice or post to final) or for the interaction between the two main effects.

Teacher Behavior Which Solicits Information

Tables 13 and 14 and Figure 8 present data which show changes in teacher behavior which solicits information. The data for this variable in post-course conferences, where the teachers worked with supervisors who were able to practice their supervision skills, ranged from 0.0% to a maximum of 2.13% of conference duration, with a mean of 1.02%. Final conferences for this group had a mean of 0.98% of conference duration ranging from 0.0% to 2.55%.

Within this group of teachers who worked with supervisors who were able to practice their supervisory skills, 2 decreased in their amount of use of this variable while 3 other teachers used more soliciting information. One

Table 13

Supervisor Behavior Which Solicits Information

	Practice (post)	Practice (final)	No Practice (post)	No Practice (final)
1	.58	2.55	.32	1.21
2	.68	0	2.89	.65
3	2.13	0	0	1.10
4	.75	.90	0	4.29
5	1.96	2.40	0	0
6	0	0	3.17	1.06
Mean	1.02	.97	1.06	1.39
Std. Dev.	.84	1.21	1.53	1.49

Figure 8

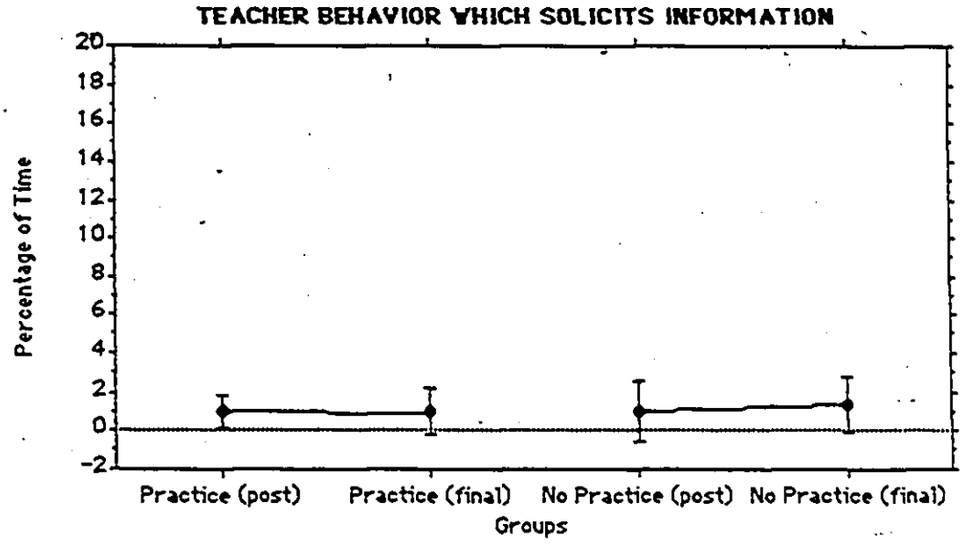

TEACHER BEHAVIOR WHICH SOLICITS INFORMATION
Percentage of Time
20
18
16
14
12
10
8
6
4
2
0
-2
Practice (post)
Practice (final)
No Practice (post)
No Practice (final)
Groups

Table 14

Analysis of Variance Scores for Teacher Behavior Which Solicits Information

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF. OF F
Main Effects	0.430	2	0.215	0.128	0.881
Practice	0.313	1	0.313	0.185	0.671
When	0.118	1	0.118	0.070	0.794
2-Way Interactions	0.198	1	0.198	0.117	0.735
Practice-When	0.198	1	0.198	0.117	0.735
Explained	0.628	3	0.209	0.124	0.945
Residual	33.741	20	1.687		
Total	34.370	23	1.494		

supervisor experienced no soliciting information on the teacher's part during the post or final conferences. A mean decrease of 0.04% of conference duration was, therefore, experienced between post-course and final conferences for this variable.

Teacher behavior which solicits information in post-course conferences where teachers worked with supervisors who were not able to practice their supervision skills ranged from 0.0% to a maximum of 3.17% of conference duration, with a mean of 1.06%. Final conferences for this group had a mean of 1.39% of conference duration ranging from 0.0% to 4.29%.

Within this group of teachers who worked with supervisors who were not able to practice their supervisory skills, 2 decreased in their amount of use of this variable while 3 other teachers used more soliciting information. One supervisor experienced no soliciting information on the teacher's part during the post-course or final conferences. A mean increase of 0.33% of conference duration was, therefore, experienced between post-course and final conferences.

The analysis of variance indicated no statistically significant differences for either of the main effects (practice to no practice or post to final) or for the interaction between the two main effects.

Teacher Behavior Which Solicits Opinion or Suggestion

Table 15 presents data which represents differences in teacher behavior which solicits opinion or suggestion. This category failed to appear in many conferences and was used by only 4 teachers. Because of the lack of data it was decided that this variable would not be analyzed further.

Teacher Behavior Which Provides Solicited Opinion or Suggestion

Tables 16 and 17 and Figure 9 present data which show changes in teacher behavior which provides solicited opinion or suggestion. The data from this variable in post-course conferences where the teacher worked with supervisors who were able to practice their supervision skills ranged from 0.0% to a maximum of 14.88% of conference duration, with a mean of 6.57%. Final conferences for this group had a mean of 8.81% of conference duration ranging from 0.0% to 18.04%.

Within this group of teachers, who worked with supervisors who were able to practice their supervisory skills, 3 decreased in their amount of use of this variable while 3 other teachers used more providing solicited opinion or suggestion. A mean increase of 2.24% of conference duration was, therefore, experienced between post-course and final conferences for this variable.

Table 15

Teacher Behavior Which Solicits Opinion or Suggestion

	Practice (post)	Practice (final)	No Practice (post)	No Practice (final)
1	0	0	0	0
2	0	0	.32	0
3	0	0	0	0
4	0	0	3.36	.26
5	0	0	0	0
6	0	.44	0	4.35

Table 16

Teacher Behavior Which Provides Solicited Opinion or Suggestion

	Practice (post)	Practice (final)	No Practice (post)	No Practice (final)
1	6.99	0	18.51	0
2	0	18.04	21.86	1.65
3	14.88	6.22	3.07	0
4	13.86	8.99	8.46	7.77
5	0	10.38	4.26	9.94
6	3.73	9.28	1.76	0
Mean	6.57	8.81	9.65	3.22
Std. Dev.	6.58	5.86	8.52	4.45

Figure 9

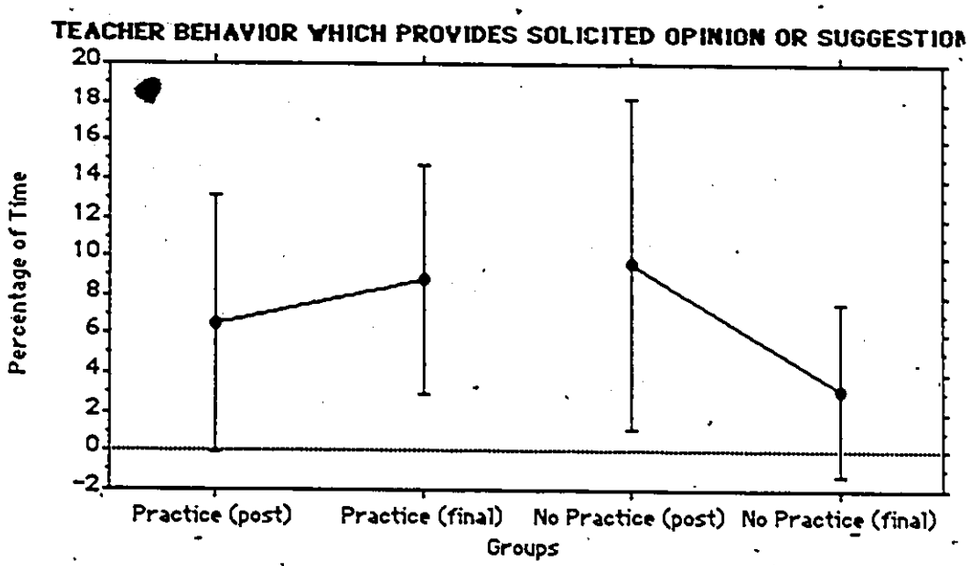

TEACHER BEHAVIOR WHICH PROVIDES SOLICITED OPINION OR SUGGESTION
Percentage of Time
20
18
16
14
12
10
8
6
4
2
0
-2
Practice (post)
Practice (final)
No Practice (post)
No Practice (final)
Groups

Table 17

Analysis of Variance Scores for Teacher Behavior Which Provides Solicited Opinion or Suggestion

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF. OF F
Main Effects	35.759	2	17.880	0.420	0.663
Practice	9.488	1	9.488	0.223	0.642
When	26.271	1	26.271	0.617	0.441
2-Way Interactions	112.710	1	112.710	2.646	0.119
Practice-When	112.710	1	112.710	2.646	0.119
Explained	148.469	3	49.490	1.162	0.349
Residual	852.038	20	42.602		
Total	1000.507	23	43.500		

Teacher behavior which provides solicited opinion or suggestion in post-course conferences where teachers worked with supervisors who were not able to practice their supervision skills ranged from 1.76% to a maximum of 21.86% of conference duration, with a mean of 9.65%. Final conferences for this group had a mean of 3.22% of conference duration ranging from 0.0% to 9.94%.

Within this group of teachers who worked with supervisors who were not able to practice their supervisory skills, 5 decreased in their amount of use of this variable while 1 teacher provided more solicited opinion or suggestion. A mean decrease of 6.43% of conference duration was, therefore, experienced between post-course and final conferences.

The analysis of variance indicated no statistically significant differences for either of the main effects (practice to no practice or post to final) or for the interaction between the two main effects.

Teacher Behavior Which Provides Unsolicited Information

Tables 18 and 19 and Figure 10 present data which show changes in teacher behavior which provides unsolicited information. The data from this variable in post-course conferences where the teachers worked with supervisors who were able to practice their supervision skills ranged from 0.0% to a maximum of 14.94% of conference duration, with a

Table 18

Teacher Behavior Which Provides Unsolicited Information

	Practice (post)	Practice (final)	No Practice (post)	No Practice (final)
1	.65	16.01	2.80	33.32
2	0	3.99	7.58	18.96
3	4.04	5.14	11.97	10.35
4	14.94	15.21	15.69	1.35
5	2.61	1.58	11.00	3.05
6	8.62	1.97	20.61	0
Mean	5.14	7.31	11.60	11.17
Std. Dev.	5.69	6.56	6.19	12.97

Figure 10

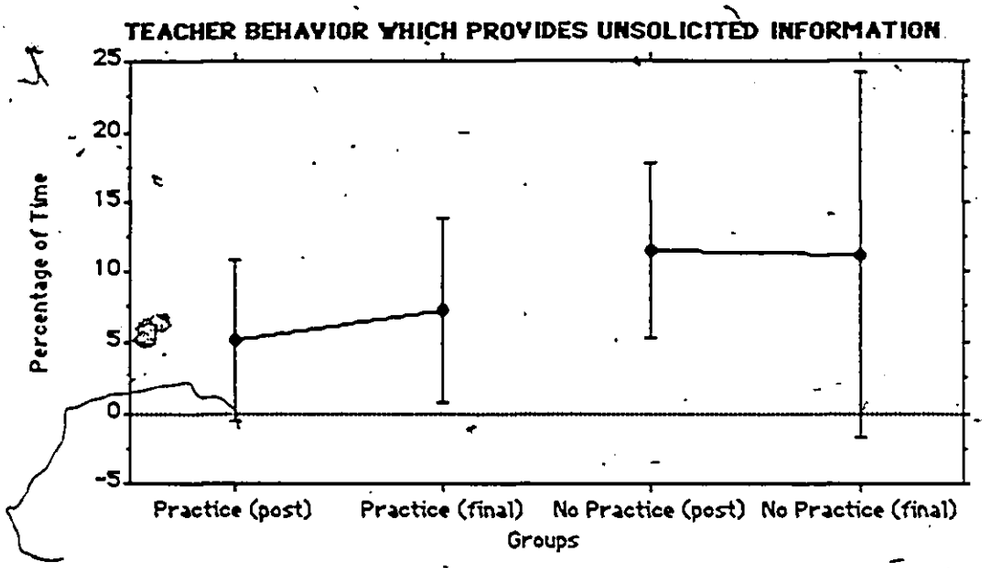

TEACHER BEHAVIOR WHICH PROVIDES UNSOLICITED INFORMATION
Percentage of Time
25
20
15
10
5
0
-5
Practice (post)
Practice (final)
No Practice (post)
No Practice (final)
Groups

Table 19

Analysis of Variance Scores for Teacher Behavior Which Provides Unsolicited Information

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF. OF F
Main Effects	164.278	2	82.139	1.166	0.332
Practice	159.754	1	159.754	2.268	0.148
When	4.524	1	4.524	0.064	0.803
2-Way Interactions	10.218	1	10.218	0.145	0.707
Practice-When	10.218	1	10.218	0.145	0.707
Explained	174.496	3	58.165	0.826	0.495
Residual	1408.640	20	70.432		
Total	1583.136	23	68.832		

mean of 5.14%. Final conferences for this group had a mean of 7.31% of conference duration ranging from 1.58% to 16.01%.

Within this group of teachers who worked with supervisors who were able to practice their supervisory skills, 3 decreased in their amount of use of this variable while the other 3 teachers used more providing unsolicited information. A mean increase of 2.17% of conference duration was, therefore, experienced between post-course and final conferences for this variable.

Teacher behavior which provides unsolicited information in post-course conferences where teachers worked with supervisors who were not able to practice their supervision skills ranged from 2.80% to a maximum of 20.61% of conference duration, with a mean of 11.60%. Final conferences for this group had a mean of 11.17% of conference duration ranging from 0.0% to 33.32%.

Within this group of teachers who worked with supervisors who were not able to practice their supervisory skills, 4 decreased in their amount of use of this variable while 2 teachers provided more unsolicited information. A mean decrease of 0.43% of conference duration was, therefore, experienced between post-course and final conferences.

The analysis of variance indicated no statistically significant differences for either of the main effects

(practice to no practice or post to final) or for the interaction between the two main effects.

Teacher Behavior Which Provides Unsolicited Opinion or Suggestion

Tables 20 and 21 and Figure 11 present data which show changes in teacher behavior which provides unsolicited opinion or suggestion. The data from this variable in post-course conferences where the teachers worked with supervisors who were able to practice their supervision skills ranged from 0.0% to a maximum of 13.96% of conference duration, with a mean of 5.20%. Final conferences for this group had a mean of 8.45% of conference duration ranging from 0.0% to 14.11%.

Within this group of teachers who worked with supervisors who were able to practice their supervisory skills 5 increased their use of this variable while 1 supervisor experienced no unsolicited opinion or suggestion in either of the conferences. A mean increase of 3.25% of conference duration was, therefore, experienced between post-course and final conferences for this variable.

Teacher behavior which provides unsolicited opinion or suggestion in post-course conferences where teachers worked with supervisors who were not able to practice their supervision skills ranged from 5.49% to a maximum of 15.58% of conference duration, with a mean of 10.82%. Final

Table 20

Teacher Behavior Which Provides Unsolicited Opinion or Suggestion

	Practice (post)	Practice (final)	No Practice (post)	No Practice (final)
1	1.96	9.83	12.49	5.86
2	0	0	15.58	10.43
3	5.62	13.30	5.49	13.63
4	3.38	8.70	13.58	0
5	13.96	14.11	6.27	14.16
6	6.30	4.79	11.56	.28
Mean	5.20	8.45	10.82	7.39
Std. Dev.	4.87	5.33	4.06	6.34

Figure 11

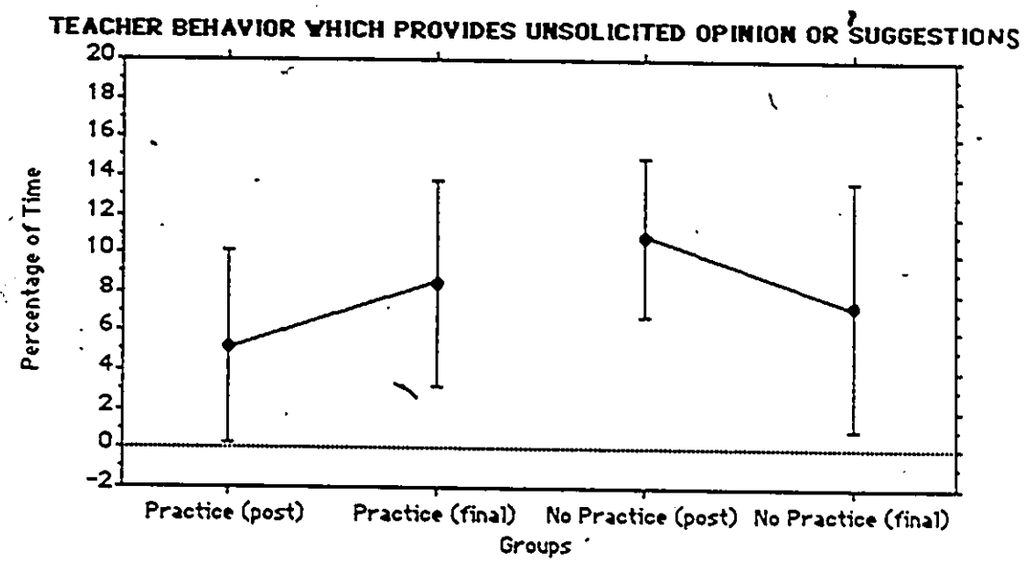

TEACHER BEHAVIOR WHICH PROVIDES UNSOLICITED OPINION OR SUGGESTIONS
Percentage of Time
20
18
16
14
12
10
8
6
4
2
0
-2
Practice (post)
Practice (final)
No Practice (post)
No Practice (final)
Groups

Table 21

Analysis of Variance Scores for Teacher Behavior Which Provides Unsolicited Opinion or Suggestion

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF. OF F
Main Effects	31.286	2	15.643	0.573	0.573
Practice	31.236	1	31.236	1.145	0.297
When	0.050	1	0.050	0.002	0.966
2-Way Interactions	67.067	1	67.067	2.459	0.133
Practice-When	67.067	1	67.067	2.459	0.133
Explained	98.354	3	32.785	1.202	0.335
Residual	545.537	20	27.277		
Total	643.890	23	27.995		

conferences for this group had a mean of 7.39% of conference duration ranging from 0.0% to 14.16%.

Within this group of teachers who worked with supervisors who were not able to practice their supervisory skills, 4 decreased in their amount of use of this variable while 2 teachers provided more unsolicited opinion. A mean decrease of 3.43% was, therefore, experienced between post-course and final conferences.

The analysis of variance indicated no statistically significant differences for either of the main effects (practice to no practice or post to final) or for the interaction between the two main effects.

Summary

Out of the 11 variables studied in the research question, 9 displayed changes between post-course and final conferences. These changes, however, were found to be not statistically significant. Two of the variables in this study were not analyzed due to insighificant use of the variables during the conferences.

The one variable which almost showed a statistically significant change was in supervisory behavior which provides unsolicited information. This difference was identified when the 12 tapes for supervisors who were able

to practice their supervisory skills were compared to the 12 tapes for supervisors who were unable to practice their skills. In this variable, the decrease in this behavior was significant at the 0.02 level of confidence.

Chapter V

Summary, Conclusions, Implications and Suggestions for Further Study

Summary

The purpose of this study was to determine the nature and extent of changes in supervisor conference behavior which could be attributed to the effect of practice following a graduate course in Instructional Supervision. In this study half of the supervisors were able to practice their supervisory skills following their training in Instructional Supervision while the remaining supervisors in the sample were not able to practice their supervisory skills.

Data were gathered from video-tapes of post-course and final conferences through the use of STACS and TICOR instruments. STACS is a 19-category behavior system which was developed to investigate behavior which occurs between supervisors and teachers in supervisory conferences. TICOR is a micro computer used for collecting and analyzing observed data through the use of hardware and software components which, in this case, were programmed to use STACS.

The data were gathered to answer the study question which asked if there was a statistically significant

difference in supervisory behavior during a time lapse after training within a group of supervisors who had a significant chance to practice their supervisor skills as compared to a group who had no chance to practice their skills. Eleven variables from STACS were chosen to document conference behavior change between the practice and the no practice groups. The variables are outlined in Chapter 3, page 46.

Analysis of variance was used to test for significant differences in conference behavior between the post-course and final conferences for the group of supervisors who were able to practice their skills, and the group of supervisors who were unable to practice their skills.

Conclusions and Implications

Changes in all of the 11 variables in this study were not statistically significant. It was concluded, therefore, that there was no statistical difference between the supervisors who were able to practice their skills and those supervisors who who were unable to practice their skills. This finding suggests that classroom teachers who are involved in peer supervision after training in Instructional Supervision can take part in peer supervision activities with a colleague on an intermittant basis confident that their supervision skill level attained in the course is maintained.

Two variables were not analyzed due to their small percentage of use by the supervisors and teachers in conferences in this study. The two variables were supervisor behavior which provides solicited opinion or suggestion and teacher behavior which solicits opinion or suggestion. This finding is not surprising since supervisors would not provide solicited opinion or suggestion unless the teacher in the conference solicited such opinion or suggestion.

A factor which was close to being statistically significant occurred in supervisor behavior which provides unsolicited information. Within this variable the 12 conferences in which supervisors were able to practice their skills, the group mean was 8.18% of conference duration while the 12 conferences in which supervisors were not able to practice their skills the obtained group mean was 3.73%. The mean difference was 4.45% of conference duration which is statistically significant at the 0.02 level of confidence. This finding was surprising since one of the objectives of the Instructional Supervision course at the University of Lethbridge is to decrease the use of unsolicited information on the part of the supervisors. This finding suggests that significant changes in supervision behavior may occur after the completion of Instructional Supervision training which at this point in time still needs to be determined.

The study findings implied minor changes between post-course and final conferences between the group of supervisors

who were able to practice their supervisory skills and the group that was not able to practice. Within the group where supervisors were able to practice their skills a mean increase in the use of the following variables occurred:

Supervisor behavior which solicits opinion or suggestion,

Supervisor behavior which provides solicited information,

Supervisor behavior which provides unsolicited opinion or suggestion,

Teacher behavior which provides solicited opinion or suggestion,

Teacher behavior which provides unsolicited information, and

Teacher behavior which provides unsolicited opinion or suggestion.

The findings suggest that the supervisors within this group are creating a conference environment which is encouraging teachers to become more involved in the conference. It is important to note that teachers within this group were able to provide unsolicited information and unsolicited opinion or suggestion during the conferences which suggests the needs of the teacher, rather than the needs of the supervisor were being discussed.

Within the group where supervisors are able to practice

their skills a mean decrease in the use of the following variables occurred:

Supervisor behavior which accepts or uses the other's ideas,

Supervisor behavior which provides unsolicited information, and

Teacher behavior which solicits information.

The decrease in supervisor behavior which accepts or uses the other's ideas is a potentially serious study implication since less use of this behavior, on the part of the supervisor, could discourage the teacher from becoming involved in the conference. A decrease in the use of this variable may suggest that supervisors begin to use less accepting or using the other's ideas after training is completed. A decrease in teacher behavior which solicits information may be due to the fact that the supervisors are providing the teachers with an adequate amount of information which answers their questions. As noted earlier, supervisor behavior which provides solicited information has increased for this group.

The study findings also implied minor changes between post-course and final conferences for the group which was made up of the supervisors who were not able to practice their supervisory skills. Within this group a mean increase in the use of the following variables occurred:

Supervisor behavior which provides solicited information,

Supervisor behavior which provides unsolicited information, and

Teacher behavior which solicits information.

These findings suggest that as the teachers increased their use of soliciting information the supervisors increased their amount of providing solicited information. This suggests a healthy trend towards the teacher being comfortable enough with the supervision process to seek out additional information. A potentially serious implication within these findings is the movement towards more unsolicited information on the part of the supervisor. An inherent danger in this behavior is the possible overload of information onto the teacher regarding information which may be of importance to the supervisor but not the teacher.

Within this group where supervisors were not able to practice their skills a mean decrease in the use of the following variables occurred:

Supervisor behavior which accepts or uses the other's ideas,

Supervisor behavior which solicits opinion or suggestion,

Supervisor behavior which provides unsolicited opinion or suggestion,

Teacher behavior which provides solicited opinion or suggestion,

Teacher behavior which provides unsolicited information, and

Teacher behavior which provides unsolicited opinion or suggestion.

A potentially serious study implication here is the decrease in use of 3 out of the 5 teacher variables in the study. If such a trend continues statistically significant differences may be found within these variables. It is interesting to note that supervisor behavior which accepts or uses the other's ideas and supervisor behavior which solicits opinion or suggestion also decreased in this group of conferences. The data for this group of conferences suggests that a movement towards supervisor control over the conference may be occurring.

Suggestions for Further Study

This was an initial exploratory investigation to study the effect of practice on supervisory skills following the completion of a course in Instructional Supervision. As such, it raised more questions than were answered, and many areas for research become evident and are suggested for future study.

1. This research should be repeated in order to test the trend identified in this study regarding the effect of practice or no practice on learned supervisory skills.

2. Supervision is situation, subject matter, and person specific. A study in which the supervisor and teacher work together over a time duration within the same subject area would be advisable. Analysis of variance with repeated measures could be used which would minimize the effect of change brought about by a supervisor working with different teachers in different subject areas.

3. In order to better control the effect of time on supervisory behavior an equal time lapse should be established for all supervisors. If this is not possible an equal number of supervisors should be chosen for each time lapse duration in order to include time as a study variable.

Bibliography

Alfonso, R.J., Firth, G.R., & Neville, R.F. (1981). Instructional supervision: A behavior system (2nd ed.). Boston, Mass.: Allyn and Bacon, Inc.

Bloom, B.S. (1968). Learning for mastery. Los Angeles, Cal.: Center for the Study of Evaluation of Instructional Programs, University of California.

Blumberg, A. (1974). Supervisors and teachers: A private cold war. Berkeley, Cal.: McCutchan.

Blumberg, A. and Amidon, E. (1965). Teachers' perceptions of supervisor-teacher interaction. Administrator's Notebook, 14 (1), 1-8.

Bodine, R. (1973). Teachers' self-assessment. Berkeley, Cal.: McCutchan.

Bruner, J. (1960). The process of education. New York: Vintage Books.

Butt, R. (1984). Curriculum Implementation, Classroom Change and Professional Development: The Challenge for Supervision. Paper presented at a symposium at the Annual Meeting of the Canadian Society for the Study of Education. Guelph, Ontario.

Butt, R. and Olson, J. (1983). Dreams and realities: Approaching change through critical awareness. In Curriculum Canada IV. Edited by R. Butt, J. Olson and J. Daignault. Vancouver: Centre for the Study of Curriculum and Instruction.

Button, H.W. (1961). A history of supervision in the public schools, 1870-1950. Pullman, Wash.: Washington State University.

Campbell, D.T. and Stanley, J.C. (1963). Experimental and quasi-experimental designs for research on teaching. In Handbook of research on teaching. Edited by N.L. Gage. Chicago: Rand McNally.

Cogan, M.L. (1973). Clinical supervision. Boston: Houghton-Mifflin.

Cogan, M.L. (1975). Current issues in the education of teachers. Teacher education: The 74th yearbook of the study of education. Part II, edited by R. Ryan. Chicago: University of Chicago Press.

Costa, A. and Garmston, R. (1985). Supervision for intelligent teaching. Educational Leadership, 2, 70-80.

Elliot, J. (1976). Development hypotheses about classrooms from teachers' practical constructs. Interchange, 7 (2), 2-27.

Garman, N.B. (1982). The clinical approach to supervision. Chapter 3 in Supervision of teaching, the 1982 yearbook of the Association for Supervision and Curriculum Development. Edited by Thomas J. Sergiovanni. Alexandria, Va.: ASCD.

Glickman, C.D. (1985). Supervision of instruction - A developmental approach. Newton, Mass.: Allyn and Bacon, Inc.

Goldhammer, R. (1969). Clinical supervision - special methods for the supervision of teachers. New York: Holt, Rinehart and Winston.

Goldsberry, L. (1981). College consultation: teacher collaboration toward performance improvement. Paper presented at AREA, Los Angeles.

Good, T. and Brophy, J. (1978). Looking in classrooms. New York: Harper and Row.

Hruska, J.L. (1961). A student teacher's view on supervision. National Business Education Quarterly, 5, 47-52.

Hymes, D. (1979). Ethnographic monitoring. National multilingual multicultural materials. Development Centre, California State Polytechnic University, Pomona, Los Angeles.

Isaac, S. (1971). Handbook in research and evaluation. San Diego, Cal.: Knapp.

Joyce, B. and Showers, B. (1982). The coaching of teaching. Educational Leadership, 10, 4-10.

Keir, A. (1981). The affective behavior of supervisors in teacher-supervisor conferences. Masters Thesis, University of Calgary.

Lovell, J.T. and Wiles, K. (1983). Supervision for better schools (5th ed.). Englewood Cliffs, New Jersey: Prentice-Hall.

Lucio, W.H. and McNeil, J.D. (1962). Supervision: A synthesis of thought and action. University of California, Los Angeles: McGraw-Hill.

Medwid, J. (1980). A participant observation study: A model for instructional supervision. Unpublished doctoral dissertation, Boston University.

Mosher, R.L. and Purpel, D.E. (1972). Supervision: the reluctant profession. Boston: Houghton-Mifflin.

O'Toole, W. (1979). Effects of practice and some methodological considerations on counseling interviewing skills. Journal of Counseling Psychology, 26 (5), 419-426.

Ober, R.L. (1970). The reciprocal category system. Journal of Research and Development in Education, 4 (1), Fall, 34-51.

Ober, R.L.; Bentley, E.L., & Miller, E. (1971). Systematic observation of teaching. Englewood Cliffs, New Jersey: Prentice-Hall.

Piaget, J. (1953). The origins of intelligence in children. New York: International Universities Press.

Reilkoff, T. (1981). Advantages of supportive supervision over clinical supervision of teachers. National Association of Secondary School Principals Bulletin, 11, 28-34.

Scott, W.A. (1955). Reliability of content analysis: The case of nominal coding. The Public Opinion Quarterly, 19 (3), 321-325.

Smyth, J. and Martin, J. (1982). Clinical supervision: evidence of a viable strategy for teacher development. The Australian Administrator, 3 (5), 1-4.

Smyth, J.W. (1984). Observation - towards a critical consciousness in the instructional supervision of experienced teachers. Curriculum Inquiry, 14 (4), 425-436.

Thorlacius, J.M. (1978). The supervisor-teacher analogous categories system (STACS): A system for analyzing supervisor-teacher interaction in supervisory conferences. Challenge, 17 (1), 77-90.

Thorlacius, J.M. (1980). Changes in supervisory behavior resulting from training in clinical supervision. Chapter 2 in Evaluation of the extended practicum at the University of Lethbridge. Alberta: University of Lethbridge.

Trew, L. (1979). The effects of laboratory training on the teacher-intern interpersonal relationship. Masters Thesis, University of Regina.

Watson, D.L. & Thorp, R.G. (1972). Self directed behavior: Self modification for personal adjustment. Monterey, Cal.: Brooks/Cole.

Weller, R.H. (1971). Verbal communication in instructional supervision. New York: Teachers College Press, Columbia University.

Whitehead, R. (1980). Practicum students' perceptions of teacher associates' supervisory behaviors. Lethbridge, Alberta: University of Lethbridge. RIE Ed269 856.

APPENDIX A

Supervisor-Teacher Analogous Categories System (STACS)

Supervisor-Teacher Analogous
Categories System (STACS)

Supervisor Behavior	Description of Behavior	Teacher Behavior
1	Supportive behavior. All behavior which tends to open up and build a warm, collegial climate between supervisor and teacher. Behavior that releases tension is in this category. Praise and encouragement is included here as is behavior which conveys a recognition and acceptance of the feelings of the other person.	11
2	Accepts or uses the other's ideas. All behavior which clarifies, builds on or develops ideas or suggestions of the other. Teacher behavior which shows acceptance of supervisor talk, and vice versa, is included. Paraphrasing of the other's talk is also included.	12
3	Solicits information. Behavior that seeks clarification about a procedure or situation relative to content or physical setting. Questions which seek clarification of what the other is asking would also be included. Information sought is factual in nature, known to the one but not the other. It is not concerned with opinion or value judgements.	13
4	Solicits opinion or suggestions. Behavior which is intended to have the other person analyze or evaluate something that has occurred or may occur.	14

Verbal permission to quote granted by the author, J. M. Thorlacius, University of Lethbridge (1978).

STACS (continued)

Supervisor Behavior	Description of Behavior	Teacher Behavior
	It includes supervisor behavior which asks the teacher to think about alternative strategies or methods without necessarily implying criticism of what was done or is being planned. The intention here should be to open up new vistas and stimulate creativity on the part of the teacher. This category would also include genuine attempts on the part of the teacher to seek suggestions or opinions, provided that this is not done merely to comply in a dependent manner to win approval of the supervisor. (Compliant behavior on the part of the teacher is coded as defensive behavior under Category 19, as is rationalization.)	
5	Provides solicited information. This behavior is the opposite of Category 3/13, in that information is provided rather than solicited. It can be given either as a result of prior agreement to gather the information or as a response to a direct request for the information by the other person. Information given is factual and objective. Behavior description is used. The information is intended as feedback or is provided for orientation or for summary. Value judgements should not be included here.	15
6	Provides solicited opinion or suggestions. As in Category 5/15, opinions or suggestions are provided as a result of a direct request on the part of the other person. This is primarily task-oriented rather than process-oriented behavior. Value judgements would be included here. Restricted teacher response to a supervisor question, or vice versa, would be coded in this category as a 16 or 6 depending on who was was giving the opinion.	16

STACS (continued)

Supervisor Behavior	Description of Behavior	Teacher Behavior
7	Provides unsolicited information. The difference between this category and Category 5/15 is that the information is provided as a result of a unilateral decision to do so on the part of the person providing the information. Typically there would be no evidence of a request for the information on the part of the other person either in a pre-observation conference or earlier in the post-observation conference.	17
8	Provides unsolicited opinion or suggestions. This is the opposite of Category 6/16 in that the opinions or suggestions have not been solicited. Supervisor opinion or suggestion when volunteered should be coded here (8) as should unrestricted teacher comment (18) whether initiated by the teacher or in response to an open-ended supervisor question. Value judgements will be in included here, as was the case in Category 6/16.	18
9	Non-supportive behavior. This is the opposite of Category 1/11. It includes all behavior which tends to "cool" or formalize the climate between supervisor and teacher. Negative value judgements are included here as are questions which imply crass criticism of what was done or said by the other. Any behavior which tends to create undue tension is included (e.g. exercising authority, brashly rejecting or criticizing the other's judgement or opinion, or any form of aggressive or defensive reaction to the other person). Teacher behavior which demonstrates compliance or rationalization is defined as defensive behavior (19). Supervisor behavior which shows tactless non-acceptance of the teacher's ideas and/or behavior which tends to push the supervisor's ideas without heeding teacher concerns would be coded as a 9.	19

STACS (continued)

Supervisor Behavior	Description of Behavior	Teacher Behavior
10	Silence or confusion. This category is used for pauses, periods of silence, or when both supervisor and teacher are talking at the same time so that it is impossible to categorize the behavior. If silence seems to be the result of behavior which tends to produce tension or defensiveness, then Category 9 or 19 should be used, depending at whom the original behavior was directed.	10