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THE USE OF MICROTEACHING TO AID PRESERVICE PHYSICAL EDUCATORS IN THE ACQUISITION OF A VARIETY OF TEACHING STRATEGIES AS IDENTIFIED BY THE AMOUNT AND KIND OF STUDENT DECISIONS

by

Martha Sue Taylor

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Approved by

Dissertation Adviser

APPROVAL PAGE

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

Dissertation Adviser Rosemary McGee

Committee Members Kate R Barrett

Margaret A Mandy

E Doris McKinney

Lois V. Edinger

May 13, 1977
Date of Acceptance by Committee

TAYLOR, MARTHA SUE. The Use of Microteaching to Aid Preservice Physical Educators in the Acquisition of a Variety of Teaching Strategies as Identified by the Amount and Kind of Student Decisions. (1977) Directed by: Dr. Rosemary McGee. Pp. 211

It was the purpose of this study to investigate the use of microteaching in the preservice preparation of physical educators. More specifically, the study dealt with the use of microteaching in the acquisition of knowledge and skills relative to the use of varied teaching strategies which directly relate to the amount and kind of student decision making. The subjects were asked to employ different teaching strategies in three microlessons in order for varying amounts of procedural and performance decisions to result.

An incidence chart was designed to identify the types of student decisions. It had nine categories arranged under two broad headings: procedure decisions, and performance decisions. The chart further delineated decisions as either teacher-made or student-made. It was field tested over a year's time in two courses in methods of teaching. The supervisor was trained to be objective in the use of this chart by working with a training judge and a series of training tapes in 13 sessions for a total of 21 hours. The acceptable standard established for objectivity of the supervisor was 80% using the Bijou Reliability Index.

Three model tapes were prepared and then validated by a panel of judges to verify that each tape demonstrated the designated teaching strategies required for each lesson. The Reliability Index was used to obtain a percent of agreement score for interjudge agreement on each tape. An agreement score of 70% was chosen as the acceptable standard to reflect this validity. Written descriptors were prepared to accompany these model tapes.

The five subjects were requested to choose a content area to be used throughout the study. Each then taught a base lesson which served as a reference point for later discussions as well as an introduction to the microteaching format. Each subject then followed the sequence of plan, teach, critique, and if necessary, replan, reteach and recritique. This sequence was followed by each subject for each of the three lessons. During the critique sessions, the subject and the supervisor independently marked an incidence chart as they viewed a video tape of the lesson just completed.

The supervisor's rating on the incidence chart for each of the three lessons indicated that the subjects could, in the majority of the lessons, control their teaching behavior so that the requested amount and kind of decision making was evident.

A comparison of the supervisor's incidence chart rating with the subject's incidence chart rating of the same tape was used to determine the subject's ability to

identify and distinguish between the types of decision problems presented in each lesson. The Reliability Index was used to establish a percent of agreement for each lesson. The results indicated that the subjects could, in general, distinguish between types of decision problems.

In addition, material gathered throughout the study was analyzed in relation to the feasibility of using microteaching as a means of developing a variety of teaching strategies. It was concluded that microteaching appears to be a feasible tool to aid in the acquisition of knowledges and skills relative to varied teaching strategies.

ACKNOWLEDGEMENTS

No experience of this kind can ever be completed without the assistance and support of many friends and colleagues. To all of these I offer grateful acknowledgement.

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Ann Hudgens and Joanne Lunt served as teachers for the model lessons. I appreciate their willingness and ability to work to control their teaching behavior. The editing of these model tapes was made possible, and enjoyable, through the expertise and help of Mr. Cuyler Fields of Winthrop College.

Dr. Joanne Lunt, who acted as the training judge, gave much of her time and of herself. Her task was both difficult and long, but she never failed to make me feel excited over what we accomplished with each session. Her patience and wisdom in those times when she had to additionally serve as a sounding board for growing ideas was of invaluable assistance.

Helen Clement, Lynn Griffin, Dinah Hamrick, Sue Owens, and Debra Smith served as the subjects in this study. Their willingness to give those extra hours, and their excitement when the lesson worked, added a very special feeling to what was being done. Gigi Farrow gave special assistance in serving as assistant during the entire taping sequence.

Special appreciation is given to Ann Hudgens, and to my mother, Elizabeth Taylor. Both were generous with their never-failing encouragement and support.

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CHAPTER I

INTRODUCTION

For many years the teaching strategies customarily utilized by most physical educators closely resembled the training tactics of a drill sergeant. Physical educators prided themselves on developing uniformity and discipline within their classes. This was felt to be an important and valuable part of the physical education experience. Writing in 1864, Dio Lewis, an early physical educator, advocated the painting of foot patterns on the gymnasium floor. He told the instructors that they would then "have to make no explanation, either in regard to the position of each pupil on the floor, or the attitude of the feet, and you are sure to avoid all accidents" (1972, p. 42).

Although there were many who decried this emphasis on uniformity and absolute teacher control, it remained largely unchanged until the late 1950's when the European form of "Movement Education" started beating upon the shores of America and the consciousness of some physical educators. Since that time, the combined forces of movement education, open classrooms, and humanistic education have caused many

changes in the teaching strategies of American physical educators.

Most physical educators were touched in one way or another by these forces, but the greatest changes were most immediately apparent in the teaching strategies of elementary physical educators. Training programs for elementary physical educators were changed so that more emphasis was placed on methodology. Prior to this time methodology had been focused primarily on matters of organization and discipline. The emphasis was now shifted to the individual child and various teaching strategies that could be used to help each student learn the content of physical education.

Methodology became a subject of heated debate at conventions and gatherings of physical educators. Although there were those who based their methodological discussions on personal or professional philosophies of how children learn and the purposes of education, much of the debate stemmed from problems related to semantics. Despite this confusion over terminology and overlapping definitions, an increasing number of physical educators became troubled over the "how" they were to teach, as well as the usual concerns of "what" was to be taught. Most of these discussions continued to revolve primarily around the elementary level. Although increasing numbers of secondary school educators were becoming concerned over their limited

repertoire of teaching strategies, they had little guidance to help them find alternative ways.

In 1966 Muska Mosston published a text which was one of the first attempts by a physical educator to fully analyze teaching strategies for all levels of physical education. He underlined the theory that "deliberate teaching is good teaching" (1966, p. xiii). His book indicated the development of a Spectrum of Styles which included a rationale and a way of teaching by each style based on cognition. The way was now open for physical educators of all levels to truly examine their strategies of content implementation.

As these methodological concerns were sifting through time and knowledge, the process of training teachers to teach was likewise undergoing changes. The need was recognized for frequent "field" experiences in the pre-service program. The axiom that a student "learns by doing," was at last being applied to the preparation of teachers. Due to the problems inherent in arranging a schedule of field experiences, various adaptations were being developed. These included such experiences as simulated teaching, role playing, minicourses, practicums and microteaching. One of the most important of these methods is microteaching.

Since its inception in the early 1960's, microteaching has become an established teacher-training procedure in

many colleges, universities, and school districts. It was originally seen as a promising concept for use in pre-service teacher training. During the last decade the merit of the idea has also been positively demonstrated within the context of inservice training, Peace Corps training, educational research, and is even finding use as a partial device for teacher placement.

Microteaching has been proclaimed by many educators as a useful technique and tool to help people become better teachers (Allen, 1972; Borg, 1969; Graham, 1975; Meir, 1968; Perlberg, 1972; Silberman, 1970; and Stone, 1968). Stones and Morris (1972) stated that "microteaching is one of the most important developments in the field of teaching practice" (1972, p. 79). Jensen (1974, p. 3) reiterated this belief by stating "microteaching is perhaps one of the most versatile instructional tools available to the practicing educator whether he is educating children, teachers, pilots, skiers or salesmen."

Allen (1972) described microteaching as a teaching situation which is scaled down in terms of time, numbers of students, and complexities of the teaching act, thus allowing the teacher to focus on selected aspects of teaching. The addition of immediate feedback from video- or audiotape, the teacher's self-perception, or peer, and/or supervisor's evaluation can make the experience a very positive learning tool. The teach-critique-reteach and

critique-again cycle employs cybernetic principles of immediate feedback and immediate opportunity to incorporate that feedback into the teaching act (Cooper, 1967)

Meir (1968) emphasized that the term, micro, denotes not only the reduction in lesson and class size, but also "adds the scientific connotation of precision by honing down the edge of observation to a fine-cutting process which enables an objective quantitative and qualitative analysis of the recorded behavior" (1968, p. 146). Several other writers have attested to the value and need of being able to analyze teaching in a behavioral sense (Berliner, 1969; Flanders, 1963; Gage, 1968; Jensen, 1972; Perlberg, 1972; and Smith, 1967).

Berliner (1969) suggested that this ability to analyze and describe teaching behaviorally enables practitioners to approach both the art and science of teaching.

> There appears to be many clearly describable teaching skills which cut across subject matter areas, and which can be developed through training so that almost all teachers can master them and include them in their repertoire (1969, p. 251).

Microteaching has been used in the teacher preparation process in most subject matter areas. Writers in such diverse educational fields as music (Kuhn, 1968), industrial education (Allen, W. C., 1972; Hoerner, 1969), elementary school science (Ashlock, 1968), business education (Cook & Brown, 1968), and foreign language (Wolfe,

1971) have attested to its value. Physical educators have also used the microteaching technique and have found it to have merit in the preparation of teachers (Carlson, 1974; Graham, 1973; Jordan, F. R., 1971; Schaefer, 1967; and Zalokar, 1970).

In most of the above-mentioned writings, the microteaching experience was designed to emphasize one or more of the component skills of teaching identified by the first researchers of microteaching. These technical skills of teaching, such as stimulus variation, set induction, closure, silence and nonverbal cues, and reinforcement of student participation were considered to be general teaching skills that could "be applied at many levels, for teaching many different subjects" (Allen & Ryan, 1969, p. 15). Although these skills of teaching have proven to be of value in the teaching act, there are writers who think that there are other skills which may be identified and practiced (Berliner, 1969; Cook & Brown, 1968; Gregory, 1970; Manis, 1973; Olivero, 1970, and Pereira & Guelcher, 1970).

In discussing the isolation of specific skills, Berliner (1969, p. 43) pointed out that:

> Less general teaching skills pertaining only to instruction in mathematics or English or science can also be behaviorally described. Certainly, specific model performance demonstrating skills in micro environments can be developed for the teaching of quadratic equations or the teaching of Ohm's law.

Writing in Quest concerning the values of microteaching in physical education teacher education, T. C.

Jordon (1971) emphasized that although the component skills identified at Stanford seem applicable to physical education, they should not be accepted as the only skills. Without being specific, Jordan states that "a number of these skills need special scrutiny with respect to physical education, and perhaps additional ones need to be considered" (1971, p. 19).

The 1974 AAHPER guidelines for Professional Preparation in Dance, Physical Education, Recreation Education, Safety Education, and School Health Education emphasized the need for preservice experiences which allow the student to develop the competencies which the organization had isolated. The original draft (1973) of this report listed examples of experiences that would help in the development of these competencies; microteaching was listed several times.

Several states have completed a listing of the competencies that they deem necessary for successful experience as a physical educator. A comparison of the lists of recommended competencies indicated some differences, but a large number of similar competencies was identified by each state. One of the competencies which was included by each state, as well as the AAHPER guidelines, dealt with the ability of the teacher to select the appropriate strategies and tactics of teaching, and to recognize teacher behavior as it influences student responses.

Flanders (1970) expressed the idea that the behavior of the teacher is the single, most controllable and potent factor that alters and influences learning opportunities in the classroom. Moreover, Joyce and Hodges (1966) argued that "one of the primary goals of teacher education is to enlarge the capacity of the teacher to control his teaching behavior" (1966, p. 409).

Many educational leaders acknowledged the importance of the development of a variety of teaching behaviors or strategies. Flanders (1964, p. 161) suggested that it is the less successful teachers who "appear to be restricted to a limited number of roles, and are unable to vary their style from one situation to another." Joyce (1966) supported this view:

> A teacher who can purposefully exhibit a wide range of teaching styles is potentially able to accomplish more than a teacher whose repertoire is relatively limited. It becomes important then to develop a program for helping teachers enlarge their repertoire of teaching behaviors (1966, p. 409).

Mosston (1966, 1973) has presented a spectrum of teaching styles for physical education. This spectrum resulted in a series of identifiable sets of teacher behavior which are labeled as specific "styles of teaching." The resulting seven styles have been studied and practiced in a variety of ways, including the use of microteaching.

Other physical educators who have studied teaching behavior, or styles of teaching have isolated and labeled

additional or conflicting strategies (Murray, 1975; Schurr, 1975; and Tillotson, 1968, 1969). It is this multi-labeling and diverse approach which has caused many pre-service physical educators to become confused and overly concerned about the name of a specific teaching behavior rather than its results. This concern over names and labels tends to create confusion about the real purpose for studying a variety of strategies. It almost develops a feeling of, "Check me off--I've done that one."

In order to systematically study, and thereby increase the available options in teaching strategies, there must be some unifying theme or "hinge" around which all the strategies relate. This theme must be universal enough to fit varied subject areas, and yet be small enough to be observable and controllable. Many theorists utilize decision making on the part of the student as an indication of the type of strategy being portrayed (Barrett, in press; Bilbrough, & Jones, 1963; Mosston, 1966, 1973; Murray, 1975; and Schurr, 1975). It is this utilization of decision making, both in amount and kind, that is at the center of this study.

Mosston (1966) argued that teaching behavior is a chain of decision making, and that "many, if not all, of a students' decisions are closely interrelated with his teacher's decisions" (1966, p. 3). Barrett supported this view by describing teaching as "an interactive process in

which both the teacher and child are potential decision-makers in the creation of the learning environment" (in press, p. 3). It may be concluded that planned adjustments in the amount and kind of decision-making opportunities in a lesson would require control over teacher behavior. It, therefore, seems appropriate to devise microteaching units specifically designed to enable the preservice physical educator to enlarge, and/or control, teaching behavior or teaching strategies through planned adjustments in the amount and kind of student decisions.

Statement of the Problem

The purpose of this study was to utilize microteaching as an aid to preservice physical educators in the acquisition of knowledges and skills relative to the use of varied teaching strategies which directly relate to the amount and kind of student decision making. The following questions were asked.

1. Were the microteachers able to present each of the lessons as directed?

   Lesson 1--Were teaching strategies utilized which allowed the learners to make the majority of the procedural decisions in the lesson and to make few if any of the performance decisions?

   Lesson 2--Were teaching strategies utilized which allowed the learners to make the majority of the performance decisions and to make few if any of

the procedural decisions?

Lesson 3--Were teaching strategies utilized which allowed the students to make approximately half of the procedural and the performance decisions needed in the lesson?

These questions are graphically shown in Figure 1.

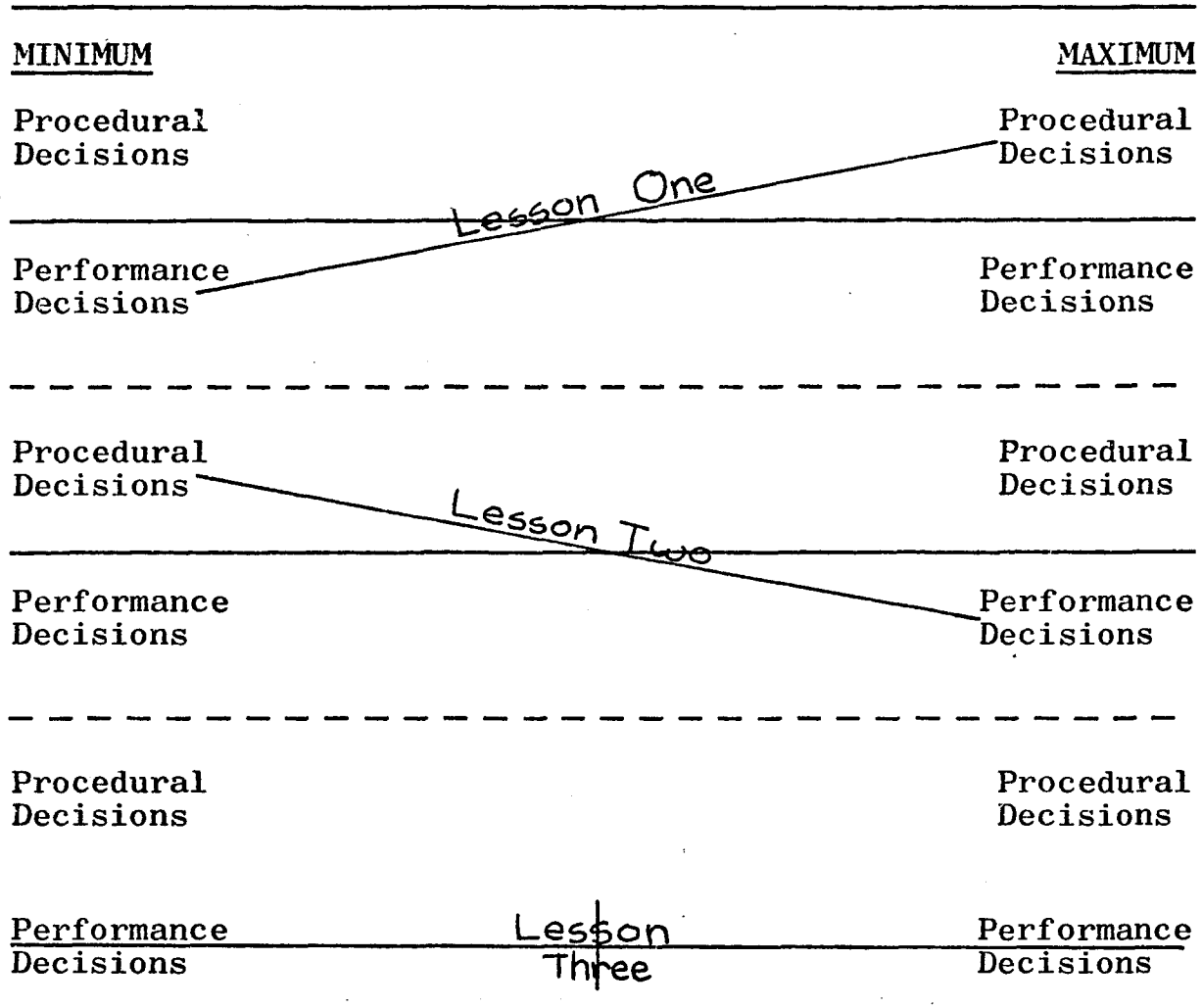

Figure 1. The amount and kind of student decision making required in each lesson.

2. Were the microteachers able to distinguish between the types of decision problems presented in each of the lessons?

Definition of Terms

Terms used in a special way in this study were defined as follows:

Microteaching is a teaching situation which is scaled down in terms of time, numbers of students and complexities of the teaching act. This "scaling down" enables the teacher to concentrate on a specific skill of teaching. The teach-critique (with the use of augmented feedback)-reteach-critique-again cycle is an important part of the microteaching experience.

Decision making is the "process in which a person selects from two or more possible choices" (Gelatt, 1973, p. 2). The resulting, overt response at the completion of the decision process will be considered indicative that a decision was made.

Decision problem is a problem which requires some action to be taken and offers more than one course of action, alternative or possibility which must be considered. Only those decision problems that result in overt response will be considered.

Student decisions are those decisions which are "given" to the student to make. Two classifications of student decisions will be utilized.

(a) Performance decisions are those decisions that are relative to how an activity or movement is to be performed.

(b) Procedural decisions are those decisions that are relative to organization or procedure. These decisions include location or geography decisions, (where to stand) timing decisions, (when to begin or end an activity) and activity decisions, (whether to work on the bar or the beam).

Student decisions may be made at various periods in the teaching encounter. For the needs of this study, the periods of decision making are identified as preactive or interactive. Preactive decisions are made by the student during the period prior to the actual teaching encounter. These are basically motivational decisions relative to expenditure of effort (all-out effort or "just enough to get by"). They are largely unconscious and can be greatly altered by interactive actions on the part of the teacher or other students. This study is concerned only with the interactive decisions, which are those decisions made by the student throughout the actual teaching encounter. These decisions are greatly influenced by both the preactive decisions and the motivational constructs of the moment.

Teaching strategy is the generalized plan for teaching which includes the interaction of an individual's teaching style with the chosen method or methods in terms of the goals of instruction (Strasser, 1967, p. 63). This study does not attempt to label or identify by name any teaching strategy. The teaching strategies are identified only by the resulting changes in student decision making.

Assumptions

It was assumed that microteaching is a valid means of acquiring proficiency in selected skills of teaching. It was also assumed that teaching strategies can influence the amount and kind of decision-making tasks on the part of the students, and that teaching strategies can therefore be studied by examining the amount and kinds of decision problems presented to students. In addition, it was assumed that any physical education participatory lesson can be divided into two broad areas: preactive and interactive, and that although both are involved in any teaching strategy, it is possible to study teaching strategy by concentrating on only the interactive stage.

It was assumed that all decision problems presented by the teacher during the interactive stage can be identified as either procedural, (dealing with organization, time, or geography factors) or performance (dealing with the execution of the activity or movement). A final assumption was

that decision making can be observed and recorded as a result of student response.

Scope

The study was limited to the use of three strategies which focused on both ends and the midpoint of an imaginary methodological continuum of teaching as it relates to decision making, and to subjects who were senior physical education majors at Winthrop College. The subjects doing the teaching did not represent subsamples large enough to allow generalizations to be made of all senior physical education majors.

It was recognized that decision making is a complex action involving many trial and error processes on the part of the decision maker, and that these actions generally take place within the decision maker and are not easily recognizable by an observer. This study therefore was limited to the observation and recording of only the overt results of the decision-making process and attempted no differentiation between difficulties of decision making by various individuals, nor difficulties found within a series of decision problems. In addition, this study limited itself to only the interactive stage of teaching, and to those actions that are recordable on video tape.

Finally, this study assumed no value judgement in either the amount or the kind of decisions made by students.

Decision making was utilized merely as a way to study teaching strategies.

Significance of the Study

Microteaching has become an established teacher-training procedure. It enables the prospective teacher to work on the selected skills of teaching in an environment that is reassuring yet stimulating. The size of the class, the length of the encounter, the concentration on a specific skill, and freedom to choose content are all comforting assurances to the neophyte. The challenge of the critique and reteach cycle, as well as the use of the media for evaluation are unique factors which provide valuable experiences for the teacher in training.

Although microteaching has been used in a wide variety of subject areas in the development of previously identified skills of teaching, little research has been done identifying other possible skills. Physical education is a unique subject area within the curriculum, and often demands teaching skills that are unique to its movement orientation.

The ability of a teacher to successfully utilize a variety of teaching strategies has been amply supported by educators. Attempts to identify and/or create teaching methods and strategies have resulted in a confusing assemblage of terms which often contradict each other. There has been little success in organizing these teaching behaviors

so that they may be simply examined and practiced by the novice teacher.

One relatively common thought that seems to permeate most discussions and identifications of teaching strategies, is the amount and kinds of decision-making opportunities made available to the learner with each strategy. There is usually no value judgement attached to a greater or lesser amount or kind of decision making, but it has been used as a tool for the identification of teaching strategies.

The need for proficiency in the understanding and use of a variety of teaching strategies has been reiterated by those who have completed a listing of competencies recommended for physical education teachers, but again there is no uniform recommendation as to how these strategies can be isolated or studied. These competency-based programs reflect the trend toward individualization in teacher preparation, and the use of microteaching units, as a module or a part of a module, is a frequent recommendation.

CHAPTER II

REVIEW OF LITERATURE

The purpose of this study was to investigate the use of microteaching in the preservice preparation of physical educators. More specifically, the study dealt with the use of microteaching in the acquisition of knowledges and skills relative to the development of varied teaching strategies which directly relate to the amount and kind of student decision making. Although little has been written concerning the use of microteaching in this specific area, the review of related literature yielded some interesting observations.

The review of literature is divided into two sections: (1) material relating to microteaching, and (2) material relating to teaching strategies and to decision making.

Material Relating to Microteaching

Since it was not the purpose of this study to prove the value, or test the variables of microteaching, only an overview of the research in this area is included.

Microteaching was conceived and first practiced in the early 1960's as a means of preservice teacher education.

During the ensuing decade the merits of microteaching have been investigated and generally accepted by concerned educators. Studies attesting to positive values of microteaching are numerous and varied.

Studies such as those by Bush (1967); Davis (1970); Davis and Smoot (1970); Fortune, Cooper and Allen (1965); Kallenbach and Gall (1969); Kocyloweski (1971); and Nagel (1971) attest to the belief that microteaching is an effective innovation in teacher preparation. These studies also concluded that those teachers who were trained through the utilization of microteaching often performed at a higher level of teacher competence than the traditionally prepared teachers. Several of these studies pointed out that the value of achieving equal or superior results in a much shorter time than by the more traditional methods, is one of the strongest arguments favoring the use of microteaching.

Some studies dealt with a specific area of improvement. In 1968, Barron found the microteaching format resulted in positive and significant growth in openness as measured by the Teacher Problem Q-Sort. Schutte (1971) measured results by the use of Flander's Interaction Analysis and found the microteaching-trained teachers to be more indirect in their verbal behaviors. Schuck (1971) and Zalokar (1971) used microteaching as a positive means of improving the teacher's ability to utilize Set Induction.

In addition, Allen, Cooper, and Poliakoff (1972) found positive results in Closure after training with micro-teaching.

Microteaching has been effectively demonstrated to be of value in many curricular areas. These include social studies (Limbacher, 1971; Randall, 1972), physical education (Carlson, 1974; Graham, 1973; Jordan, F. R., 1971; Zalokar, 1971), industrial education (Allen, 1973), business (Brown, 1969), foreign languages (Barron, 1968), home economics (Bell, 1968), and science (Goldthwaite, 1968). Others (Aubertine, 1967; Douglass, 1971) have demonstrated the effectiveness of microteaching as a tool to improve supervisory skills, and Allen (1972) found microteaching to be more effective than the traditional strategy for improving performance of a manipulative demonstration.

Several of the studies involving microteaching dealt primarily with the more affective skills of the teacher. Goodkind found that students who had practiced with micro-teaching:

> . . . displayed a greater awareness and use of specific teaching acts and techniques, particularly of the non-verbal type; greater insight into the activity and interrelationships of the children within the classroom; and a greater awareness of the problems of structuring and pacing in their educational program (1968, p. 11).

Student reaction to microteaching has generally been positive. Chang (1970) tested the reaction of student teachers to microteaching and discovered an overwhelming

majority had a positive feeling toward this experience. Bush (1967) found the trainees' acceptance of microteaching was high, and Davis (1970) ascertained that the participating students felt that the advantages of microteaching outweighed any disadvantages of time and expense. Sixty percent of the interns in a study conducted by Fortune, Cooper, and Allen (1967) acclaimed the microteaching experience to be very valuable. Webb (1968) found that 96% of the trainees in a microteaching program felt they had benefited from the microteaching experience, and more recently, this feeling was reinforced in a study by Brown and Armstrong (1975) who related positive feelings from 90% of their microteaching subjects.

An incidental finding of many microteaching studies was that ratings of teaching performance, based on a brief video-taped lesson, were generally good predictors of later ratings of teaching effectiveness (Allen & Clark, 1967; Cooper & Allen, 1971; Kallenbach & Gall, 1969; and Nagel, 1971). Kallenbach and Gall use this discovery in their support of microteaching.

> The fact that performance in a microteaching situation predicts performance in the classroom situation indicates that while microteaching "scales down" the classroom situation, it does not distort it (1969, p. 141).

Jensen and Young (1972) administered the Teacher Performance Evaluation Scale to a control group and to a microteaching group of trainees. The results indicated that

the benefits of microteaching are not temporary but may increase with time and that the "subjects learned a basic problem-solving attitude during microteaching which is progressively reflected in teaching performance" (1972, p. 11).

A survey conducted by Ward (1970) in 1968-69 indicated the wide spread usage of microteaching. He reported that 176 of the 442 NCATE accredited colleges and universities at that time used microteaching. In addition, of the 141 schools which answered the full questionnaire, 72% indicated that they used microteaching in subject method courses, and 18% utilized it in the student-teaching experience.

Although it can be seen that microteaching enjoys widespread support and usage, there is no one set program of microteaching arrangement that is uniformly recommended. There are many variables within the design of this teaching experience, and these variables have been studied by many researchers.

Construction of the Student Group

The construction of the microteaching "student" group is a variable that has been examined, and the results are somewhat contradictory. As microteaching was originally designed at Stanford, the use of "real" students was felt to be vital. Allen and Ryan (1969) emphasized the importance of using students who were representative of those the

trainee would contact in the schools, as well as those who were of the approximate grade level the trainee would eventually teach.

Since that time, this variable has been examined by others who conclude that it is of less importance than originally assumed. Staley (1971) found no significant difference in specific interaction effects when microteaching was used with peers or with elementary students, and Saunders and Nielson (1975) found microteaching to be equally effective in developing questioning skills when the students were either peers or of junior high school age.

Hoerner (1970) compared two groups of microteachers in an industrial education workshop. He found no significant differences in teaching performance for those who microtaught peers and those who microtaught students. Hinckley (1972) emphasized the importance of utilizing microteaching students with similar cultural backgrounds to the trainees' future students. He concluded that if the backgrounds were similar to that of the teacher trainees' future students, then there were no significant differences between peer teaching and the use of students.

In a study by Young, Lee and Richards (1971), it was found that the use of ninth graders, rather than peers, detrimentally affected the performance of the trainees. It was determined that the trainees were fairly uncomfortable with the task of teaching younger students, and because of

this, they did not allow for successful student interaction during the microteaching session.

Johnson and Pancrazio (1971) compared the use of peers, college freshmen and high school students in a microteaching setting. Significant differences at the completion of microteaching favored peer teaching, but the use of high school pupils proved more valuable by the end of the student teaching period. The use of freshmen was viewed as a reasonable and acceptable alternative as a substitute for either peers or high school students. The survey conducted by Ward (1970) indicated that most colleges and universities employing microteaching at that time, used peers as students. The primary reason given was related to reported difficulties with scheduling of both students and equipment.

Allen and Ryan (1969) utilized three to five students in their original plan for microteaching. Staley (1971) examined this variable and experimented with varied group sizes. The group sizes in his study ranged from 4 to 8, 12 or 16 peer students. He found no significant differences in the microteaching effectiveness as related to group size. Johnson and Pancrazio (1971) support the belief that the student group size should be logically related to the instructional goals of the particular microteaching lesson, and therefore there may not be one ideal group size. Jordan, T. C. (1971) recommended that, for practical purposes, a minimum of 8 to 10 students be used when

microteaching is utilized in the preparation of physical education teachers.

Time Span of Microlessons

In the original design of microteaching, Allen and Ryan (1969) found microteaching lessons of 5 minutes to be effective. Hoerner (1970) compared four 5-minute lessons with two 10-minute lessons and found no significant differences in teaching performance as a result of the differences in time.

Turney and Hickner (1969) examined the ability of student teachers, who had practiced with microteaching, to establish and maintain student verbal expression in their classroom. They concluded that both the number of lessons taught and the length of time periods per lesson brought significant differences. They concluded that there was value in an increased number of lessons, and in increasing the length of the lesson to 10 or even 15 minutes.

The teaching behavior to be learned must be considered in determining the most appropriate time span to be used according to Johnson and Pancrazio (1971). In light of this, they suggested that lessons dealing with introductory activity could effectively be shorter than those dealing with the development of sustained inquiry through the use of open-ended questions.

Use of the Video Recorder in Microteaching

The importance of the video recorder becomes evident as the areas of modeling and supervision are studied. Acquiring new behavior patterns by observation and imitation is recognized as one of the major learning processes for humans and animals. The relative merits of a symbolic (written) model as compared with a perceptual (actual performance of the skill) model have been examined, and although some evidence exists that symbolic models are sufficient for some skills, most researchers supported the use of filmed perceptual models (Berliner, 1969; and Young, 1969). Borg (1969), who has done extensive research in the preparation and design of the minicourses used primarily for inservice training, relied heavily upon the use of filmed illustrations by model teachers.

In the original design of microteaching by Allen and Ryan (1969), the use of the filmed lesson, with supervisory comments and directions, was considered to be very important to the ultimate success of the experience. Since that time, the feedback element of microteaching has been carefully examined and several views are now supported.

After reviewing the history of microteaching and the research to date, Cooper and Allen (1971) concluded that while feedback can come from several sources, the most powerful combination seems to be supervisory comment, video tape recordings and pupil comments. Several recent

studies dealing primarily with the variables present in the feedback dimension of microteaching have resulted in no significant differences between various feedback means in terms of teacher effectiveness (Hill, 1972; Hoerner, 1970; Klingstedt, 1971; and Schmaly, 1972).

One additional factor deals with the immediacy of feedback. In contradiction to facts learned from most studies of animal and human learning, it appears that immediacy of feedback is not crucial to the acquisition of some behavior when videotape feedback is used. This was supported in research by Ciampa (1972), Cooper and Allen (1971), and McDonald and Allen (1967) who concluded that the videotape playback reinstates the trainee's performance for him so that the factor of immediacy is no longer relevant.

Material Relating to Teaching Strategies And Decision Making

For centuries, educators have been trying to find THE best way to teach. Although it has not been a successful venture in terms of finding that one best way, the effort has done much to add to a knowledge of teaching in general. Joyce and Weil (1972), in a recent book entitled Models of Teaching, summed up this search and its difficulties.

> As in the case of art, good teaching is something many people feel they can recognize on sight, although they have difficulty expressing a reasoned basis for their judgement. Hence, implicit in many discussions about teaching is the notion that there is probably a certain

> kind of teaching which is really better than all the other kinds. We hear of 'childcentered' teaching, 'inductive' teaching, 'inquiry,' teachers who 'really work the kids,' others who 'really make it interesting,' curriculums which are 'process-centered,' and materials built on 'behavior modification' principles. The usual implication is that there exists a certain definable way of working with students which helps them to grow more than any other way (1972, pp. 3-4).

Joyce and Weil went on to say that the research dealing with this problem is remarkably ambiguous and although there have been several hundred studies which compare one general teaching method to another, few significant differences have been shown between approaches.

> Although the results are very difficult to interpret, the evidence to date gives no encouragement to those who would hope that we have identified a single reliable, multipurpose teaching strategy that we can use with confidence that it is the best approach (1972, p. 4).

This fact is being increasingly recognized and accepted by educators. E. Paul Torrance, writing in the Foreward to Mosston's book, Teaching Physical Education (1972), stated that there is no supreme style that will serve every teacher and every learner. He said further that "a style generally successful may be altogether unsuccessful when used by another teacher. A style generally successful with most children may be quite damaging for some children" (1972, p. v).

Writing in a General Catalog of Teaching Skills, Turner (1973, p. 1) reiterated this point:

> Teachers use varied procedures to teach children. Some teaching procedures are effective with some students and not with others, with some objectives

> and not with others, and with some teachers and not with others. There is no evidence that there is a single best teaching model.

Singer and Dick supported this argument noting that "one of the major problems in the past was the attempt to determine 'one right way of teaching,' as if such existed" (1974, p. 32). Stolurow found that the most significant conclusion that can be drawn from studies which use teachers as a basis for information about teaching, is that "effective instruction can be produced by a variety of combinations or characteristics and conditions rather than by one unique combination" (1972, p. 167).

Further evidence in support of this belief was found in a recent study conducted to compare the effects of specific styles of teaching in physical education. Boschee (1974) compared three of the styles of teaching, as identified by Mosston, and how they each affected progress along each of four developmental channels. He concluded that no one of these styles was better than another.

The task then, of the trainer of teachers, is not seen as merely giving this teacher a successful style of teaching, but is instead providing the teacher with alternative styles, each of which may be used successfully in a variety of circumstances. Schurr (1975, p. 77) stated that "a teacher must be able to use a variety of methods or approaches and be ready to change rapidly when the situation demands," and Hoffman stressed that "it is

important that those responsible for the preparation of physical education teachers acquire and maintain a flexible attitude toward teaching styles" (1971, p. 57).

According to Joyce and Hodges (1966, p. 409), "a teacher who can purposefully exhibit a wide range of teaching styles is potentially able to accomplish more than a teacher whose repertoire is relatively limited." Indeed, they stated that one of the primary goals of teacher education is to enlarge the capacity of the teacher to control his teaching behavior. In a later paper, Joyce (1972, p. 17) again brought up this point by emphasizing the need for the teacher to "command a range of teaching strategies which induce many kinds of learning."

In an article on "Characteristics of Good Teachers and Implications for Teacher Education", Hamacheck (1969) discussed the importance of teacher flexibility. He submitted that the flexible teacher, the one who can adapt his teaching methods, is a more effective teacher in producing positive student performance and attitude than a teacher who lacks this versatility.

Flanders (1964) attempted to study the differences resulting in classes which were predominately indirect in nature and those which were labeled direct. He found that there was no such thing as a totally direct or indirect teacher. "All teachers are either indirect or direct over only very short periods of time. Every teacher, over long

periods of time, blends direct and indirect acts into some kind of balance" (1964, p. 215). It was, in fact, the control of this blending which he found to be of most importance.

Utilizing interaction analysis, attitude, and achievement scores in seventh-grade social studies and eighth-grade mathematics, Flanders closely observed those classrooms which shifted from direct to indirect and those that went from indirect to direct with the passage of time. He observed that:

> Teachers who were able to provide flexible patterns of influence, by shifting from indirect to direct with the passage of time, created situations in which students learned more. The students of teachers who were unable to do this learned less (Flanders, 1964, p. 219).

Ober, Bentley, and Miller (1971, p. xi) identified the competent teacher as "one who possesses a large repertory of strategies and tactics which he can use at will." They stressed that a teacher "must first acquire an awareness of and control over his own behavior" (p. xi). In keeping with this, Brown and Armstrong stressed that "teaching is an intentional activity" (1975, p. 51).

Mosston was also concerned with conscious control of teaching strategies. He stressed the need for "an integrated theory of teaching, as opposed to a mere smorgasbord of techniques" (1972, p. vii). This concern was echoed by high-school physical educators who responded to a questionnaire administered by Lewis (1973), through which

he attempted to select teaching activities as course objectives for the professional physical education curriculum. The results of this questionnaire indicated a need for material relative to proper selection of teaching method to be included in the professional preparation curriculum. The majority of the respondees, 98.2% of the total sample, or 340 teachers, supported a positive recommendation to have included in the professional preparation curriculum the techniques necessary to design the methods required to achieve program objectives. His recommendation, therefore, was to include "instructional material directed at the thoughtful design of teaching methods necessary for the fulfillment of physical education program objectives (1973, p. 129).

Recognizing this need for deliberate study and practice in the area of teacher strategies and tactics of teaching, those states which have completed a list of competencies for physical education teacher certification have listed, as one of the prime competencies, the ability to select appropriate strategies and tactics of teaching to facilitate learning. Those states include Illinois, North Carolina, Washington and Wisconsin. This competency is also listed in the AAHPER Guidelines for Professional Preparation in Dance, Physical Education, Recreation Education, Safety Education, and School Health Education (1974).

It is generally accepted now that the availability of related alternatives in teaching strategies offers the teacher mobility, greater freedom and higher potential for universal success.

> The teacher who is familiar with a variety of teaching styles is ready to cope with new conditions and to interact successfully with various forms of student behavior--to cope without threat, to experience without fear, and to bring to all his relations with students a contagious spirit of hope (Mosston, 1972, p. 6).

Although there was great support for encouraging the practice and use of wide variety of personal teaching strategies, there was often confusion and lack of communication due, not only to philosophical beliefs, but also to the overlapping and indistinct terminology within the field. In an attempt to find universal definitions for the various strategies, methods, or styles being presented, many theorists have applied decision making as a criterion for differentiation. These theorists attempted to define the role of the teacher and the student in the teaching-learning interactive process.

Barrett (1973) utilized a continuum to design a framework for her discussion of teaching strategies. As she explained it:

> All teaching behavior can be placed along a continuum representing the different types and amounts of decisions given to a learner relative to his behavior in the learning situation. One end of this continuum is represented by no opportunity available for the learner to make any decisions while the other represents maximum opportunity (p. 15).

She diagrams the continuum in the following manner.

No opportunity available for the learner to make decisions relative to his behavior in the learning situation.	Maximum opportunity available to the learner to make decisions relative to his behavior in the learning situation

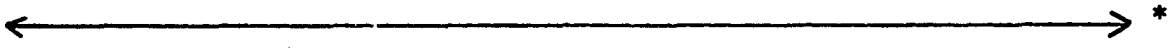

Figure 2. Barrett's continuum of teaching behavior (Barrett, 1973, p. 15).*

In a recent publication by AAHPER, Locke and Lambdin (1976) defined and introduced the idea of individualized instruction. They utilized decision making as one of the variables. In an adaptation of a categorization system devised by Edling (1971) they utilized the following paradigm to illustrate four "pure types" of individualization.

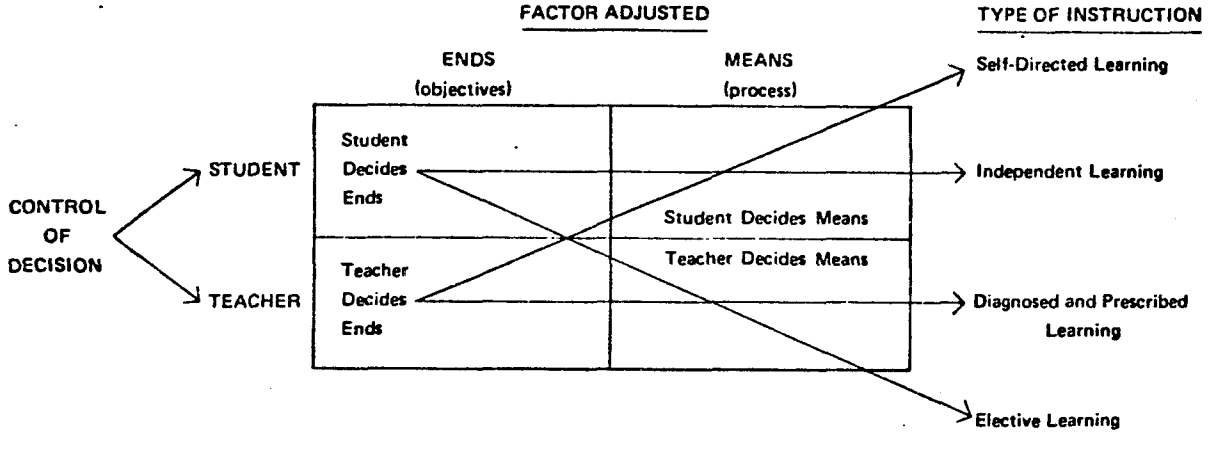

Figure 3. A Four Variable Analysis of Individualized Instruction. (p.22).

Locke and Lambdin pointed out that "various admixtures and relative emphases would produce an infinite variety of subspecies" (1976, p. 23). In addition, they discussed the apparent paradox of "student control."

> The nature of schools as social institutions, and the nature of teacher and student roles, insure that all teaching methods are by definition teacher controlled. Methods do, however, range from direct teacher control of all immediate decisions to indirect teacher control exercised through a set of rules establishing expectations and limits for student behavior. Within such indirectly controlled classes, students may make some or even all of the immediate decisions. It is in this latter sense that we use the term "student control" (Locke and Lambdin, 1976, p. 22).

Working with the concept of classrooms that are adult-centered or child-centered, Bussis and Chittenden (1973) found that child-centeredness and adult-centeredness could be viewed as independent dimensions rather than as opposite ends of a single scale. They therefore proposed a two-dimensional space as a more adequate scheme for conceptualizing classroom environments. Their presentation of this scheme is reproduced on the following page.

As they explained this two-dimensional space, they emphasized that there are two sets of questions which must be asked concerning persons in the classroom who influence the nature and direction of learning. "The first set of questions deals with the child as learner. To what extent does he affect what happens to him in that room? The second set of questions relates to the teacher's contributions" (Bussis & Chittenden, 1973, p. 215). Analysis of the

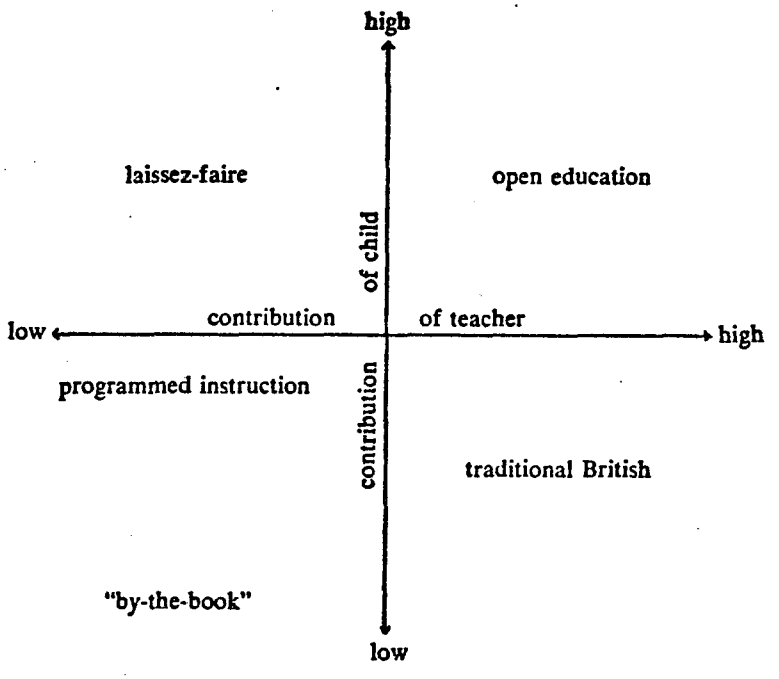

Figure 4. Double Classification Scheme Based on Extent to which (1) the Individual Teacher and (2) the Individual Child Is an Active Contributor to Decisions Regarding the Content and Process of Learning (Bussis & Chittenden, 1973, p. 215).

various teacher and student roles within individual classrooms can be made and these classrooms can then be placed in a particular quadrant or even at the intersection of the lines.

Bussis and Chittenden pointed out that a major implication of this conceptual scheme is its potential usefulness in assessing change in classrooms. They suggest that:

> . . . there may be rather important differences between teachers who are basically engaged in experimenting with a new image of themselves and teachers who

> are primarily engaged in experimenting with a new image of children (1973, p. 218).

Bilbrough and Jones, 1963; Mosston, 1966, 1972; Murray, 1975; Schurr, 1975; and Tillotson, Douglas, Edwards, Fuller, Nicotera, Ward, and Williams, 1968, 1969 are other physical educators who have worked in the area of definition and clarification, and who have generally used student decision making as a criterion for comparison. In her work on describing teacher-student behavior in physical education lessons which implement the concept of movement education, Barrett (1970) presented a discussion of several of these writers. She was particularly interested in how these physical educators viewed not only the ideas of problem-solving techniques, but also the use of choice in the instructional procedures they defined. In turn, she identified six types of movement tasks as they relate to student choice. These will be presented in a later discussion.

Analysis of Selected Teaching Strategies

In an attempt to view these writers' beliefs on teaching strategies and student decision making, a brief analysis of their material will be presented in the next pages.

The first of these physical educators are Bilbrough and Jones (1963) who defined three methods of presentation: the Direct Method, the Indirect Method, and the Limitation

Method. Each method is identified in relation to the amount of choice allowed to the learner.

According to Bilbrough and Jones, when all decisions or choices relative to activity or movement belong to the teacher, the teaching method being employed is the **Direct** method. They defined the Indirect method as that method being employed "when the choice of activity is left entirely to the children, and the only limitation imposed upon them is that of the apparatus being used" (1963, p. 29). They defined the Limitation method as the method being utilized when the choice of activity or movement is limited by some factor other than that of the apparatus.

Teaching Physical Education by Muska Mosston (1966) was one of the first attempts by a physical educator to take an in-depth look at the teaching-learning interaction process. His later book (1972) did not deal solely with physical education, but did maintain his earlier assertation that "teaching behavior is a cumulative chain of decision making" (1966, p. 3), and that decisions are continuously being made by both teacher and student in every lesson.

Mosston believed that teacher behavior alternatives are needed to increase student decision-making alternatives, and he proposed a Spectrum of Styles which enabled the teacher to deliberately study and learn to behave in alternative ways. He defended this on the basis that:

> A SPECTRUM is proposed because the shift from one style to another is sequential in terms of the identified behavioral variables and components. Thus, by holding all variables (and components of the variables) constant except one, a new style evolves--a style which is similar to its predecessor yet different in its contributions to the developmental freeing process. (1966, p. 7)

Mosston felt that the different styles were basically composed of all the decisions that are made during the teaching-learning process. He identified the behavioral variables of this process as: pre-impact, or decisions that must be made prior to the teaching encounter; impact, those that are made during the actual teaching-learning transaction, and; post-impact, which are primarily evaluation decisions (1972, pp. 10-19).

The models of teaching behavior were placed on a continuum where the theoretical limits of minimum and maximum refer to the proportions of decisions made by the participants in the transaction. Mosston supported this arrangement by the belief that, "if the teacher makes all the decisions, theoretically the student makes none" (1972, p. 24). Thus each style may be identified by the decisions that are teacher-made in each of the behavioral variables.

The Command style is at the extreme teacher-directed end of the continuum. The teacher makes all the decisions regarding the teaching-learning process and the student is expected to adhere to them. The teacher maintains control of all variables and uniformity of action is the expected result.

Task teaching, according to Mosston, enables some decisions to be made by the students in the impact set relative to personal placement and timing. Once the teacher has explained and demonstrated the activity, the students may choose their own location, and stop and start the movement on their own.

Reciprocal teaching, or allowing students to work in pairs for evaluation, makes the decision shift from teacher to student in the post-impact set. The students are now to make "post-impact decisions that evaluate their execution of tasks in the impact set" (1972, p. 66). The standards for acceptable performance of a given task are still under the control of the teacher. The organization for this style of teaching may result in small groups which utilize a recorder, rather than being limited to partners, but this does not change the basic design.

Mosston's Individual Program enables "the student, presented with the entire program, to choose the task and the level of performance within it that he considers best suited to him at the time" (1972, p. 83). The teacher continues to make decisions about what content is included, but the learner is now involved in self-evaluation, and is therefore making decisions in both the impact and the post-impact set. Mosston included several operational designs for individualizing programs, and each one requires

higher order qualitative decisions resulting in more self-evaluation.

Guided Discovery is the style which Mosston described, where, for the first time, "the student makes decisions about subject matter" (1972, p. 125). Although the teacher maintains the pre-impact control of what subject matter is to be learned, the student is now making impact decisions about specifics of subject matter. During the pre-impact set, the teacher's responsibility is to design the questions which will be used to lead the students to the focus determined by the teacher. The impact decisions made by the teacher are crucial to the success of this style. The teacher must make adjustment decisions which result in variations in the pre-determined design of the lesson. The student is involved in making decisions which are reflected in oral or movement responses to the teacher's questions. In this way Mosston felt the teacher and the class "reach a state of marvelous interplay of decisions; interplay which reflects mutual trust, mutual curiosity, and mutual joy in sharing the drama of cognitive evolution" (1972, p. 127). The post-impact decisions are interwoven with the impact decisions since the nature of Guided Discovery requires that a post-impact decision be made after every impact decision.

Problem Solving is considered the next level of discovery. It extends further out on the continuum because

it encourages divergent thinking, and "provides for more student decision making, more in both quantity and quality. It provides for decisions about alternatives in solutions" (1972, p. 145). The teacher still designs and presents the problems, but there is no one pre-determined answer, and students are encouraged to produce alternatives and then to decide on an individual solution from these alternatives.

The Student-Designed Individual Program, or Creativity is located at the extreme end of the continuum reflecting student control. The student now makes all the decisions, and in a condition of independence, will design the problems and ask himself the questions that lead him ultimately to find answers.

Tillotson et al. identified five methods of teaching, and also viewed them as being placed on a continuum. This continuum ranged from "a rigid teacher-controlled situation to a very free child-controlled situation" (1968, p. 8). As the learning experiences move along the continuum in the direction of the child-controlled situation, it can be seen that the student has more and/or different types of decisions to make.

The Command method implies a teaching situation of complete control by the teacher with little or no opportunities for intellectual involvement on the part of the student. Task teaching allows for some variation in performance of predetermined specific activity, "where almost

always the burden for generating ideas for activity falls on the teacher and not on the student" (1969, p. 21).

Problem Solving, as seen by Tillotson et al., is generally a longer-term involvement of teacher and student working together to reach a refined end product. Tillotson et al. explained that this process involves a cooperative effort on the part of the student and the teacher in defining a problem. The teacher guides the student as he explores possible solutions, chooses the best solution from the several he has discovered, and practices to refine this solution to a polished end product (1969, pp. 20-21).

Guided Exploration implies certain restrictions and controls established by the teacher yet providing a situation that is open-ended enough to encourage a variety of responses from the students. Tillotson et al. pointed out that in guided exploration, there is little concern for refinement of movement of a finished end product (1969, p. 20).

Free Exploration is at the extreme end of the continuum designed by Tillotson et al., indicating a child-controlled situation. The students are allowed to proceed with their activity with only minimal restrictions or guidance, relating to safety, from the teacher. They emphasized that, "such opportunities are possible after safety rules and concepts are understood and practiced by the children" (1969, p. 20).

Murray (1975) identified three broad methods of presenting movement experiences. These areas are identified as: (1) Teacher Direction (2) Guided Exploration or Problem Solving and (3) Free Exploration, Improvisation, or Invention. Within her framework for identifying these three areas, the amount and kinds of decisions made by the learner were of utmost importance.

As was true of other teacher-directed experiences, Murray pointed out that the teacher makes all the decisions, and that "there is one standard way of following the direction, rather than several acceptable ways" (1975, p. 55). She defended the method of Teacher Direction as having value, but contended that it should not be called something it is not.

> The teacher may be exploring the children's movement abilities for any number of purposes, but the children themselves are not doing any exploring. Experiencing yes, and often with great satisfaction, making choices, investigating, manipulating, inventing, improvising--no. These words imply self-directed activity; and one cannot be self-directed when he is being told what to do and how to do, even though the "how" is couched in interesting imagery (1975, p. 54).

Murray considered the large middle area between teacher-directed and child-directed experiences, to be the area of Guided Exploration or Problem-Solving. It is in this area that "a choice is given, an area of exploration is stated, a problem is set, and the child makes decisions, discovers another way, or solves the problem to the best of his ability" (1975, p. 56). Murray emphasized several

important considerations in this area. She stressed that there must be a purpose to the activity which makes sense to the learner, that the children must make decisions about their activity, and that there may be only one or several decisions to be made for each activity.

Murray considered the end of the creative scale to include the methods of presentation which she labeled as Free Exploration, Improvisation or Invention. She stated that the choices open to the learner are much greater at this point than in either of the preceding methods of presentation. It is through the practice of many decision-making activities that children are made ready for this self-directed exploration, and may also at this time, be ready to set their own problems. It was emphasized that, "even when a child is given freedom to move as he wishes, there must be a reason, a purpose, a catalyst, possibly assigned but better self-selected, to evoke movement" (1975, p. 61).

Schurr (1975) defined two broad areas of interaction: the Direct Methods and the Indirect Methods. Each of these headings was subdivided into an additional three classifications which reflect the use of the decision-making factor as a criterion of identification. These methods are placed on a continuum from Direct to Indirect.

The Direct methods emphasized the direct dominating role of the teacher. Schurr suggested that, at this time,

students can make organizational and temporal decisions, but that the teacher makes decisions relative to choice of content, diversity in performance level, establishment of goals, and evaluation. The subdivisions of this broad heading included the Command, the Task and the Guided Discovery Methods.

The Command method, at the extreme end of the continuum, was explained as being the most direct, with the teacher making all decisions concerning what is to be done, how the action is to be performed and what the acceptable level of quality of performance is to be.

Schurr's Task method was basically teacher directed, with the teacher determining what is to be done and how the action is to be performed. In this method, the teacher may release some of the organizational decisions, such as those relative to location of performance, or temporal factors of when to begin or end a movement.

The final example of the direct methods as presented by Schurr, was Guided Discovery. In guided discovery, the teacher continues to decide what skill or movement task is to be performed, but the students are guided through a carefully designed series of tasks or questions to discover a single predetermined answer or movement response. This strategy may result in diversity as each student proceeds to make decisions, rather than simply following set directions or commands. The teacher must carefully structure the

question or task series so that each student makes individual decisions, yet arrives at the same answer.

According to Schurr, the Indirect Methods allow the student to make many decisions relative to organization. Schurr pointed out that eventually the student will make decisions relative to what is to be done as well as how best to perform the task. The Problem Solving method, as identified by Schurr, enables the student to make many decisions in attempting to find one or more solutions for the problem presented. The student must choose the best solution of the alternatives in terms of his own limitations or situations.

The Exploration method, at the far limit of the indirect end of the continuum, is again subdivided into two headings. Schurr labeled these as Guided Exploration and Free Exploration. Both of these methods call for a teacher-designed movement task which is broad in nature with no particular anticipated response. The students are encouraged to explore a variety of responses and are not necessarily expected to refine these responses. In guided exploration, the teacher may establish some limitations, but in free exploration the student is encouraged to try an endless variety of responses. Schurr pointed out that the only limitation at that time may be for safety, and the pupil is allowed to work in any way he chooses (1975, pp. 89-97).

Barrett defined a movement task as "a verbal statement or question given to the learner by the teacher which indicates the content being developed and the type of response expected by the learner" (1970, p. 95). She felt this was the central focus of the learning experience and through analysis of literature and teacher action, identified six types of movement tasks. Although she was dealing specifically with the teaching-learning process in relation to problem-solving techniques, her identified types of movement tasks can be compared favorably to those who did not work with this specificity.

The movement task which is teacher-designed so that "each student is encouraged to perform specific movements in specific ways" (Barrett, 1971, p. 26), is labeled Command. The intent is that all students will perform specific movements in the same way with no opportunity for individual decision making. Barrett indicated that command is used only when there is no doubt as to how the student is to move.

In Guided Discovery "the teacher designs the movement task so that each student is free to make his own decisions as to how he is to move, but at the same time, is encouraged to focus his attention toward a more specific movement response" (1971, p. 27). Barrett emphasized that the design and purpose of these tasks will result in some differences, but there is still a teacher-controlled limited

range of movement responses. The teacher is guiding the student to "discover by and for himself how to perform a movement" (1971, p. 27).

When the teacher designs the movement task so that each student is encouraged to personally select a movement response that he will be expected to repeat, Barrett labeled it as Selected Response. There is no specific movement response that the teacher is after but the student is to select and be able to repeat a movement for the purpose of perfecting it or for gaining deeper insight into the chosen movement response.

The fourth movement task, Specific Limitations, as identified by Barrett is subdivided into two parts. The task is designed so that each student is encouraged to develop a variety of movement responses in relation to specific limitations. This variety may be encouraged in one of two ways--implied variety allows the student to either repeat the original movement or to change it, while continuous variety indicates the direction for the student to move continuously in a variety of ways.

Non-specific Limitation has also been subdivided into two parts. In general, Barrett pointed out that the student is "encouraged to find different ways of moving in relation to the non-specific limitations of the task" (1971, p. 28). Again, there is no specific movement response desired, but the limitations by nature refer to

generalized movement ideas such as balance or travel. Variety may again be encouraged through either implied variety or continuous variety as described earlier.

Barrett described the sixth movement task as Free Exploration. The task is so designed that the student is completely free to move as he desires and the only limitation is due to safety. Again, there is no specific movement response desired and there is a potential for a variety of movement responses, but this is not necessary. Decisions about the use or nonuse of apparatus may be made by either the teacher or the student.

Comparison of Teaching Strategies

It can be seen through this analysis that all of these theoreticians utilize decision making as a criterion for the identification and isolation of various teaching strategies. Although each utilized a similar basis for determination, and even used much of the same terminology, there are differences between and among the various definitions. An analysis of these differences, beginning with those methods of presentation which are primarily teacher directed, will make this point clearer.

All of the writers agreed that at one end of the continuum the teacher makes most if not all of the decisions, and the learner few or none. The names employed for identification of this area are Command, Direct, and Teacher

Direction. There are some differences even at this point, as it is felt that Command, as identified by Mosston and Schurr, is much more strict and limiting by definition than the other writers intend.

The Task method of presentation is similarly identified by Mosston and Schurr. The same terminology is utilized by Tillotson et al. whose definition is not as explicit, but upon scrutiny it appears to be more similar to Mosston's, Schurr's, Barrett's, and Murray's Problem Solving method.

There are several examples of similar terminology being utilized as the methods of instruction move toward more student direction, but the lack of explicit definitions makes direct analogy difficult. Bilbrough and Jones utilize the term Limitation Method to refer to a broad area that appears to be quite similar to Schurr's and Mosston's Problem Solving, Tillotson's Task, and possibly her Problem-Solving. Although the form of definition given makes direct analysis difficult, it seems logical that this area broadly coincides with Murray's Guided Exploration or Problem-Solving Method, and with Barrett's two forms of Limitation.

Similar use of terminology, but not necessarily definition, is utilized with the terms Guided Exploration and Guided Discovery. Tillotson et al. and Schurr use the term Guided Exploration to indicate a method which encourages a large number of responses. Murray's use of Guided

Exploration seems to imply a similar method, but may be more directly linked to a specific problem. Mosston, Barrett and Schurr use the term Guided Discovery in a quite different context. As Mosston and Schurr use this term, it reflects a method which is a process of teacher-directed inquiry, through which the student is led step by step to a specific goal. Barrett's use is similar but does imply a less teacher-directed series of responses.

In general, these writers once again come together in agreement at the opposite end of the continuum. When the emphasis is on maximum student decision-making opportunities, Bilbrough and Jones utilize the term Indirect, while Tillotson, Barrett, Schurr, and Murray refer to Free Exploration, and Mosston utilizes Creativity. Although again there are some similarities, there continue to be differences. Mosston, Tillotson, and Murray appear to be emphasizing that, at this stage, the learner not only finds his own answer, but may also define his own question.

The figure on the following page is an attempt to graphically demonstrate the relationships between and among the various writers and their methods.

<table>
<tr><th>MOSSTON</th><th>BARRETT</th><th>BILBROUGH/JONES</th><th>TILLOTSON ET AL.</th><th>MURRAY</th><th>SCHURR</th></tr>
<tr><td>Command</td><td rowspan="3">Command</td><td rowspan="3">Direct</td><td rowspan="3">Command</td><td rowspan="3">Teacher Directed</td><td>Command</td></tr>
<tr><td>Task</td><td>Task</td></tr>
<tr><td>Reciprocal</td><td rowspan="3">Guided Discovery</td></tr>
<tr><td>Individual Program</td><td rowspan="2">Guided Discovery</td><td rowspan="2">Task</td></tr>
<tr><td>Guided Discovery</td></tr>
<tr><td rowspan="3">Problem Solving</td><td>Selected Response</td><td rowspan="3">Limitation</td><td>Problem Solving</td><td rowspan="3">Guided Exploration and Problem Solving</td><td>Problem Solving</td></tr>
<tr><td>Specific Limitations</td><td rowspan="2">Guided Exploration</td><td rowspan="2">Guided Exploration</td></tr>
<tr><td>Non-Specific Limitations</td></tr>
<tr><td>Creativity</td><td>Free Exploration</td><td>Indirect</td><td>Free Exploration</td><td>Free Exploration</td><td>Free Exploration</td></tr>
</table>

Figure 5. Relationships of Selected Teaching Methodologies.

Observing Decision Making

The amount and kinds of decision-making opportunities have been used as a determinant in isolating and defining strategies of presentation. This seems to be a valid and useful means of definition but certain problems must be recognized. Roderick and Moyer (1971, p. 94) have pointed out that "decision making is an internal process and therefore does not easily lend itself to study through the analysis of observable behavior." They went on to say that although there is little research to support it at this time, they strongly believe that the behaviors related to decision making are observable, and that the emphasis for study must be upon these behaviors. In their study of nonverbal behavior in young children as it relates to their decision making, Roderick and Moyer utilized an interaction analysis system to record these behaviors. They concluded that it was possible, not only to observe these decision making behaviors, but also to draw inferences about the decision-making process taking place from the observations.

Another researcher, utilizing an interaction analysis system to observe decision-making behavior, was Stevenson (1974). She devised the CODE System (Categories of Decision-Making Elements), by which she was able to observe and classify the interaction of teachers and young children, so that she could record and describe teacher influence on decision-making behavior.

Mancini (1975) studied the differences in attitudes and interaction patterns of elementary children in two human movement programs: one in which the teacher made all the decisions, and one in which provision was made for children to participate in the decision making. He utilized a modification of Mosston's teacher-pupil decision making questionnaire to validate the two teaching strategies. The student's attitudes were measured by the Cheffers and Mancini Human Movement Attitude Scale and the Cheffers Adaptation of the Flanders Interaction Analysis was used to measure interactive patterns. The results of this study demonstrated that students involved in decision making displayed more positive attitudes than students not involved in decision making.

Most of the models of decision phases hark back to John Dewey's presentation of the stages of reflective thought. Dewey (1933) identified the five phases of reflection as: identifying the problem; gathering facts and data; formulating possible solutions, testing these solutions; reanalyzing the problem where necessary and applying the "correct" solution (1933, pp. 106-115). Polya (1945) distinguishes four areas of decision making action.

> First we have to understand the problem; we have to see clearly what is required. Second, we have to see how the various items are connected, how the unknown is linked to the data, in order to obtain the idea of the solution, to make a plan. Third, we carry out our plan. Fourth, we look back at the completed solution, we review and discuss it (1945, p. 5).

Other writers (Brim, Glass, Lavin,& Goodman, 1962, p. 9; and Gagne, 1959, pp. 147-173) have used similar phases in outlining the decision-making process.

As can be noted from the listing of these decision-making phases, the observable behavior discussed by Roderick and Moyer appears only toward the end of this process, and the majority of the process may only be assumed from the study of this "iceberg tip."

Studying decision making in this way seems acceptable in light of the definition of a decision as presented by Miller and Starr (1967). They define a decision as a "conclusion or termination of a process" (p. 22). Gelatt, Varenhorst, Carey,& Miller (1973) defined the act of decision making as

> . . . a process in which a person selects from two or more possible choices. A decision is not required unless there is more than one course of action, alternative or possibility to consider (1973, p. 2).

In defining decision making, Shelly and Bryan (1964) pointed out the need for a problem that requires some action to be taken, and went on to say that "the solution to a decision problem will thus be the selection of a course of action" (1973, p. 6). Le Bert-Francis (1966, p. 19) emphasized the belief that a decision "is a self-directed deliberate selection of a purposive alternative."

Cassel (1973, p. 10) stated that "decision making is not something we are born with, but rather it is learned

through carefully planned educational experiences." Roderick and Moyer (1971) agreed that decision making is a learned process, but felt that for most persons it is intuitively acquired. They went on to say that if decision making is prized, then teachers can assist this process by providing "a variety of self-selective activities to afford children ample opportunity to make choices on their ability and interest levels" (1971, p. 96).

Gelatt et al. (1973) saw a skillful decision maker as an individual who has

> . . . more personal freedom in his life because he is more likely to recognize, discover, or create new opportunities and alternatives. He also has greater control over his life because he can reduce the amount of uncertainty in his choices and limit the degree to which chance or other people determine his future (1973, p. 3).

Writing in Perceiving. Behaving. Becoming., Combs (1962) reiterated the importance of schools helping to develop the decision making process in youth.

> We have based our form of government on the belief that people, utilizing their best potentialities to face up to problems, are completely capable of exercising their own government, that is, of making decisions which are in the best interest of the total population. The school then, which takes seriously its commitment to the fullest development of its people, must facilitate this process (1962, p. 215).

CHAPTER III

PROCEDURES

The purpose of this study was to aid the preservice physical educator in the acquisition of knowledges and skills relative to a variety of teaching strategies. Microteaching was used as a tool to aid in this acquisition, and the amount and kind of student decisions were the factors used to identify various teaching strategies. The purpose of this chapter is to describe the procedures used to gather the data necessary to answer the questions presented earlier.

Sequence of the Experiment

The initial phase of this study consisted of the design and verification of the incidence chart. This involved filming a series of teaching experiences to be used as training tapes by the training judge and the supervisor, and the introduction of the chart into class material of two methods of teaching classes over a period of two semesters.

The second phase involved the preparation of three model tapes and the validation of these tapes by a panel of judges.

The third phase involved the selection and orientation of the subjects and their "students". At this time the subjects chose their content area and filmed a base tape which was used as a reference point for later discussions, and an orientation to the taping process.

The fourth phase of this study consisted of the actual experiences of microteaching the three lessons for each subject. Each subject viewed the model tape for that lesson and studied the appropriate written descriptor in preparation for each microlesson. Following each taping session the subject and the supervisor met to critique the taped lesson. If the lesson proved unsatisfactory in meeting the stated objectives, then the subject replanned and taught the same lesson again. If the lesson met the stated objectives then the subject started preparation for the next teaching experience. This cycle of plan-teach-critique was followed for each of the three lessons plus the base lesson. In cases where it was needed, there was an additional replan-reteach and critique again session added to the sequence.

The chronological schedule of phase four for each subject follows:

1. Each subject was filmed teaching a microlesson to provide a base tape.

2. The subject met with the supervisor and critiqued the base tape.

3. Each subject viewed the model tape and studied the written descriptor of Lesson 1.

4. Each subject met with the supervisor and critiqued Lesson 1. The subject then replanned-retaught and recritiqued if necessary.

5. Each subject prepared for Lesson 2 by viewing the model tape and studying the written descriptor of that lesson.

6. Lesson 2 was taught by the subject.

7. The supervisor met with the subject to critique the teaching of Lesson 2. The lesson was replanned-retaught and recritiqued if necessary.

8. The model tape and written descriptor was studied by the subject in preparation for teaching Lesson 3.

9. The taping of Lesson 3 was completed as the subject taught.

10. The subject met with the supervisor and critiqued Lesson 3. The subject replanned-retaught and recritiqued if necessary.

The complete discussion of the fourth phase will be reserved for Chapter IV.

Development of Materials and Measuring Instrument

Development of Incidence Chart and Training of the Supervisor

The decision-making incidence chart evolved through a process of adaptation and modification after various trial uses. The original chart for this study was designed as a simple 2X2 matrix which indicated only performance or procedural decisions made by either the teacher or the student. Although this chart contained the needed information, the lack of categorization made it difficult to use. The chart was enlarged to include some of the categories used by Mancini (1975) in his adaptation of Mosston's (1966) teacher-pupil decision-making chart (see Appendix A). This revised incidence chart was used in a class setting and with the training judge. Final refinements were then completed (see Appendix B).

A series of 18 tapes, to be used in training the supervisor to be objective in recording the amount and kind of observed decision making, was made during January and February of 1976. The tapes were generally eight to fifteen minutes in length and included teaching sequences which employed a variety of teachers and subjects. Dr. Joanne Lunt, Associate Professor, Winthrop College, was asked to serve as the training judge. The training judge was selected on the basis of past experience in the study

of teacher behavior, expressed interest in the present study and a willingness to make the necessary time commitment.

The role of the training judge was to assist the supervisor in obtaining objectivity in the recognition of the various types of decision making and the recording of them on the incidence chart. It was decided that an 80 percent agreement between the supervisor and the training judge would be a reasonable expectation to indicate a satisfactory level of objectivity.

The training sessions for the supervisor and training judge were scheduled between March 26, 1976 and June 30, 1976. No session lasted less than one hour nor more than three hours. There were 13 training sessions for a total training time of 21 hours. The first two of these sessions were orientation and preparation periods and no scores were recorded. The sessions were generally held within a week of each other, except the last one which was held after an interval of 30 days.

The general pattern of the training sessions involved a preliminary viewing of a training tape, a brief discussion of any points of confusion, a second viewing of the tape and independent markings of incidence charts by the supervisor and the judge. Then the judge and the supervisor compared completed charts and discussed areas of differences. Many of the original differences resulted

from some lack of clarity in the chart. Therefore revisions in the chart were made. The final refinements in the incidence chart were made after seven meetings between the supervisor and judge, and this refined chart was used during the final six training sessions (see Appendix B).

The training judge and the supervisor felt quite comfortable with this refined chart, but some points of confusion were later noted when some of the subjects expressed difficulty with certain areas. The problem areas which surfaced as the subjects used the chart were:

1. Confusion between #1--Procedure, choice of activity and #8--Performance, series or sequence. The subjects expressed confusion over where to mark decisions concerning activity choice.

2. Lack of clear discrimination between #4--Procedure, time or duration and #9--Performance, evaluation. The subjects had difficulty discriminating in these areas when students were told to decide for themselves how long they wanted to continue an activity.

3. Recognition of differing subproblems within a decision problem by different observers. Most decision problems entail several unspoken subproblems. Some subjects tended to recognize many more of these subtle subproblems than did other subjects.

Preparation of the Modelling Tapes and Written Descriptors

Filming of the modelling tapes was begun in the spring of 1976. They were designed to reflect teaching strategies requiring certain types of decision making. Two faculty members in the Physical Education Department at Winthrop College indicated their willingness to prepare special lessons and to have them recorded. Conferences were held with each of these teachers to prepare them for the special needs of their particular lesson. Each teacher was then taped as she taught a 30 to 40-minute lesson. One teacher prepared two lessons and was taped twice.

Several problems became apparent in the process of editing the tapes to emphasize the teaching strategy being utilized, and to shorten them to the needed ten-minute time limit. The most immediate problem dealt with the poor quality of the tapes. Each tape had been made in the upstairs gymnasium at Winthrop College and, due to window placement, lighting arrangements and acoustical problems, the tapes were difficult to see or hear clearly. The second problem related to the lack of clarity of the teaching strategies being utilized. The decision was made to retape the three teaching demonstrations.

Two new teachers were prepared through several rehearsal sessions so that the desired strategies would be clearly evident in their teaching. All taping for these lessons was done in the downstairs gymnasium at Winthrop

College. This area provided better lighting and acoustical arrangements. Each teacher prepared and taught a 30 to 45-minute lesson which instructed a group of students in the performance of a skill which was new to them. Each of the tapes was superior in taping quality and desired instructional content to those completed previously.

Following completion of the first tape, it was edited to the desired ten-minute length. This process involved charting the full tape several times on the incidence chart to determine the actual occurrences of decision-making incidences. Then these incidences were carefully plotted on a time graph to pinpoint their exact location in the tape. Using these time indicators, the tape was edited to both shorten it and to emphasize the desired teaching strategies.

The full-length tape, a careful plotting of times and key words necessary for editing, and a new ten-minute Sony tape were taken to the Winthrop College radio and television studio where the actual editing took place. Cuyler Fields, Supervisor of Audiovisual Services at Winthrop College engineered the editing in the following way. The rough 1/2 inch tape was copied through electronic process to 3/4 inch video cassette. An edited 3/4 video cassette was made through use of a VO 2850 3/4 inch cassette editing unit. This completed 3/4 inch cassette tape was then transferred to a 1/2 inch Sony tape which could be viewed

with the videorecorder. The same procedure was repeated for each of the two remaining model tapes.

A written descriptor was prepared to accompany each lesson to aid the subjects in their use of the three modelling tapes. These descriptors contained information designed to reinforce the general directions to the subjects. In addition, they covered the specific information relative to the lesson as well as a brief account of the lesson as it occurred on tape. Information was also included about the amount and kind of decisions that occurred (see Appendix C for Teaching Experiences #1, #2, and #3).

Selection and Orientation of Subjects

On September 9, 1976 the study was described to the seventeen students enrolled in Education 357, Teaching Physical Education. These students were all senior physical education majors in the professional semester immediately prior to their student teaching experience. Prior to this time the supervisor, who was also the instructor of this course, had presented the idea of decision making as a determinant for instructional methodology and had introduced the incidence chart as a tool for identification of decision problems. Following a brief explanation of the time and out-of-class involvement required, volunteers were requested to participate by signing a card. All but

one of the seventeen students indicated that they would be both interested and able to give the time necessary.

On September 13, five names were drawn. These students were given a brief written introduction to the study and were asked to meet with the supervisor (see Appendix D). One subject decided the time involvement was too great and asked to be replaced. Another name was drawn and this subject was approached and agreed to work with the study. The final group of five subjects consisted of four females and one male.

The subjects were given a copy of the incidence chart and a detailed descriptor of how to use the chart during a group meeting on September 16 (see Appendix E). Each subject was asked to select a content area which would be used throughout all of the teaching experiences. They were reminded that all lessons would be taught in the downstairs gymnasium at Winthrop College so they would therefore be somewhat limited due either to facilities or equipment. They informed the supervisor of their content area and the time they had chosen for the taping of their base lesson. Three of the subjects chose basketball as their content area. One chose volleyball and the fifth selected tennis.

A junior physical education major was asked to assist with the study. This student assistant agreed to serve as the coordinator between the supervisor and the freshman physical education majors who were to serve as students in

the microlessons. The freshmen were enrolled in Physical Education 181, Introduction to Physical Education. The supervisor went to this class, explained their role in the study and asked for volunteers to sign a card and give their telephone number and address. Of the 52 in the class, 47 indicated that they would be willing to act as a student in one or more of the microlessons.

Once a subject was ready to present a lesson, the supervisor notified the junior assistant of the time and the content area. The junior assistant then contacted the freshmen volunteers to find six to eight who were willing to come at that time. The content area influenced the choice of students somewhat because there was an attempt to not utilize those students already possessing a high degree of skill in a particular area. The subjects and supervisor attempted to set the schedule in advance, but the need to retape made this difficult at times. As much as possible, the students were not used during the retaping of a lesson in which they had participated originally.

Procedures for Videotaping Microteaching Sessions

Equipment and Facilities

The videotaping equipment consisted of a Sony video camera, model AVC-3400 with zoom lens 12.5-50mm, f/1.8 C-mount. A Sony monitor television, model CUM-110UA with an

11-inch screen, was used during the training and critique sessions. All taping was done on 1/2-inch Sony tape reels. The equipment belonged to the Department of Physical Education, Health and Recreation of Winthrop College.

Taping Technique

The supervisor did the taping for all lessons from an elevated position on a volleyball official's stand located in a corner of the gymnasium. The subjects wore a neck microphone during taping sessions. There was some limitation in the movement pattern of the subjects due to the cord for the microphone. Adjustments were made in the location of the videotape base unit to allow each subject to determine the best placement for maximum maneuverability for each lesson.

At the beginning of each taping session, the supervisor checked to be sure the facility was arranged properly for the particular lesson being taught and the correct equipment was available to the subject. The student assistant checked the names of the students and introduced the subject to the students. The subject was reminded to tell the students of any background knowledge which they needed to begin the lesson at the level planned. A last-minute check was made of the taping equipment. When the subject indicated readiness, the supervisor started taping and the student assistant checked the time. As the lesson progressed past

eight minutes, the student assistant reminded the subject of the time remaining and indicated, if necessary, when the ten-minute time was completed.

Taping and Critique Schedule

Each student followed the same sequence of lessons but there were individual variations in the time intervals due to various schedule problems and to the fact that different subjects had to retape different lessons. There was a technical problem with Lesson I, Subject IV and this lesson was retaped out of sequence. Table 1 shows the complete schedule of taping and critique sessions for each subject.

There were several factors to be considered in scheduling taping sessions. The facility used was a teaching and coaching station so times had to be arranged around its availability. The subjects were enrolled in twelve semester hours of classes and were free only at limited times. The freshman students met certain required classes and were uniformly unavailable at specified times, and the supervisor had certain professional commitments which eliminated the use of some time periods or days.

Generally the taping took place between 10:50 a.m. and 5:45 p.m. In most cases, there was a week between the taping of one lesson and the taping of the next, although the subjects often did not feel this amount of time was necessary for preparation. The written descriptor and taped model for each lesson were available to the subjects at their convenience.

Table 1

Taping and Critique Schedule

Followed by Each Subject

	Subject				
	I	II	III	IV	V
	BASE LESSON				
Tape	9-22-76	9-23-76	9-22-76	9-22-76	9-22-76
Critique	9-24-76	9-27-76	9-25-76	9-24-76	9-27-76
	LESSON 1				
Tape	9-30-76	9-30-76	9-30-76	9-29-76	9-30-76
Critique	10- 1-76	10- 1-76	10- 4-76	9-29-76	10- 1-76
Retape			10- 6-76	10-14-76	
Recritique			10-13-76	10-19-76	
	LESSON 2				
Tape	10- 7-76	10- 5-76	10-15-76	10- 6-76	10-13-76
Critique	10-12-76	10- 5-76	10-17-76	10- 6-76	10-15-76
Retape	10-14-76	10- 7-76			10-18-76
Recritique	10-15-76	10- 7-76			10-18-76
	LESSON 3				
Tape	10-19-76	10-15-76	10-19-76	10-19-76	10-20-76
Critique	10-20-76	10-18-76	10-20-76	10-19-76	10-20-76
Retape	10-21-76	10-19-76			
Recritique	10-21-76	10-21-76			

Statistical Technique

Various statistical treatments were used in the execution of the study. The validity of the modelling tapes was checked through the use of a panel of judges. The reliability of the supervisor was established and the training judge was used to verify supervisor objectivity. Performance of each subject was investigated through an analysis of the taped microlesson, the incidence charts of each lesson and a discussion of the subject's progression through the teaching experiences. The validity of the tapes, the objectivity of the supervisor and the reliability of the supervisor will be discussed now in some detail. The performance of the subjects will be the emphasis of Chapter IV.

Validity of Tapes

The validation of the modelling tapes was estimated by the rating of three judges. The judges were chosen on the basis of their expertise and experience in the field of physical education methodology. Their availability to the supervisor and the video equipment was also a consideration. The three judges selected were Dr. Richard Hohn, University of South Carolina, Ms. Jo Ann Kemp, Coker College, and Ms. Diane Ward, University of South Carolina.

During the summer of 1976 each judge was contacted by phone and each agreed to serve in this capacity. Each was sent a copy of the incidence chart and a set of directions

which explained the study and the use of the chart (see Appendix F). A time was established for the supervisor to take the modelling tapes and the video playback equipment to the judges. Two of the judges, Hohn and Ward, were able to meet at the same time with the supervisor, and Kemp met later that same day. The supervisor answered questions about the incidence chart and the terminology employed. Each tape was viewed twice by the judges and time was allowed for questions following the first viewing. During the second viewing, the judges independently marked the incidence chart to indicate their observation of the amount and kind of student decision making demonstrated. The judges did not know which strategy each particular tape was supposed to model.

Interjudge agreement was assessed by the Reliability Index suggested by Bijou. Each judge was paired with every other judge and a percent of agreement score was obtained for each of the four divisions (Procedure Teacher, Procedure Student, Performance Teacher, and Performance Student). The Bijou formula requires that the number of agreements be divided by the number of agreements plus the number of disagreements (Bijou, 1969, p. 195). This formula was also utilized with the total number of agreements and the total number of disagreements for each pairing to obtain the overall level of agreement for each pairing for each tape. Seventy percent of agreement among

the judges was accepted as indicative that the tapes were in fact reflecting the strategy intended and were therefore valid.

The judges were in agreement about the generalized feeling of each tape. It was not possible, however, to achieve an agreement level of 70% consistently on all divisions of all tapes. This difficulty was due to several factors. The shortness of the tapes and the editing of them to emphasize the desired kinds of decision problems often resulted in a tape which perhaps had only one or two examples of either a procedural or performance student decision. This was in keeping with the directions for the tape but the small number of possibilities created statistical problems. If Judge A recorded 0 student procedural decisions, Judge B recognized 1 and Judge C recorded 2, then it was statistically impossible to achieve the desired 70% agreement although there was definite agreement that few if any student procedural decisions were evident in the tape. In all cases the judges agreed that each tape reflected the majority of the desired decision problems and few if any of those not desired. Their agreement as to the exact number, however, did not reach 70% in all cases.

The lack of fine discrimination, which was purposely not built into the incidence chart, was another factor in the difficulty of achieving a high percent of agreement

score. It was sometimes difficult to discriminate among various subproblems of a decision problem. Whereas one judge may have recorded one score for a problem, another judge may have discriminated more finely and recorded two scores for the subproblems involved. The ultimate small number of total tallies often made such a one-point difference result in a percentage score below that required.

Table 2 illustrates the results of each judge's reaction to each tape, the interjudge percent of agreement score, and the overall level of agreement. It can be noted that, of the 36 individual pairings of judges' scores, 22, or 61% did reach the desired 70% level of agreement. There were seven pairings which resulted in perfect agreement and only five which resulted in less than a 50% agreement. It may also be noted that the desired agreement was reached for eight of the twelve pairings between Judges A & B and between Judges B & C. Judges A & C achieved the desired percentage in six of the twelve pairings. When the overall levels of agreements are examined it is noted that 5 out of the 9, or 56% of the pairings resulted in scores higher than 70%. The remaining four were in the 65-68% range. The judges obtained the best percent of agreement scores on Modelling Tape 3, which they observed last, and had the lowest scores overall on Tape 1, which was the first tape they saw.

Table 2

Judge's Scores and Interjudge Percent of Agreement on the Modelling Tapes

Tape 1--The students make the majority of the procedural decisions and few if any of the performance decisions.

Judge	Pro T	%	Pro S	%	Per T	%	Per S	%	OLA%
A	7		12		18		2		
B	4		19		25		3		
C	3		11		18		1		
A&B		57		63		72		67	67
A&C		43		92		100		50	85
B&C		75		58		72		33	65

Tape 2--The students make the majority of the performance decisions and few if any of the performance decisions.

A	8		3		9		15		
B	11		4		8		21		
C	14		1		4		15		
A&B		73		75		89		71	76
A&C		57		33		44		100	68
B&C		79		25		50		71	66

Tape 3--The students make approximately half of the procedural and half of the performance decisions.

A	3		3		5		8		
B	4		6		5		9		
C	3		5		5		8		
A&B		75		50		100		89	79
A&C		100		60		100		100	91
B&C		75		83		100		89	88

Note. Pro T = Procedural Teacher decisions, Pro S = Procedural Student decisions, Per T = Performance Teacher decisions, Per S = Performance Student decisions, OLA = Percent of overall level of agreement (Bijou).

The judge's scores on the modelling tapes are presented graphically in Figure 6. This presentation supports the validity of the tapes by showing the numerical assignments allotted to each division by each judge as a percent of the total decisions recorded by that judge on that tape. This support may be noted by an examination of the results for each tape.

Tape 1 was designed to model a lesson in which the students made the majority of the procedural decisions and few, if any, of the performance decisions needed in the lesson. In each rating it is clear that the judge observed that a majority of the procedural decisions made in the lesson were made by the students. In the recording of performance decisions it is equally obvious that the students made few decisions of this kind.

Tape 2 modelled a teaching lesson where the students made the majority of the performance decisions and few, if any, of the procedural decisions needed in the lesson. In Figure 6 it is clear that the judges observed that of the performance decisions made in the lesson, the majority were made by students, and the students made few if any of the procedural decisions in the lesson.

Tape 3 was designed to illustrate a lesson in which the students made approximately half of the procedural decisions and half of the performance decisions needed in the lesson. The differences for each paired grouping of

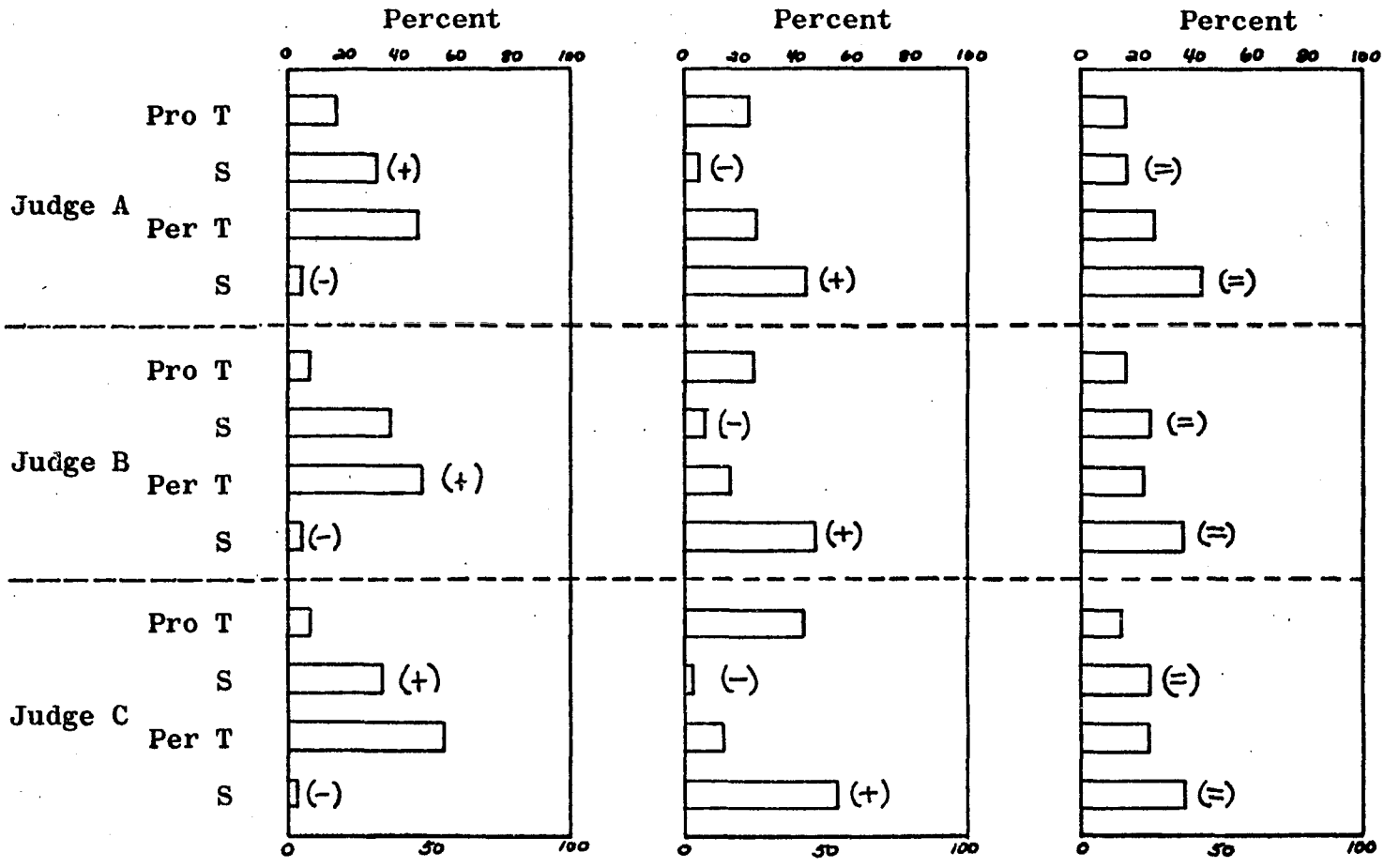

Figure 6. Percent of decision problems for each modelling tape from each judge's scores.

Note. Lesson direction called for (+) = majority, (-) = few is any, and (=) = approximately half of the student decisions to be of this kind.

performance of procedure decisions ranged from a low of a zero point difference, to a high of only 17 percentage points. It was therefore decided that fair equalization in decision making was evident.

Table 3 illustrates the results of grouping the judges' reactions on all three tapes. The totals for all divisions of the incidence chart may be examined. It may be noted that on 10 of the 12 pairings, or 83%, the judges' percentage of agreement was greater than the desired 70%. This would seem to indicate that the judges agreed more than they disagreed on the overall picture of identifying the amount and kinds of decision problems.

Table 3

Judges' Totals and Percent of Agreement for All Three Modelling Tapes

Judge	Total Pro T	%	Total Pro S	%	Total Per T	%	Total Per S	%
A	18		18		32		25	
B	19		29		38		33	
C	20		17		27		24	
A&B		95		62		84		76
A&C		95		94		84		96
B&C		90		59		71		73

Table 4 organizes the data so that the judges' ratings of each tape may be viewed as they each first discriminated between teacher and student decisions and then procedural or performance decisions. This information was obtained by combining points of reference exhibited in Table 2. For example, Judge A noted that the teacher made 7 procedural and 18 performance decision in Tape 1. That 25 is indicated on Table 4 for Judge A under Teacher. This reorganization of the data provided another perspective of the amount of interjudge agreement.

There was 70% agreement or better in 29 of the 36 pairings in Table 4. This represents 81% of these pairings. Judges A & C achieved the desired rating in 100% (12 of 12) of their pairings; Judges A & B in 83% (10 of 12); and Judges B & C in 58% (7 of 12). The higher percent of agreement scores noted in this table would tend to support the argument that the Bijou statistical treatment could not satisfactorily deal with similar information subdivided into smaller categories. The results indicate that in fact the judges were able to discriminate between teacher and student decisions, and between procedural and performance decisions. This in turn gives added credence to the validity of the modelling tapes.

This material is reconfirmed in Figure 7 where the collective scores of the judges are illustrated for each tape. For instance, the total of all judges' scores on

Table 4

Judges' Discrimination and Percent of Agreement of Teacher/Student and Procedure/Performance Decisions on The Modelling Tapes

Tape 1--The students make the majority of the procedural decisions and few if any of the performance decisions.

Judge	Teacher	%	Student	%	Procedure	%	Performance	%
A	25		14		19		20	
B	29		22		23		28	
C	21		12		14		19	
A&B		86		64		83		71
A&C		81		86		74		95
B&C		72		55		61		68

Tape 2--The students make the majority of the performance decisions and few if any of the procedural decisions.

A	17		18		11		24	
B	19		25		15		29	
C	18		16		15		19	
A&B		89		72		73		83
A&C		94		89		73		79
B&C		95		64		100		66

Tape 3--The students make approximately half of the procedural and approximately half the performance decisions.

A	8		11		6		13	
B	9		15		10		14	
C	8		13		8		13	
A&B		89		73		60		83
A&C		100		85		75		100
B&C		89		87		80		93

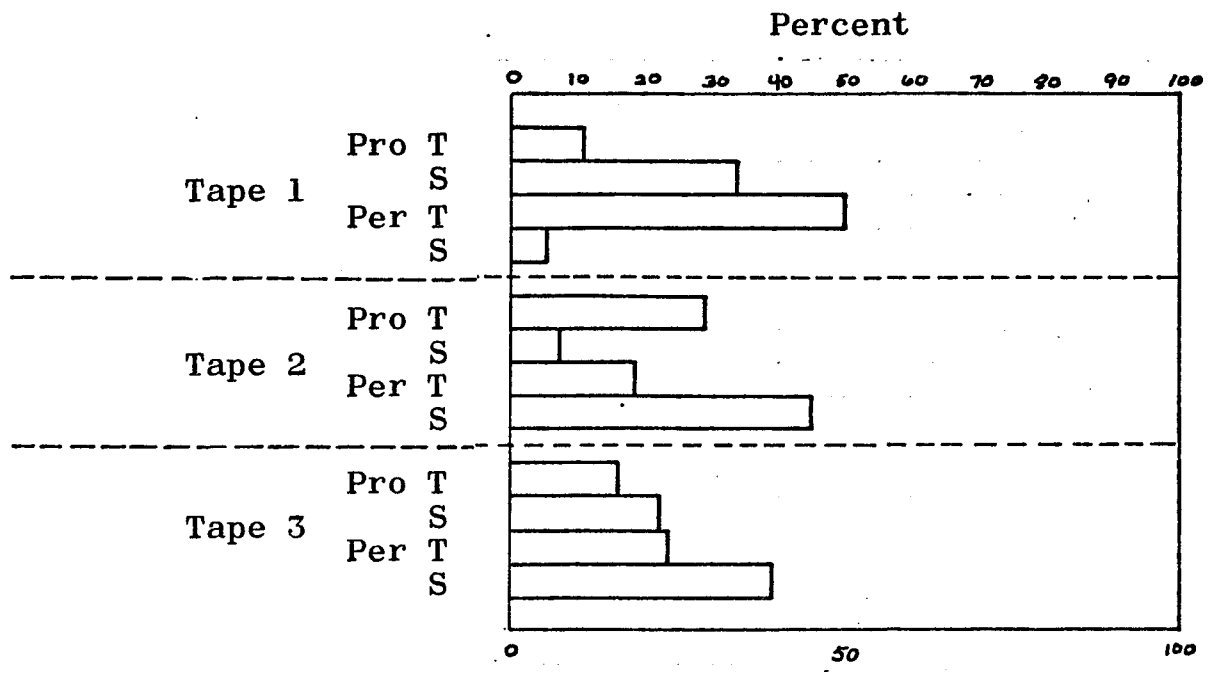

Figure 7. Judge's collective scores of Model Tapes--Percentage of each type of decision problem per tape.

Tape 1 is 123. Fourteen, or 11% of these scores were recorded in the area of Procedure Teacher. That percentage of the total decisions recorded may be seen in Figure 4 under Tape 1, Procedure Teacher. It therefore becomes clear that on Modelling Tape 1 the judges recorded few student decisions in the area of performance, and this is then repeated on Tape 2 in the procedure area. The students clearly made the majority of the procedural decisions in Tape 1 and the majority of the performance decisions in Tape 2. The scores are more uniform for Tape 3 where the students were to make approximately half of the procedural and half of the performance decisions.

Objectivity of the Supervisor

The supervisor was trained to identify the types of decisions by working with the training judge and training tapes. The objectivity of the supervisor was tested by the Bijou Reliability Index (1969, p. 195) on a series of 11 trials. Following each of these trials, the scores recorded by the judge and the supervisor on each of the four divisions of the incidence chart were compared. In each case, a percent of agreement score for each division was obtained. In addition, the total number of agreements on each tape was divided by the total number of agreements plus the total number of disagreements to obtain an overall level of agreement for that trial.

Table 5 represents the results of these trials. It can be noted that no one trial resulted in the desired 80% agreement score in all four categories. This level of agreement was reached 21 times in the 44 divisions of the incidence chart used on the 11 trials. The overall level of agreement was better than 80% in four of the eleven trials and the remaining trials achieved scores from 65% to 79%. When the training judge's scores were totaled for each division and the supervisor's scores for each division were totaled for the 11 trials, the results achieved the desired degree of agreement in all four categories. This may be noted at the bottom of Table 5.

Table 5

Agreement of Supervisor's and Training

Judge's Rating on 11 Training Tapes

TRIAL	Procedure Teacher			Procedure Student			Performance Teacher			Performance Student			OLA%
	Training Judge	Supervisor	%	Training Judge	Supervisor	%	Training Judge	Supervisor	%	Training Judge	Supervisor	%	
1	7	6	86	2	2	100	1	3	33	10	11	91	83
2	9	11	82	4	4	100	9	7	78	1	4	25	75
3	14	11	79	1	1	100	14	12	86	3	4	75	82
4	5	7	71	1	0	0	19	20	95	10	12	83	85
5	12	18	67	0	0	0	22	20	91	13	17	77	79
6	11	11	100	0	1	0	7	8	88	14	9	64	79
7	4	15	27	0	0	0	10	11	91	7	7	100	68
8	14	9	64	5	4	80	20	18	90	2	4	50	77
9	14	7	50	4	10	40	25	30	83	3	1	33	65
10	12	16	75	1	1	100	7	8	88	17	13	77	79
11	4	2	50	16	17	94	20	18	90	1	2	50	86
TOTAL	106	113	94%	34	40	85%	154	155	99%	81	84	96%	77%

This would support the discussion presented earlier which explained the difficulty of achieving the desired degree of agreement to establish the validity of the tapes. In addition, it became evident that the statistical tool did not allow adequate discrimination. A difference of only one tally can result in a percent agreement score of 0% (1-0), 50% (2-1), 67% (3-2), 75% (4-3), 80% (5-4) and so on. The degree of difference is the same in each case but the percent of agreement changes as a larger number of tallies is involved. In each case there seemed to be a strong indication of agreement on what not to tally and only a very slight difference on things to tally. By totalling the differences between the judge and the supervisor in each comparison and dividing the resulting figure by the total number of comparisons, an average difference of only 2.3 is obtained.

It can be noted from Table 5 that, with the exception of Trial 9, there is consistent agreement between the judge and the supervisor as to whether the teacher or the student made the majority of the procedural decisions. In this incidence the training judge recorded fourteen procedural decisions for the teacher and only four for the student. The supervisor reversed this emphasis and noted only seven procedural decisions for the teacher and ten for the student. The judge and the supervisor agreed on every trial about who made the majority of the performance decisions.

Figure 8 graphically illustrates the raw scores so that a comparison may be made between the judge and the supervisor. By arranging the information in this manner it is clear that there is a high level of agreement throughout all sessions. The greatest difference at any time is noted in the 11-point spread in the area of Procedure Teacher, Trial 7.

Figures 9 and 10 isolate and more closely examine the results of the judge's and supervisor's ratings of these 11 tapes. In Figure 9, only the procedural decisions are included. The generally high level of agreement between judge and supervisor as to the percentage of procedural decisions made by the teacher and by the students is clear.

Figure 10 illustrates this information relative to only the performance decisions. As noted in this figure, agreement was generally more difficult to establish in the area of performance decisions than in procedural decisions. Despite this difficulty, there is an overall high degree of agreement exhibited between the ratings of the training judge and the supervisor as to the percentage of performance decisions made by the teacher and the students.

The desired percentage agreement score of 80 was not consistently achieved on all trials. There were enough factors evident, however, to indicate that adequate objectivity of the supervisor had been obtained.

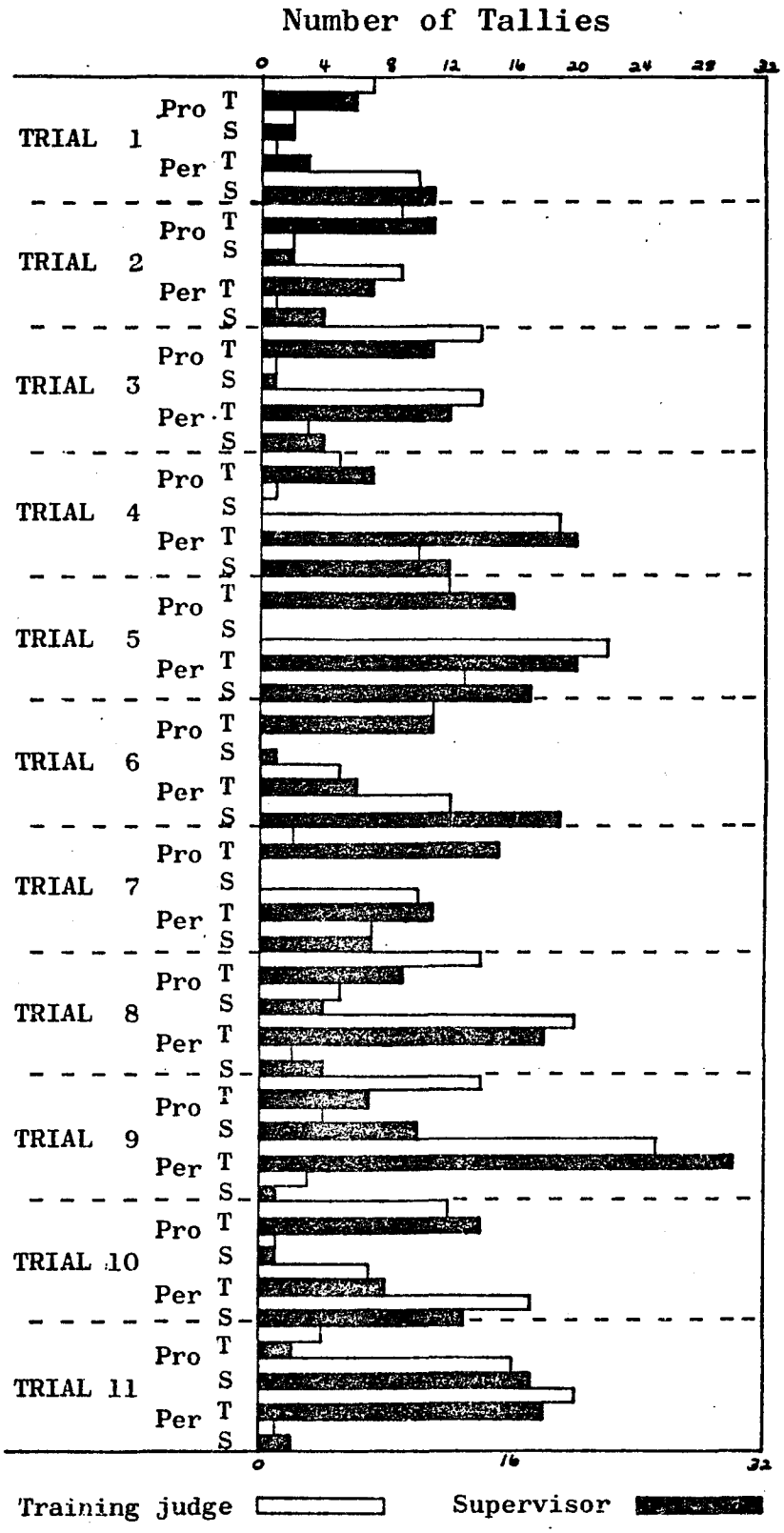

Figure 8. Number of tallies recorded by the training judge and the supervisor on the 11 training trials.

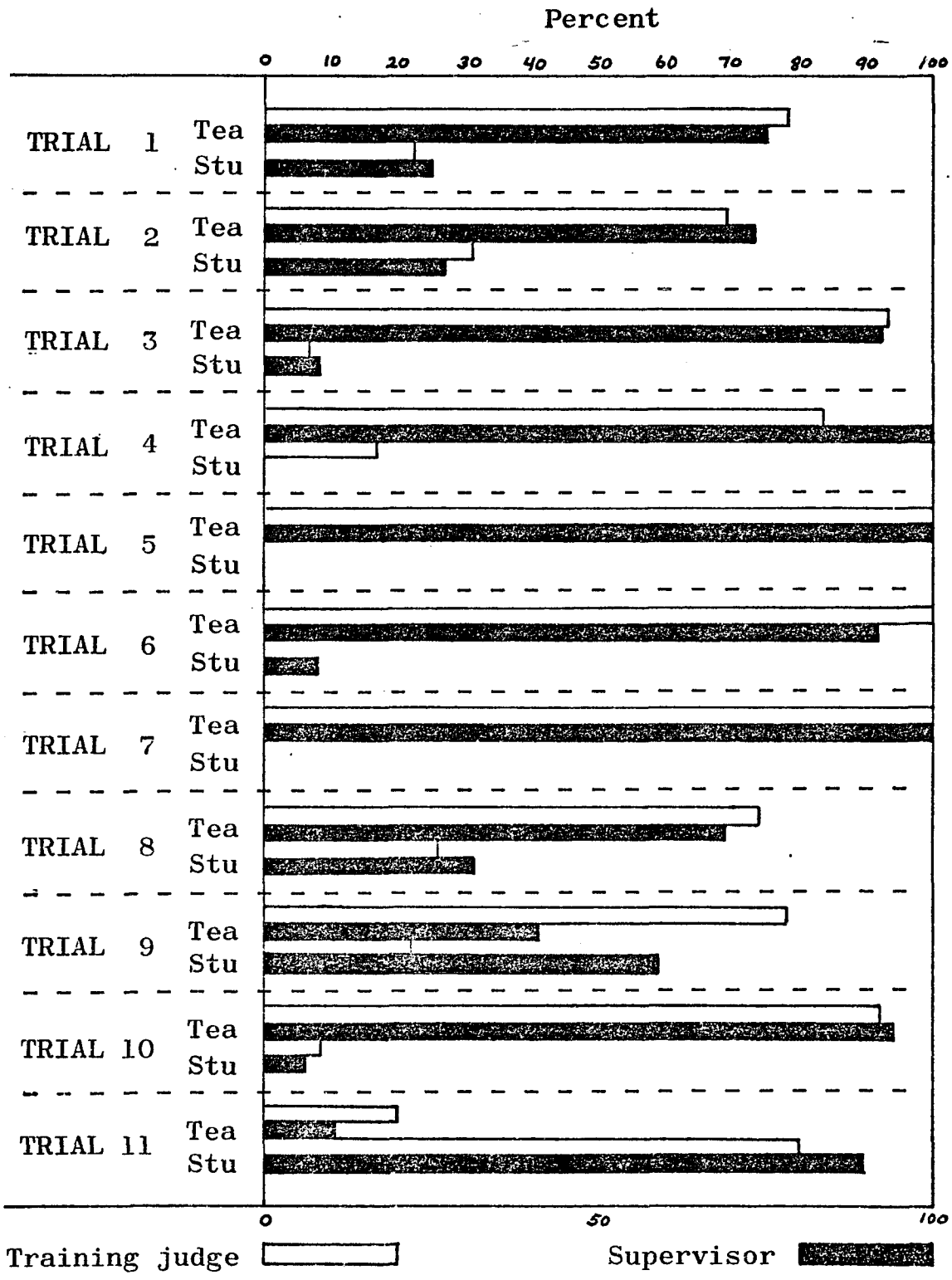

Figure 9. Comparison of Procedure decisions as scored by the training judge and the supervisor on the 11 trials.

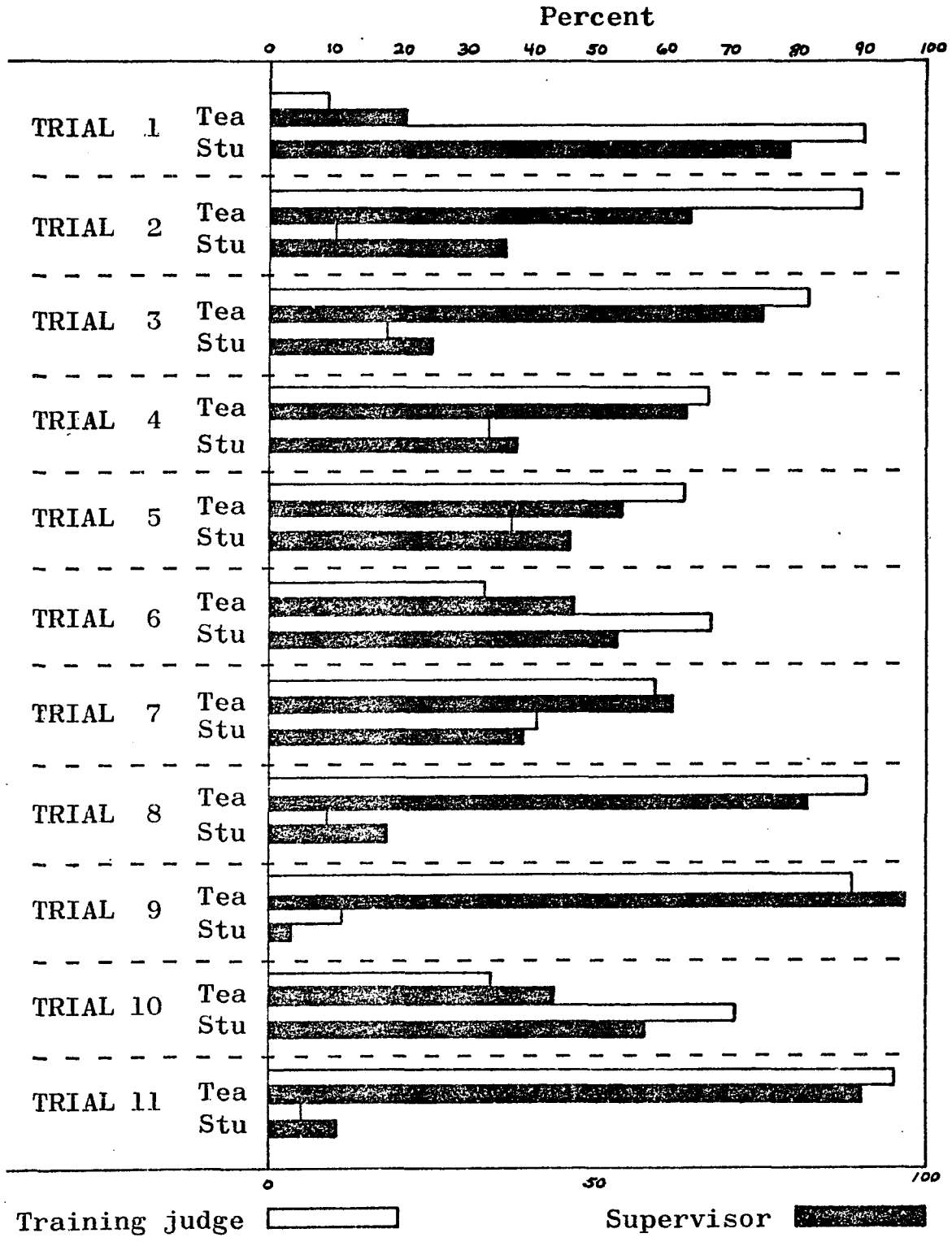

Figure 10. Comparison of Performance decisions as scored by the training judge and the supervisor on the 11 trials.

Reliability of the Supervisor

The extent to which the supervisor was able to repeat the coding of the same tape upon repeated viewings was tested by use of Bijou Reliability Index (1969, p. 195). The test was first performed in July 1976 and was repeated in September 1976. Following this two-month period, the supervisor obtained percent of agreement scores of 100%, 88%, 82%, and 50% on the respective incidence chart categories shown in Table 6. It can be seen that the low rating of 50% is due to a difference of only one tally. It was determined that satisfactory reliability was demonstrated.

Table 6

Supervisor Reliability

	Test 1	Test 2	% Agreement
Procedure Teacher	2	2	100
Procedure Student	15	17	88
Performance Teacher	22	18	82
Performance Student	1	2	50

Performance of Subjects

Each subject was asked to view a model tape and study a written descriptor in preparation for each lesson. The subject then planned and taught a microlesson which was

video taped. The supervisor met with the subject in a critique session and the video tape was observed and discussed. The second viewing of the video tape allowed the supervisor and the judge to independently record observed decision problems on respective incidence charts.

The critique sessions served as a form of constant feedback and contact with the subjects and their performance on each of the teaching encounters. The information gained at these times was used in three different fashions to test for different factors and will be the focus of Chapter IV.

Summary

In summary, this chapter has presented a discussion of the procedures utilized in conducting this study. Those procedures included the development of an incidence chart and the training of the supervisor to be objective in the use of the chart. This training was conducted through the use of a training judge and the objectivity of the supervisor was proven satisfactory.

Further procedures included the preparation and validation of three modelling tapes. The validity of these tapes was established through analysis of ratings made on them by a panel of judges. The reliability of the supervisor was demonstrated through incidence chart ratings made on separate viewings of the same tape.

Following successful completion of the above procedures, the taping of the subjects was begun. A complete analysis of the results of the subjects' involvement will be covered in Chapter IV.

CHAPTER IV

DATA ANALYSIS FOR MICROTEACHING EXPERIENCES

The purpose of this study was to aid preservice physical educators in the acquisition of knowledge and skills relative to the use of a variety of teaching strategies. The amount and kind of student decision making involved in each was the factor used to identify the various strategies. Microteaching was utilized as a tool to practice these strategies.

The following questions were asked of the performance of each subject and the results will be discussed throughout this chapter.

1. Were the microteachers able to present each of the lessons as directed? This question was answered by an examination of the final tape of each subject's lessons. The supervisor's rating on the incidence chart for each of these lessons was used as an indication of the subject's precision in reaching the requested goal.

2. Were the microteachers able to distinguish between the types of decision problems presented in each of the lessons? This question was resolved by a comparison of the supervisor's incidence chart rating to the subject's

incidence chart rating of the same tape to obtain a percent of agreement score utilizing Bijou's formula (1969, p. 195). This rating demonstrated the subject's capability to identify and to distinguish between the two types of decisions as they occurred in the microlessons.

Careful records of each subject's experiences were kept by the supervisor. These records included expressions of difficulties, insecurities and successes relative to each of the microlessons. A questionnaire (see Appendix G) concerning various aspects of the experience was administered to each of the subjects at the completion of the experiment. This material was analyzed in relation to the feasibility of using microteaching as a tool in the development of varied teaching strategies.

Subject's Ability to Reach the Prescribed Lesson Objective

The subjects were directed to utilize teaching strategies in each lesson which would result in the requested amount and kinds of decision making. All subjects taught Lesson 1, then Lesson 2, and finally Lesson 3. The directions for each lesson were as follows:

Lesson 1--Teach so that the students make the majority of the procedural decisions and few if any of the performance decisions which are required in the lesson.

Lesson 2--Teach so that the students make the majority of the performance decisions and few if any of the procedural decisions which are required in the lesson.

Lesson 3--Teach so that the students make approximately half of the procedural and half of the performance decisions which are required in the lesson.

At the conclusion of each lesson, the supervisor and the microteacher met for a critique session. Each viewed the tape of the lesson and independently completed an incidence chart (see Appendix B). The supervisor's rating on the incidence chart was used to indicate the degree to which the subject met the requested direction of the lesson. A simple majority of the requested kind of decision problem, and no more than 20% of the not-desired decision problem, was accepted as successful completion of the tasks for Lessons 1 and 2. Lesson 3 involved the control of teaching behavior so that the teacher and the students split the decision making. The supervisor determined whether this goal was accomplished. A split within the range of 40 to 60% of decision problems was considered acceptable.

If the objective was not met, the subject was requested to replan and to reteach the lesson. There were six occurrences of this sort which necessitated such a retaping. One additional retaping was necessary due to a mechanical malfunction of the taping equipment.

Table 7 (following page) represents the supervisor's incidence chart rating of each subject's final tape for each lesson. In addition, the percentages of student decision problems for both procedure and performance are included. This material will be explained in detail as each lesson is analyzed.

Presentation of Lesson 1

Lesson 1 was designed to utilize teaching strategies which would result in the students making a majority of the procedural decisions and few if any of the performance decisions. In this lesson, as can be seen in Table 7, recorded student procedure decisions ranged from a low of 64% to a high of 93%. This was well within the required simple majority of procedural decisions. When the number of decisions was totaled for Lesson 1 it was found that the students made 83%, or 48 of the 58 procedural decisions needed in all of the first microlessons. When the performance decisions for each microteacher were added together, it was found that the students made only 10%, or 10 of the 102 performance decisions required for all five teachers.

The percentage of decisions recorded in Lesson 1 is presented graphically in Figure 11. Each percentage represents that part of the procedure or performance decisions made by either teacher or student according to the supervisor's rating. It can be seen that of the procedural decisions

Table 7

Supervisor's Incidence Chart Rating

of Each Subject's Final Tape

Lesson 1--Students make majority of procedural decisions and few if any of the performance decisions

	Procedure				Performance			
	Teacher	Student			Teacher	Student		
	N	N		%	N	N		%
S I	3	7		70	17	2		11
S II	4	7		64	25	0		0
S III	(5)* 1	(4) 13		(44) 93	(10) 17	(5) 3		(33) 15
S IV	1	12		92	22	1		1
S V	1	9		90	11	4		27
Total	10	48		83%	92	10		10%

Lesson 2--Students make majority of performance decisions and few if any of the procedural decisions

	Procedure				Performance			
	Teacher	Student			Teacher	Student		
	N	N		%	N	N		%
S I	(14) 4	(1) 1		(7) 20	(4) 5	(5) 11		(56) 69
S II	(8) 12	(2) 0		(20) 0	(13) 4	(11) 16		(49) 80
S III	24	2		8	4	9		69
S IV	24	0		0	3	15		83
S V	(11) 10	(3) 2		(21) 17	(2) 2	(3) 12		(60) 86
Total	74	5		6%	18	63		78%

Lesson 3--Students make approximately half of the procedural and half of performance decisions

	Procedure				Performance			
	Teacher	Student			Teacher	Student		
	N	N		%	N	N		%
S I	(9) 7	(3) 3		(25) 30	(25) 15	(4) 10		(14) 40
S II	(7) 7	(3) 4		(30) 36	(13) 14	(7) 11		(35) 44
S III	15	6		29	7	11		61
S IV	5	3		38	15	14		48
S V	5	5		50	7	10		59
Total	39	21		35%	58	56		49%

Note.* The figures in () are the supervisor's ratings on the first lesson which was retaught.

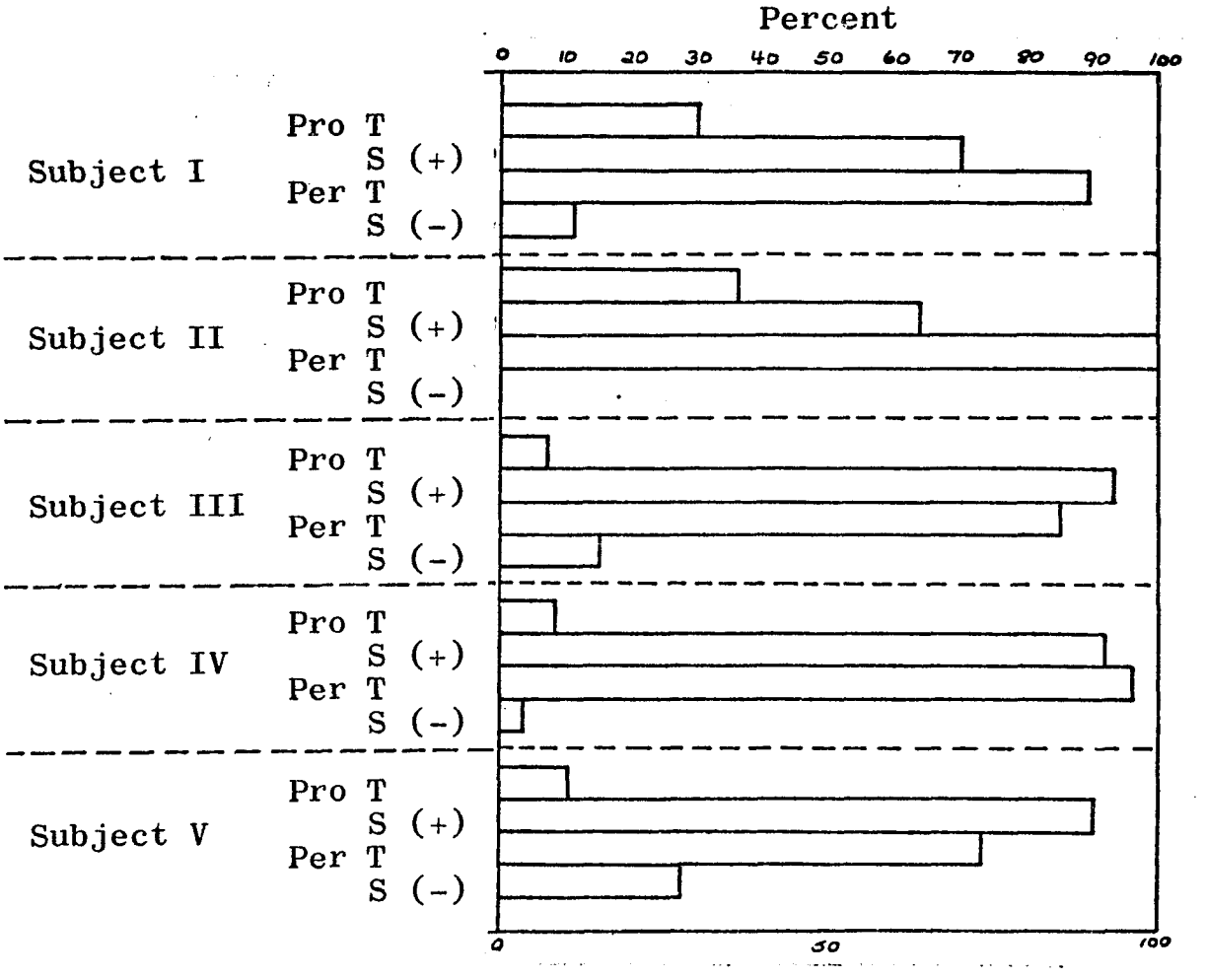

Figure 11. Percentage of decision problems in Lesson 1 for each subject's final tape according to the supervisor's rating.

Note. This lesson required the students to make the majority of the procedural decisions and few if any of the performance decisions. Pro = procedure, Per = performance, T = teacher, S = student, (+) = majority, (-) = few if any.

needed in the lesson, the majority were made in each case by the students. The subjects were also directed to teach so that the students made few if any of the performance decisions needed in the lesson, and this was also accomplished. Subject V had the highest level of student performance decisions in this lesson. This represented 27% of the performance decisions. The supervisor concluded that although this figure was higher than desired it would be acceptable. The details of this decision are presented in the discussion of Subject V at the end of this chapter. All other student performance percentages were well below the 20% standard.

Presentation of Lesson 2

The intention of Lesson 2 was for the students to make the majority of the performance decisions needed in the lesson. From Table 7 it is noted that each of the microteachers was successful in meeting this objective. When all of the performance decisions in these five lessons were added together it was found that the students made 63 of the 91 decisions, or 78%, of the total. All results were well within the simple majority of student performance decisions.

When the individual scores recorded in the procedural area were totaled, it was found that the students made only 6%, or 5 of 79, of the procedural decisions needed in all of the presentations of Lesson 2. The subjects were required to

teach this lesson so that the students made few if any of the procedure decisions needed, and the results indicated that all microteachers were successful in reaching this objective. Subject I had the highest percentage of student procedure decisions with a score of 20%, but this was within the standard and was accepted.

Lesson 2 appeared to have been more difficult for the teachers than Lesson 1. Three teachers were asked to replan and reteach this lesson. The results, as presented in Table 7, indicate that all three teachers were able to improve their teaching performance in the second teaching of this lesson.

The results of the supervisor's ratings of Lesson 2 are presented graphically in Figure 12. All decision problems recorded for each subject in each division were totaled and percentages were obtained for teacher and student decision problems. The percentage of student decisions in the performance category of each lesson ranged from a low of 69% to a high of 86%. The subjects were also successful in teaching so that the learners made few if any of the procedure decisions. The percentage of recorded procedural decisions made by students in Lesson 2 ranged from a low of zero to a high of 20%. The graphic demonstration in Figure 12 of the results of Lesson 2 clearly points out that for each subject, the students made the majority of the performance decisions and few if any of the procedure decisions.

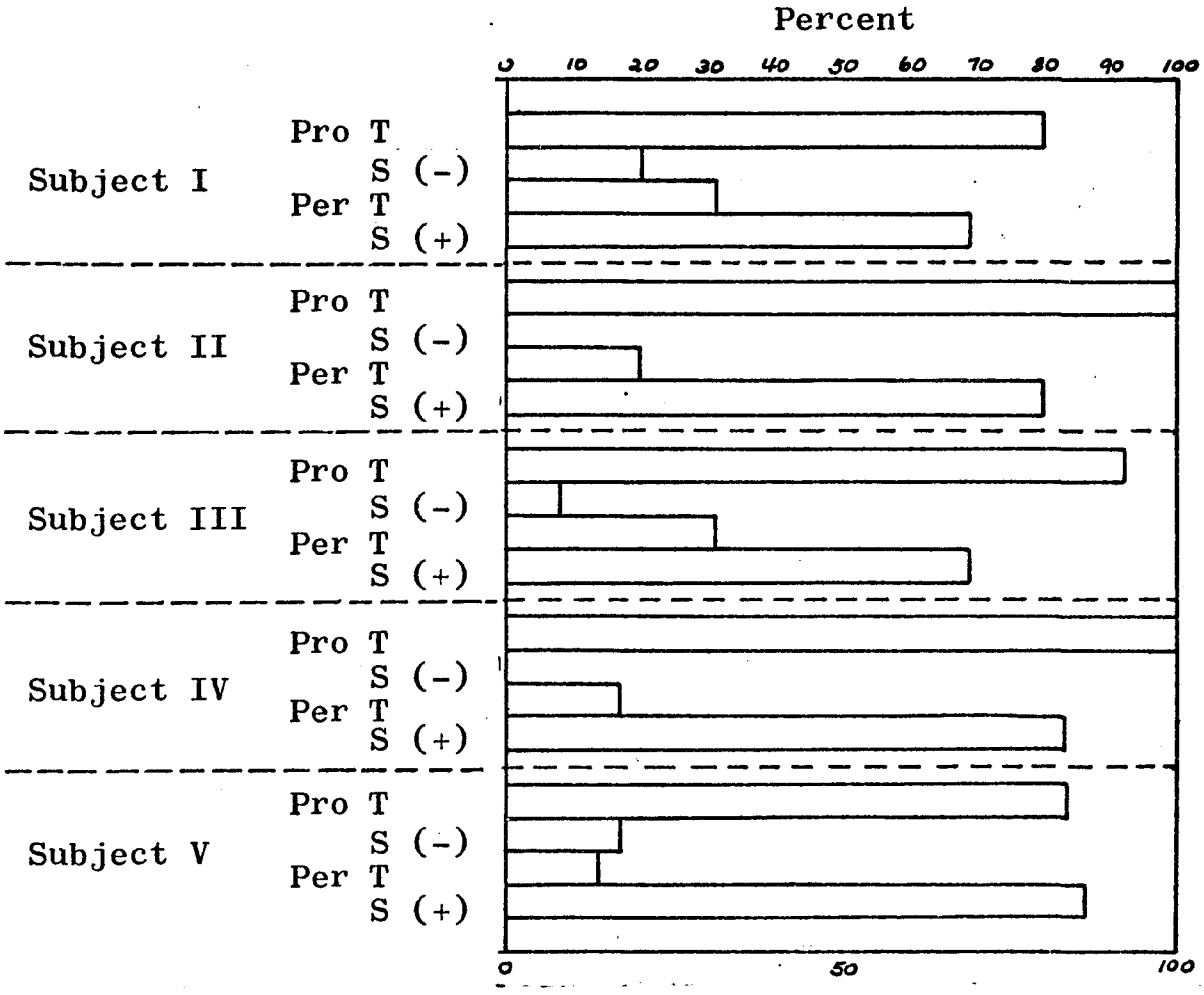

Figure 12. Percentage of decision problems in Lesson 2 for each subject's final tape according to supervisor's rating.

Note. This lesson required the student to make the majority of the performance decisions and few if any of the procedural decisions. Pro = procedure, Per = performance, T = teacher, S = student, (+) = majority, (-) = few if any.

Presentation of Lesson 3

In Lesson 3, the subjects were asked to utilize teaching strategies which would result in the students making approximately half of the needed performance decisions and half of the procedure decisions. It was decided that scores between 40% and 60% would be acceptable as meeting this standard. In Table 7 it may be noted that the subjects had difficulty meeting this standard. Only six of the ten pairings achieved scores within this range. All subjects were successful in the area of performance decisions, but only one of the subjects was able to meet the standard in the area of procedure decisions. Although they did not completely meet the standard, improvement may be seen for the two subjects who retaught this lesson. When the scores are totalled for each type of decision, it may be seen in Table 7 that the students made only 35% of the procedural, and 49% of the performance decisions needed in the lessons.

Figure 13 graphically illustrates the results of this lesson. It is evident that in most cases the procedural decisions and the performance decisions in a lesson were more equally divided between teacher and students than in either of the preceeding lessons. The widest discrepancy is noted in the area of procedural decisions for Subject III. This difference will be discussed in greater degree during the presentation of each subject's experience at the

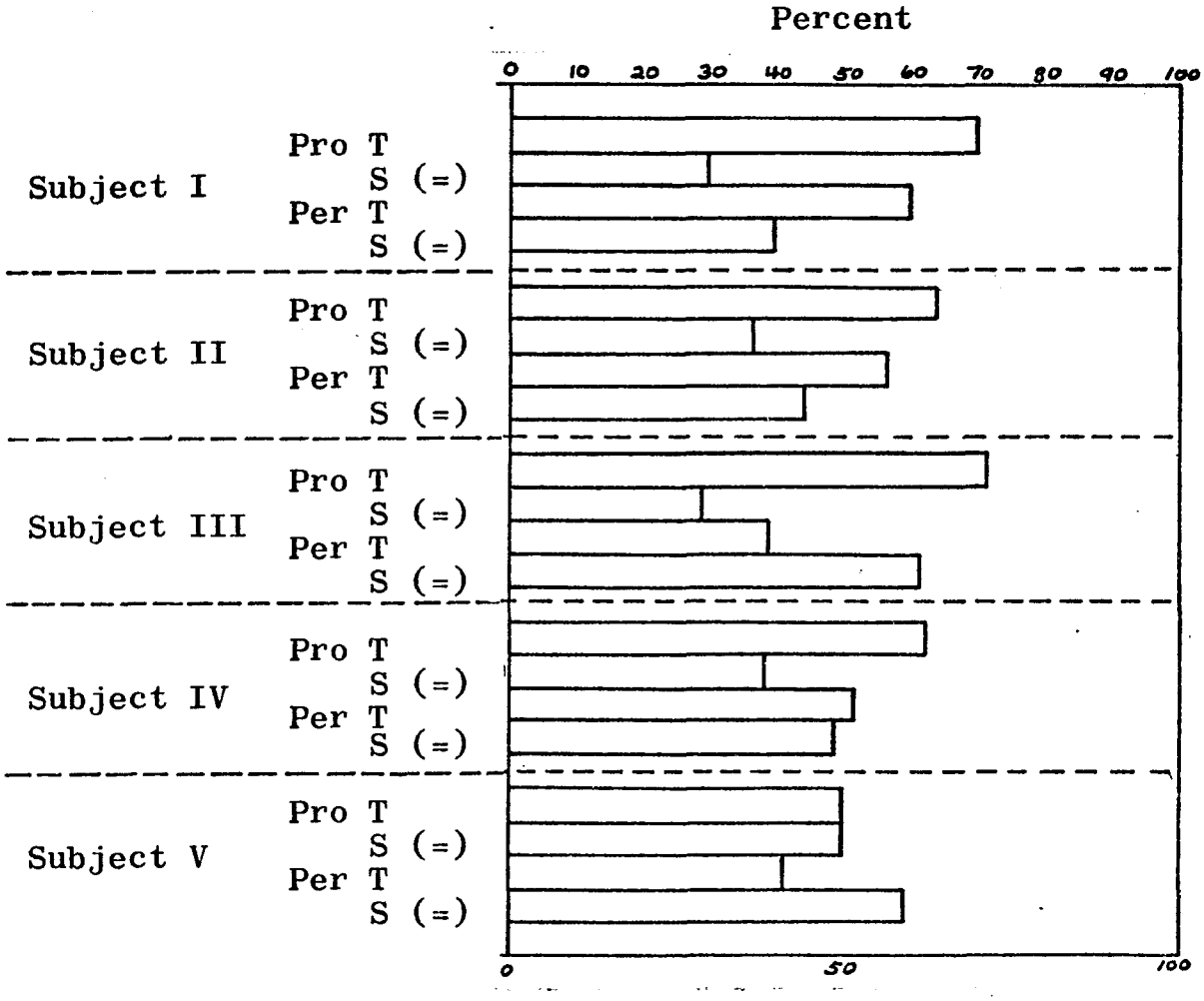

Figure 13. Percentage of decision problems in Lesson 3 for each subject's final tape according to the supervisor's rating.

Note. This lesson required the students to make approximately half of the procedural and performance decisions needed in the lesson. Pro = procedure, Per = Performance, T = teacher, S = student, (=) = approximately half.

conclusion of this chapter. Despite the difficulties encountered with this lesson, a comparison of Figures 11, 12 and 13 will illustrate the more even distribution of decisions obtained in Lesson 3.

Summary of Lesson Presentations

The results of these three lessons would indicate that the subjects were able to control their teaching behavior so that the desired objective was met in 67%, or 10 of the 15, lessons. Four of the five subjects reached the desired objective on Lesson 1, all five reached it on Lesson 2 and only one was able to completely meet the standard established for Lesson 3.

No subject met the stated objective in all three lessons but all subjects did meet the standard in two lessons. It was concluded that the subjects were able to present the lessons as directed the majority of the time.

Subject's Ability to Identify the Two Types of Decisions as they Occurred in the Microlessons

The supervisor's incidence chart rating of each final tape was compared to the subject's incidence chart rating of the same tape. Bijou's Reliability Index (1969, p. 195), was used to establish a percent of agreement score for each lesson. This rating demonstrated the subject's capability to identify, and to distinguish between the two

types of decisions as they occurred in the microlesson. This material is broken down for each lesson in Tables 8, 9, 10 and 11.

Analysis of Base Lesson

Table 8 contains the information from the subjects' incidence charts and the supervisor's incidence charts from the presentation of the Base Lesson. The subjects were directed to teach in any fashion they desired for this Base Lesson, but to use the content area which they had chosen for their total experience. The lesson was to be used as a base for later discussions as well as to serve as an orientation to the microteaching equipment and the incidence chart.

Despite the fact that this was the subjects' first real effort to utilize the incidence chart, as well as to see themselves teach on television, the results were quite good. Because of the small number of tallies in some areas, it is often difficult to obtain a high percent of agreement score, but these were accepted as strong indications of agreement that there were few decision problems of that particular kind. Table 8 shows two occasions where there was a 0-1 division between the supervisor and the subject. Both of these were viewed as a strong indication of agreement that few decisions occurred in the student procedure area even though the resulting percent of agreement score is 0.

Table 8

Percent of Agreement Scores for Subjects' and Supervisor's Rating on the Incidence Chart for the Base Lesson

	Pro T	%	Pro S	%	Per T	%	Per S	%	OLA%
S I	7	64	4	100	16	88	2	100	82
Sup	11		4		14		2		
S II	14	64	0	0	13	93	4	67	74
Sup	9		1		14		6		
S III	11	91	0	0	13	72	3	0	70
Sup	10		1		18		0		
S IV	6	67	6	33	6	43	7	88	56
Sup	4		2		14		8		
S V	15	53	5	80	6	33	15	47	47
Sup	8		4		18		7		
OLA%		67		59		65		59	64

Note. Pro = Procedure, Per = Performance, T = Teacher, S = Student, % = Percent of agreement, OLA% = Percent of overall level of agreement, S = Subject, Sup = Supervisor.

The overall level of agreement, obtained by dividing the total number of agreements by the total number of agreements plus the disagreements, is indicated on Table 8 for each subject as well as each area. It may be noted that the highest level of agreement was obtained between Subject I and the supervisor. The subjects did not appear to discriminate better in one area than another, as the overall level of agreement for each division only ranged from 59% to 67%. Utilizing the Bijou formula with all comparisons in this table, the overall level of agreement for the Base Lesson for all subjects and supervisor was 64%.

The information from Table 8 is presented graphically in Figure 14. This presentation allows for an easy comparison of the subjects' rating on the incidence chart for the Base Lesson and the supervisor's rating of that same lesson. It may be readily seen that in general there is more similarity than difference in the identity of decision problems by the supervisor and each subject for the Base Lesson. It was determined that the subjects were capable of discerning decision problems in a lesson.

Analysis of Lesson 1

Table 9 presents the results of the incidence chart tabulations made by the supervisor and the subjects for Lesson I. Once again, some problems are evident but there is a strong tendency toward general agreement. There are

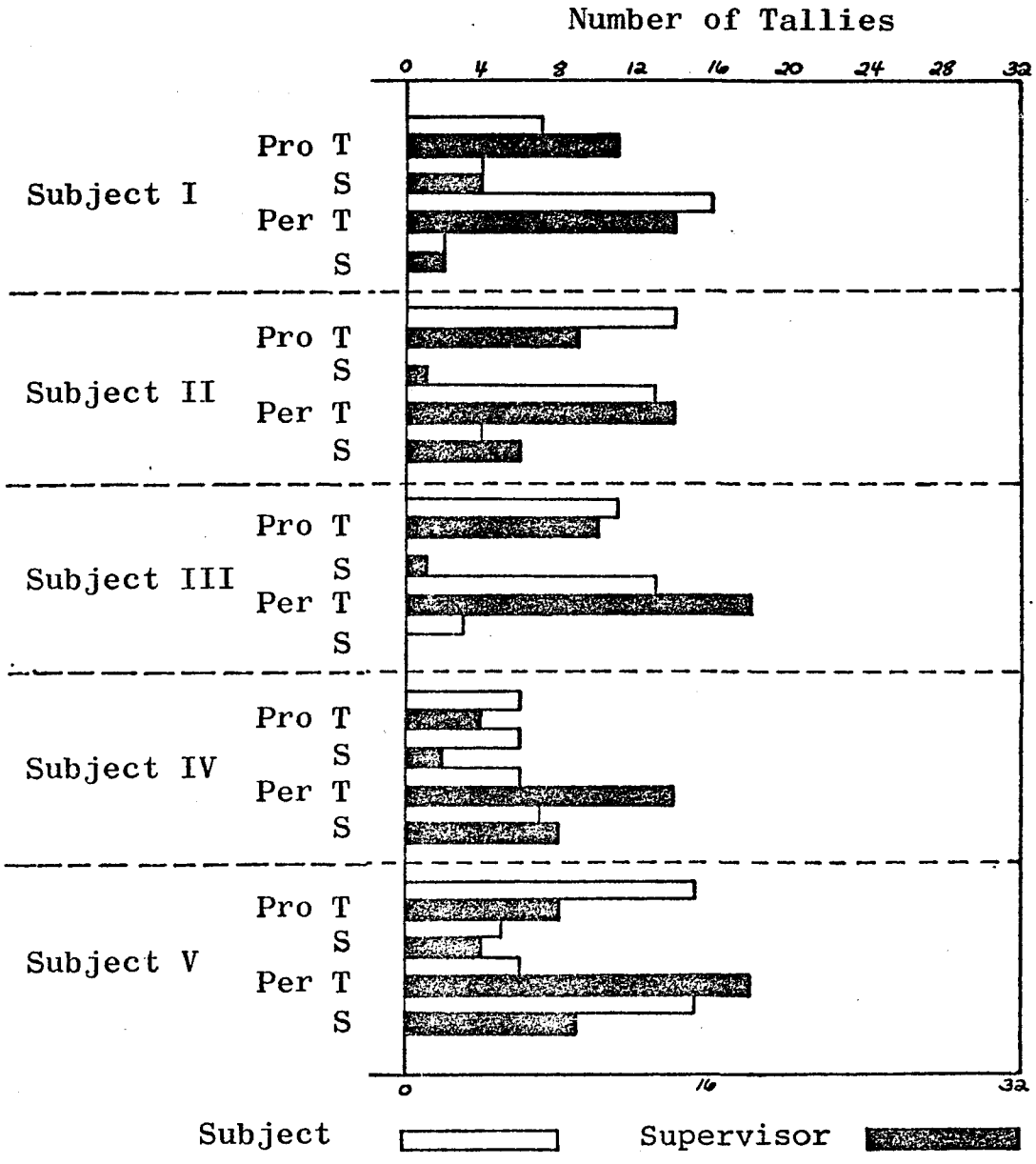

Figure 14. Comparison of subjects' and supervisor's ratings on incidence chart for Base Lesson.

Note. Pro = procedure, Per = performance, T = teacher, S = student.

Table 9

Percent of Agreement Scores for Subjects and Supervisor on Lesson 1

	Pro T	%	Pro S	%	Per T	%	Per S	%	OLA%
S I	3	100	8	88	11	65	2	100	77
Sup	3		7		17		2		
S II	0	0	5	71	32	78	0	0	70
Sup	4		7		25		0		
S III	2	50	11	85	14	82	1	33	77
Sup	1		13		17		3		
S IV	4	25	9	75	27	82	1	100	75
Sup	1		12		22		1		
S V	1	100	9	100	9	82	1	25	80
Sup	1		9		11		4		
OLA%		43		84		78		50	75

Note. Pro = Procedure, Per = Performance, T = Teacher, S = Student, % = Percent of agreement, OLA% = Percent of overall level of agreement, S = Subject, Sup = Supervisor.

five occurrences of 100% agreement. The sixth occurrence of perfect agreement results from a mutual recognition between the supervisor and Subject II that there were no student performance decisions. Computation with the Bijou formula makes this a 0% agreement.

The overall level of agreement for each subject is generally higher on this lesson than on the Base Lesson. All percentages are 70 and above, and Subject V has the highest level of agreement with a score of 80%. The subjects seemed to have difficulty discriminating in those areas where few decisions were made. It is in this area of low tallies, at any rate, that the Bijou formula seems to underestimate the amount of agreement actually present. In Table 9 it is observed that the lowest overall level of agreement score is found in the area of Procedure Teacher.

When the Bijou formula is applied to the total number of agreements and disagreements in the lesson for all subject and supervisor ratings, the level of agreement is 75%. This is an increase of 11 points from the similar computation on the Base Lesson.

The information from Lesson 1 is graphically presented in Figure 15. In general there is much better agreement exhibited in this lesson than resulted from the Base Lesson.

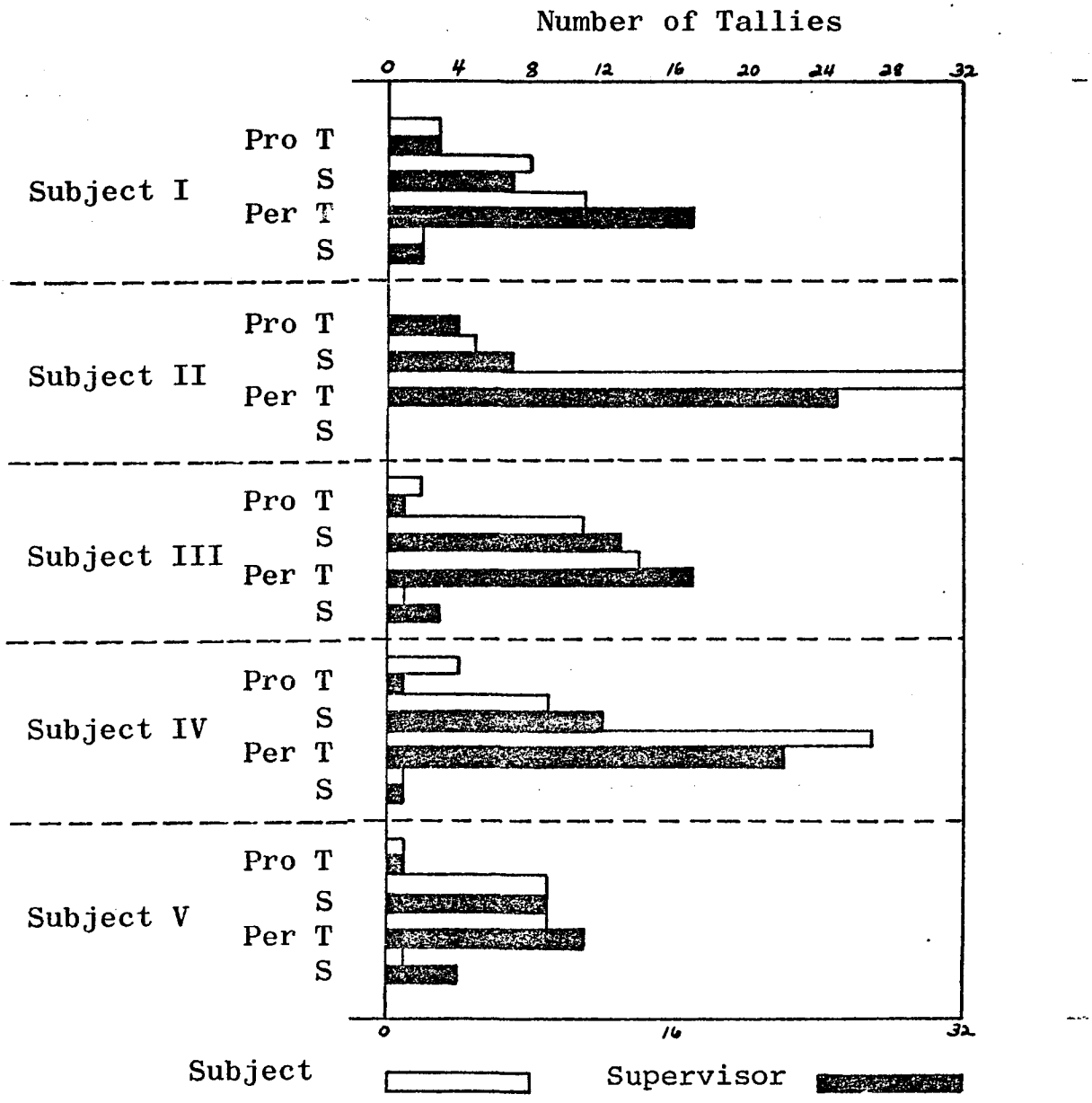

Figure 15. Comparison of subjects' and supervisor's ratings on incidence chart for Lesson 1.

Note. Pro = procedure, Per = performance, T = teacher, S = student.

Analysis of Lesson 2

Even greater improvement in the discrimination between decision problems can be seen in the results of Lesson 2. Table 10 presents the numerical assignments of decision problems and the individual and collective levels of agreement. It can be seen that the supervisor and the subjects had identical rankings in 10 of the 20 pairings. Two of these were mutual recognitions of no decision problems of a particular type and the Bijou formula (1969, p. 195) does not rank this as 100% but rather as 0% agreement. Subject III and the supervisor obtained 100 percent agreement on all four areas of the incidence chart for this lesson.

When the Bijou formula is applied to the total points of agreement and disagreement between the subjects and supervisor for this lesson, the resulting percent of agreement is 88%. This is an increase of 24 percentage points from the Base Lesson. In the earlier discussion on the subject's presentation of Lesson 2, it was brought out that the subjects had difficulty in the teaching of this lesson. This difficulty seems to have been only in the area of controlling teacher behavior, for the subjects demonstrated the highest level of recognition and identity of decision problems with this lesson.

In Figure 16 this close concurrence between supervisor's rating and subjects' rating may be seen. The perfect

Table 10

Percent of Agreement Scores for Subjects and Supervisor on Lesson 2

	Pro T	%	Pro S	%	Per T	%	Per S	%	OLA%
S I	4	100	1	100	2	40	6	55	62
Sup	4		1		5		11		
S II	12	100	0	0	3	75	15	94	94
Sup	12		0		4		16		
S III	24	100	2	100	4	100	9	100	100
Sup	24		2		4		9		
S IV	29	83	0	0	4	75	16	94	86
Sup	24		0		3		15		
S V	9	90	1	50	3	67	12	100	89
Sup	10		2		2		12		
OLA%		92		80		70		89	88

Note. Pro = Procedure, Per = Performance, T = Teacher, S = Student, % = Percent of agreement, OLA% = Percent of overall level of agreement, S = Subject, Sup = Supervisor.

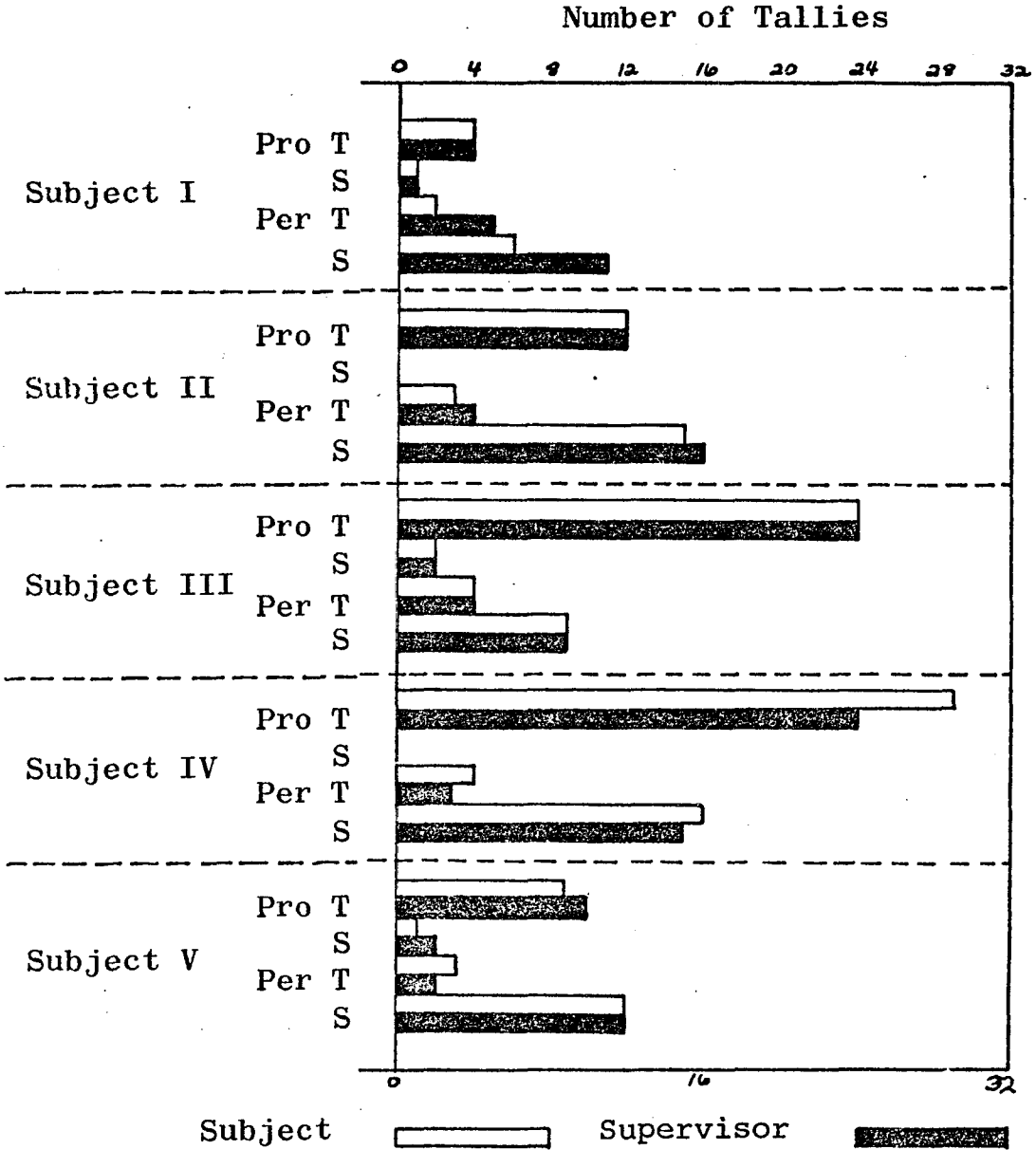

Figure 16. Comparison of subjects' and supervisor's ratings on incidence chart for Lesson 2.

Note. Pro = procedure, Per = performance, T = teacher, S = student.

relationship for all divisions between Subject III and the supervisor on this lesson was unusual. There were six other cases of perfect agreement with individual divisions which may be noted on this chart. The greatest difference in any division of the lesson is only five points.

Analysis of Lesson 3

The subjects had greater difficulty with Lesson 3 than with Lesson 2. Although there were no points of zero level of agreement as there had been in the other lessons, the overall level of agreement, which had been rising in preceeding lessons, dropped to 80%. The numerical assignment of decision problems, and the individual and collective level of agreement scores are presented in Table 11. It is seen that the supervisor and the subjects achieved 100% level of agreement on one-fourth of the pairings resulting from this lesson. Subject III again had the highest overall level of agreement with a score of 95%. As is consistent with all lessons, the subjects did not appear to discriminate any better in one decision area than another. The level of agreement for the four areas in this lesson was relatively high and was from 77% to 85%.

In Figure 17 a comparison is made between the subjects' and supervisor's rankings of decision problems in the lesson. The general level of agreement may be seen in this figure by comparing the supervisor's score with the

Table 11

Percent of Agreement Scores for Subjects and Supervisor on Lesson 3

	Pro T	%	Pro S	%	Per T	%	Per S	%	OLA%
S I	9	78	6	50	14	93	16	63	74
Sup	7		3		15		10		
S II	5	71	3	75	13	93	13	85	84
Sup	7		4		14		11		
S III	14	93	6	100	8	88	11	100	95
Sup	15		6		7		11		
S IV	5	100	3	100	24	63	15	93	79
Sup	5		3		15		14		
S V	4	80	5	100	4	57	4	40	63
Sup	5		5		7		10		
OLA		85		83		78		77	80

Note. Pro = Procedure, Per = Performance, T = Teacher, S = Student, % = Percent of agreement, OLA% = Percent of overall level of agreement, S = Subject, Sup = Supervisor.

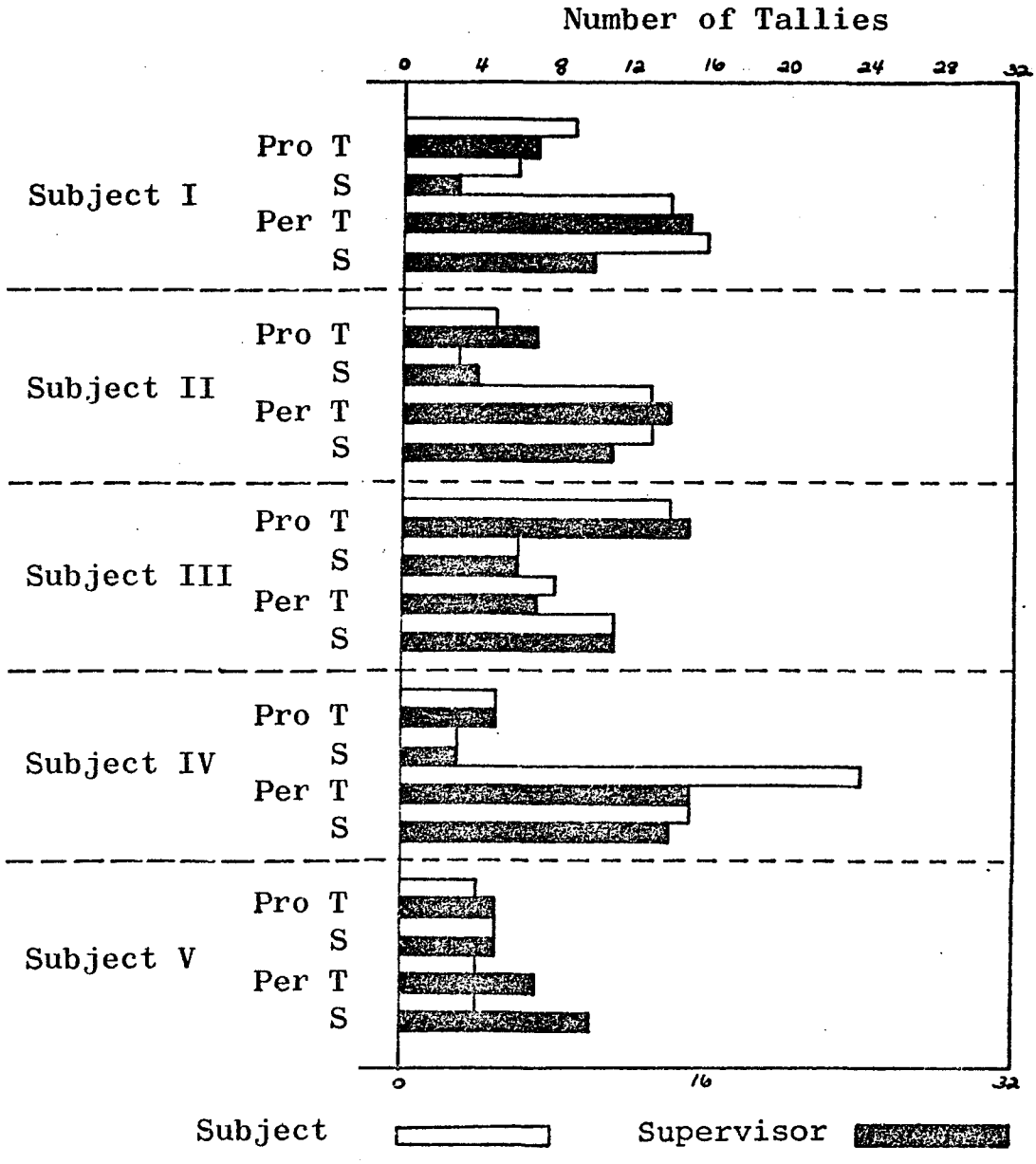

Figure 17: Comparison of subjects' and supervisor's ratings on incidence chart for Lesson 3.

Note. Pro = procedure, Per = performance, T = teacher, S = student.

subject's score for each division of the lesson. The greatest difference, nine points, may be noted with Subject IV.

Overall Analysis of Lessons

When the numerical difference between the subjects' scores and the supervisor's scores for each lesson is divided by the number of comparisons per lesson, an average difference for each lesson is obtained. For instance, there are 67 points of disagreement in the 20 comparisons in the Base Lesson. The average difference for each comparison in the Base Lesson is therefore 3.4. This average difference improves to 2.2 for Lesson 1, and an even greater improvement is noted in Lesson 2. The average difference between the supervisor's tally and the subject's tally on the incidence chart for Lesson 2 was only 1 point per comparison. The difficulties encountered with Lesson 3 cause the average number of differences between supervisor's rating and subject's rating to increase to 2 points per comparison.

This analysis supports the data presented for each lesson which indicated that the highest overall level of agreement between supervisor and subject was found in Lesson 2. This overall level of agreement score was 88%. The next highest level resulted from Lesson 3 and was 80%. Following this was the level of agreement for Lesson 1,

which was 75%. The lowest overall level of agreement, and the only one below 70%, resulted from the Base Lesson. This score was only 64%. As can be seen from these figures, the subjects' ability to identify decision problems improved with each lesson. It is the opinion of this writer that the regression noted in all computations related to Lesson 3 was due primarily to pressures of time on the subjects. This last lesson was completed just as the professional semester ended and the subjects were taking final tests and preparing to leave for student-teaching assignments.

The overall level of agreement scores indicate that the subjects could, in fact, distinguish between the types of decision problems presented in each of the lessons.

Presentation of Individual Subjects

The subjects selected for this study were all senior physical education majors enrolled in Education 357, Methods of Teaching Physical Education. This class was taught by the supervisor and there was commonality in the material presented in the class and how the subjects were asked to perform in this study. The five subjects, four females and one male, were in the professional half semester immediately prior to their student-teaching experience. The professional half semester is seven and a half weeks long and the subjects were all taking the same series of courses during this time.

This half semester, or Professional Block as it is known, is considered one of the most demanding in the undergraduate career at Winthrop College. The classes meet daily and the recognition that this is the students' last semester on campus before student teaching generally creates a strong push by teachers and students alike to try to teach and learn everything that now seems so important. These factors adversely influenced some of the work done for this study by a few of the subjects. It must be noted, however, that all subjects made many sacrifices in personal time and were sincerely interested in working with the study.

Notes were kept on each subject as each progressed through the series of microteaching lessons. In addition, a questionnaire was administered at the end of the study. This questionnaire requested each subject to reflect and elabarate on feelings of difficulty or success noticed throughout the experience (see Appendix G). Each subject will be discussed individually, then the total experience will be presented in light of the feasibility of utilizing microteaching as a tool for aiding in the acquisition of a variety of teaching strategies.

Presentation of Subject I

Subject One chose volleyball as her content area for all lessons. As noted in Figure 18, she was asked to retape two of the lessons for a total of six tapings.

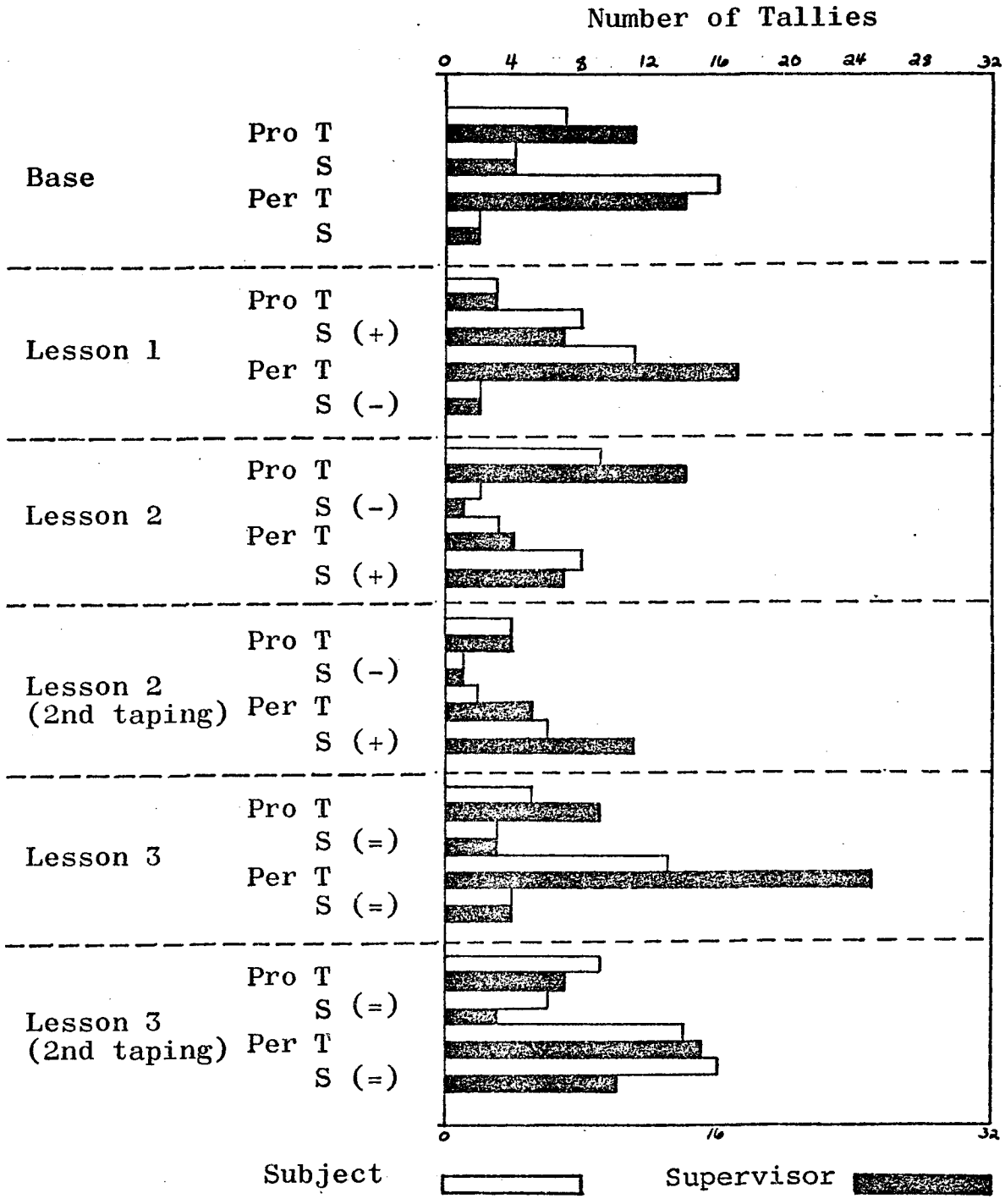

Figure 18. Lessons taught by Subject I. The amounts and kinds of decisions as recorded by Subject I and the supervisor.

Note. Lesson directions as to amount of decisions. (+) = majority, (-) = few, (=) = approximate half. Bars represent actual number of decision problems recorded.

The subject had an injured wrist and was somewhat hampered during the presentation of the Base Lesson. This injury necessitated her asking an assistant to demonstrate for her. The introduction of this peer into her lesson, plus the novelty of the taping procedure, made the subject quite nervous.

In this Base Lesson the subject was directed to utilize any teaching strategies she desired in the presentation. Subject I elected to teach so that the students made few decisions of any kind. The supervisor's rating of this lesson indicated that the students made only 6 of the 31, or 19% of the decisions in the lesson. Prior observations of this subject's teaching indicated that this Base Lesson was a relatively typical teaching experience for her.

The allocation of decision problems relative to amount and kind can be seen in Table 12. Both the subject and the supervisor agreed that the greatest number of decisions in the lesson were in the area of Teacher Performance, and the least in the area of Student Performance. The subject and the supervisor attained 100% level of agreement on two of the areas. The subject underrated the number of procedural decisions made by the teacher and this resulted in the lowest rating of 64% agreement. When the Bijou formula is applied to the total number of agreements

Table 12

Scores and Percents of Agreement for Subject I and Supervisor on all Six of Subject's Lessons

		Pro T	%	Pro S	%	Per T	%	Per S	%	OLA%
Base	Sub	7	64	4	100	16	88	2	100	82
	Sup	11		4		14		2		
Lesson 1	Sub	3	100	8	88	11	65	2	100	77
	Sup	3		7		17		2		
Lesson $2_{(1)}$	Sub	9	64	2	50	3	75	6	83	69
	Sup	14		1		4		5		
Lesson $2_{(2)}$	Sub	4	100	1	100	2	40	6	55	62
	Sup	4		1		5		11		
Lesson $3_{(1)}$	Sub	5	56	3	100	15	60	4	100	66
	Sup	9		3		25		4		
Lesson $3_{(2)}$	Sub	9	78	6	50	14	93	16	63	74
	Sup	7		3		15		10		
OLA%*			88		73		73		62	72*

Note. Pro = Procedure, Per = Performance, S = Student, T = Teacher, OLA% = Percent of overall level of agreement, Sub = Subject, Sup = Supervisor. *These OLA percents are based only on three accepted lessons, i.e., Lesson 1, Lesson $2_{(2)}$, and Lesson $3_{(2)}$.

and disagreements for this lesson, the overall level of agreement is 82% (Bijou 1969, p. 195).

In Lesson 1 the subject was asked to teach so that the students made the majority of the procedural decisions and few if any of the performance decisions needed in the lesson. In figure 18 it may be observed how the subject accomplished this objective. The supervisor's incidence chart rating indicated that the students in the lesson made 70%, or 7 of 10 of the procedural, and only 11%, or 2 of 19 of the performance decisions. The subject was generally quite comfortable with this lesson and commented in response to the questionnaire, that this was the easiest lesson for her to teach.

The subject and the supervisor generally had a high level of agreement on the results of their individual tallies of this lesson. Note in Table 12 that there were two points of perfect agreement and the lowest level of agreement was 65%. The total number of agreements and disagreements in Lesson 1 resulted in an overall percent of agreement score of 77%. The greatest difference was in the area of performance teacher which resulted in a six point difference, and a percent of agreement score of 65%.

Subject I had greater difficulty with Lesson 2 than either of the preceeding lessons. She commented on the questionnaire that the model tape for this lesson was the

most difficult for her to understand. The subject matter of the tape (lacrosse) was strange to her and she had difficulty determining the differences in procedural and performance type decisions as she observed them.

The numerical results of Lesson 2 can be seen in Table 12. The subject accomplished the requirements for the procedural area, and the teaching strategies she utilized resulted in the students making 56% of the performance decisions. Although this was a majority of student decisions, the supervisor decided to ask this subject to reteach this lesson because there did not seem to truly be a firm base of understanding of student performance decision making. On the second taping of Lesson 2, Subject I improved in the area of student decisions by teaching so that the students made 69% (11 of 16) of the performance decisions and yet only 20% (1 of 4) of the procedural decisions. This lesson continued to be difficult for this subject and there was some question as to whether or not the subject ever truly understood how to use teaching strategies which would result in performance decisions being made by the learner.

Table 12 shows the percent of agreement between the supervisor and the subject for Lesson 2. Both tapings of Lesson 2 resulted in some low agreement scores. They were often, however, where few tallies had occurred. The lowest point of agreement for all encounters between the

supervisor and this subject was 40% and resulted from a three-point difference. There were two incidences of perfect agreement on this lesson, but the overall level of agreement, 62%, was the lowest of all this subject's lessons.

In Lesson 3, the subject was directed to utilize teaching strategies which would result in the students making approximately half of the procedural and half of the performance decisions needed in the lesson. Subject I did not accomplish this objective in her first attempt so it was decided to reteach this lesson. The subject was under extreme pressures of time, as this lesson was filmed at the very end of the half semester. She commented on the questionnaire that she was unable to view the model tape but did use the written descriptor in preparing her lesson. Although the second teaching of Lesson 3 was closer to the standard, it still did not fully meet the objective. The students did make 40% (10 of 25) of the performance decisions, but only made 30% (3 of 10) of the procedure decisions. Due to this subject's frustration over time pressures it was decided not to reteach this lesson.

As noted in Figure 18 and in Table 12, the first teaching of this lesson resulted in a heavy incidence of performance decisions made by the teacher. On the second teaching of the lesson, the subject was able to more nearly

equalize the decision problems. According to the supervisor's incidence chart, the students made 30% (3 of 10) of the procedural decisions and 40% (10 of 25) of the performance decisions.

The subject and the supervisor did not achieve a high level of agreement on the second taping of the third lesson. Application of the Bijou formula to the points of agreement and disagreement between the supervisor and the subject for this lesson resulted in a 74% overall level of agreement. Part of the difficulty in the lesson stemmed from the subject's confusion over how to tally verbal responses. The directions to the incidence chart indicate that only movement responses, or those verbalized responses accompanied by movement, will be tallied. The subject tended to tally several verbal responses which resulted primarily from review kinds of questions. This tended to distort the subject's tally.

In response to the questionnaire, the subject indicated that she felt the experience had been exciting and commented on her new awareness of the teacher's role in decision making. She added that her recognition of a problem in the use of teaching strategies did not always indicate that she could correct it, and she felt that she tended to teach in a way that resulted in more teacher decisions than student decisions. Despite this subject's difficulty in utilizing a variety of teaching strategies,

the pictorial demonstrations of the results of her lesson as shown in Figure 18 illustrates that she did change and control her teaching behavior. Her verbal comments and written responses to the questionnaire supported the micro-teaching format, and in particular, the critique sessions.

Subject I met the stated objectives completely in two of the three lessons and met half of the standard in Lesson 3. She and the supervisor attained an overall level of agreement of 72% for the three lessons. This was the lowest overall level of agreement with any subject.

Presentation of Subject II

Subject II used Basketball as the content area for his lessons. As can be seen in Figure 19, he was asked to reteach two of his lessons for a total of six microteaching experiences. In the Base Lesson this subject utilized teaching strategies which resulted in the teacher making 70% or 23 of 30 of the decisions in the lesson. In the critique session for this lesson, the subject was a little nervous but expressed his excitement and eagerness to participate in the study.

The distribution of decision problems for the Base Lesson is presented in Table 13. The highest level of agreement, 93%, resulted from analysis of the area of teacher performance. The lowest percent of agreement was in the area of student procedure. Since this was the result of only a one-point difference (0-1), it was decided

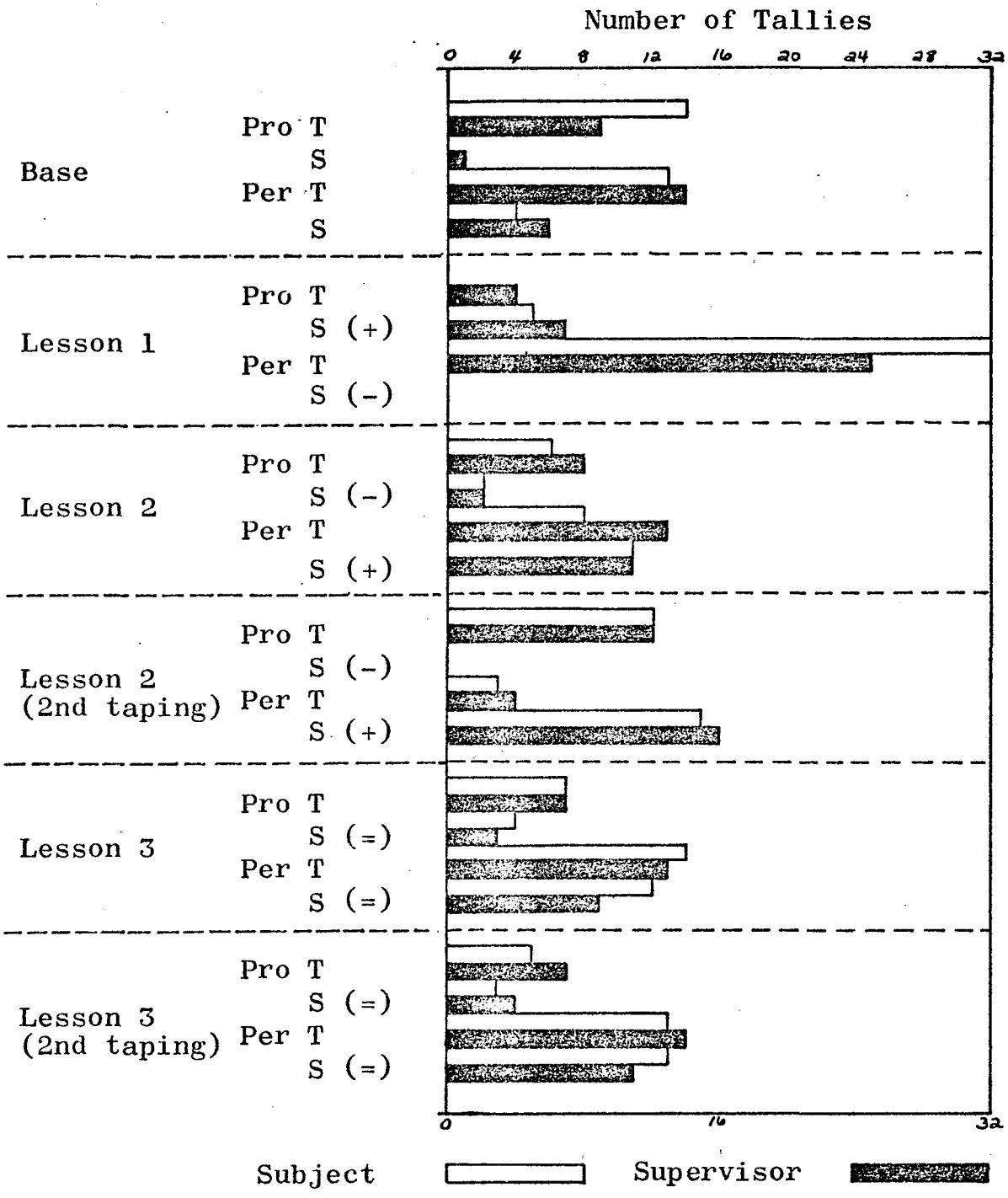

Figure 19. Lessons taught by Subject II. The amounts and kinds of decisions as recorded by Subject II and the supervisor.

Note. Lesson directions as to amount of decisions. (+) = majority, (-) = few, (=) = approximately half. Bars represent actual number of decision problems recorded.

Table 13

Scores and Percents of Agreement for Subject II and Supervisor on all Six of Subject's Lessons

		Pro T	%	Pro S	%	Per T	%	Per S	%	OLA%
Base	Sub	14	64	0	0	13	93	4	67	74
	Sup	9		1		14		6		
Lesson 1	Sub	0	0	5	71	32	78	0	0	70
	Sup	4		7		25		0		
Lesson $2_{(1)}$	Sub	6	75	2	100	8	62	11	100	79
	Sup	8		2		13		11		
Lesson $2_{(2)}$	Sub	12	100	0	0	3	75	15	94	94
	Sup	12		0		4		16		
Lesson $3_{(1)}$	Sub	7	100	4	75	14	93	10	70	86
	Sup	7		3		13		7		
Lesson $3_{(2)}$	Sub	5	71	3	75	13	93	13	85	84
	Sup	7		4		14		11		
OLA%*			74		73		82		90	81*

Note. Pro = Procedure, Per = Performance, S = Student, T = Teacher, OLA% = Percent of overall level of agreement, Sub = Subject, Sup = Supervisor. *These OLA percents are based only on the three accepted lessons.

it did not indicate a lack of understanding on the part of the subject. When the Bijou formula is applied to the total number of agreements and disagreements for this lesson, the overall level of agreement is 74% (1969, p. 195).

The teaching strategies utilized for Lesson 1 were to result in a teaching encounter where the students made the majority of the procedural decisions and few if any of the performance decisions. Table 13 contains the results of this lesson. It is noted that the supervisor recorded that 64%, (7 of 11) of the procedural decisions were made by the students, and none of the performance decisions were made by students.

During the critique session the supervisor and the subject discovered a problem relating to numbers 4 and 9 on the incidence chart. Number 4 deals with the time or duration of an activity and is considered a procedure decision. Number 9 is a performance decision relating to evaluation. The subject had confused these areas, and therefore in planning the lesson, used strategies intended to be evaluative but were in fact dealing with the procedural area of time. This difficulty was evidenced in the four-point difference between the subject and the supervisor in tallying teacher procedure. Partially due to this misunderstanding, the overall level of agreement according to the Bijou formula was only 70%. This was the lowest

overall level of agreement for this subject on any lesson.

Subject II had difficulty with Lesson 2. Although he did use teaching strategies which resulted in few student procedural decision, he was not successful in teaching so that the students made the majority of the performance decisions. Table 13 shows that although the lesson did not reach the desired objective, there was a higher level of agreement between the supervisor and the subject than in the previous lessons. There were two occurrences of 100% agreement and the overall level of agreement, as figured by the Bijou formula, was up to 79% (1969, p. 195).

The second taping of Lesson 2 was an exciting event for Subject II. He commented that in preparation for the lesson he had resolved some of the problems disturbing him about prior lessons. He had been concerned about not being able to spend equal time with each student, but had realized that this was not necessarily possible, or even desirable, in the time span of these minilessons. He also decided that teaching so that students made performance decisions related closely to self-actualization in students, and this was something he felt was quite important. He therefore was eager to reteach Lesson 2.

The numerical results of this retaping may be seen in Figure 19. It is obvious that this lesson followed very

closely the objectives which had been established for it. Subject II utilized teaching strategies which resulted in the students making 16 of the 20, or 80% of the performance decisions and none of the procedural decisions. Table 13 demonstrates the percent of agreement between the subject and the supervisor for the retaping of Lesson 2. The 0% agreement in the area of procedural student was the result of perfect agreement between the supervisor and the subject that there were no student procedural decisions made in the lesson. Therefore it may be assumed that the actual number of agreements between the supervisor and the subject was better than indicated by percent scores. Utilizing Bijou's formula with the total number of agreements and the total number of disagreements in this lesson, the resulting overall level of agreement was 94%. This was the highest overall level of agreement for any of this subject's lessons.

In Lesson 3, the subject was directed to utilize teaching strategies which would result in the students making approximately half of the procedural and half of the performance decisions needed in the lesson. Subject II approached this lesson with a feeling of confidence which he shared with the supervisor by telling her that he felt that this was the way he usually taught. Despite this feeling of confidence, the results of the critique session indicated that Subject II would need to reteach the lesson

in order to better meet the stated objective. Table 13 shows that the students made only 30% (3 of 10) of the procedural and 35% (7 of 20) of the performance decisions. There was generally a high level of agreement between the supervisor's rating and the subject's rating on this lesson. The lowest percent of agreement was 70%, and the highest was 100%. Utilizing Bijou's formula, the overall level of agreement was 86%.

The second teaching of Lesson 3 resulted in somewhat greater equalization of decision problems. Subject II utilized teaching strategies which allowed the students to make 36% (4 of 11) of the procedural and 44% (11 of 25) of the performance decisions. Although the percentage of student-made procedure decisions did not meet the standard established, it was decided that improvement had been made from the first teaching of this lesson, and due to the pressures of time the subject would not be asked to reteach this lesson. The scores, and the improvement on the second lesson, may be noted in Figure 16. There were some differences in the tallies done by the supervisor and the subject. The percent of agreement ranged from a low of 71% to a high rating of 93% as can be seen in Table 13.

Subject II commented in response to the questionnaire that these microteaching experiences were not only enjoyable, but that he felt they were of great personal benefit. He wrote that this experience had helped him to

become conscious of how he taught. This awareness can be traced through Figure 19 which graphically demonstrates the results of varying teacher behavior.

This subject met the stated objectives completely in two of the three lessons and met half of the standard in Lesson 3. Subject II and the supervisor attained an overall level of agreement of 81% for all three lessons.

Presentation of Subject III

Subject III elected Basketball as the content for her lessons. As seen in Figure 20, she was asked to reteach one of her lessons; therefore, she taught a total of five microlessons.

Subject III chose very teacher-directed strategies for her Base Lesson. Table 14 contains the results of this lesson as tallied by both supervisor and subject. Using the supervisor's rating it can be seen that Subject III taught so that she, as teacher, made 28 of 29, or 97% of the decisions in the lesson. Prior experiences with this subject would indicate that this lesson was reflective of her normal teaching behavior. The supervisor and the subject had a 70% level of agreement on the incidence chart tallies for this lesson.

The directions for Lesson 1 required the teacher to use teaching strategies which result in the students making the majority of the procedural decisions and few if any of the performance decisions in the lesson. The

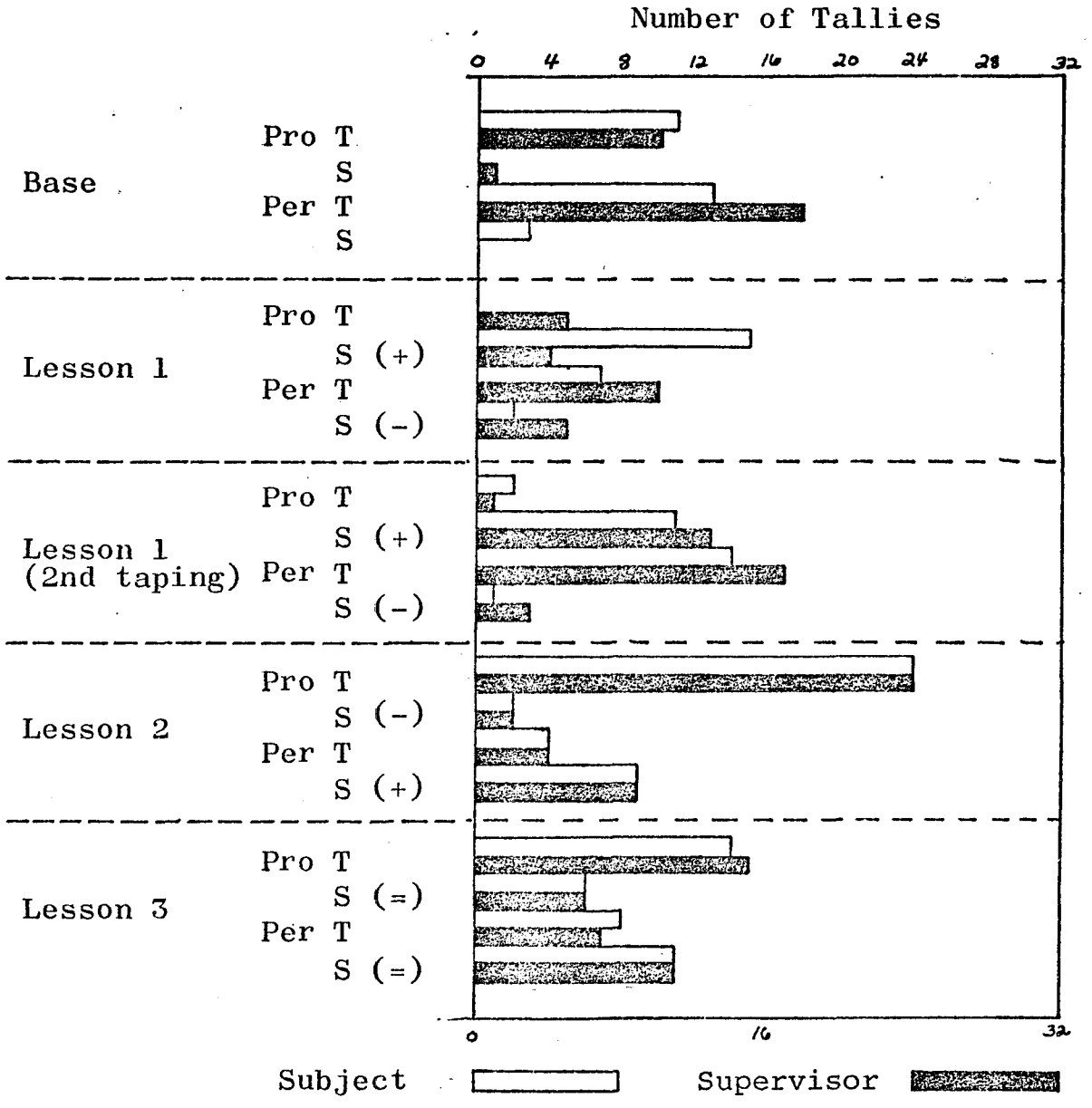

Figure 20. Lessons taught by Subject III. The amounts and kinds of decisions as recorded by Subject III and the supervisor.

Note. Lesson directions as to amount of decisions. (+) = majority, (-) = few if any, (=) = approximately half. Bars represent actual number of decision problems recorded.

Table 14

Scores and Percents of Agreements for Subject III and Supervisor on all Five of Subject's Lessons

		Pro T	%	Pro S	%	Per T	%	Per S	%	OLA%
Base	Sub	11	91	0	0	13	72	3	0	70
	Sup	10		1		18		0		
Lesson $1_{(1)}$	Sub	0	0	15	27	7	70	2	40	39
	Sup	5		4		10		5		
Lesson $1_{(2)}$	Sub	2	50	11	85	14	82	1	33	77
	Sup	1		13		17		3		
Lesson 2	Sub	24	100	2	100	4	100	9	100	100
	Sup	24		2		4		9		
Lesson 3	Sub	14	93	6	100	8	88	11	100	95
	Sup	15		6		7		11		
OLA%*			95		91		86		91	91*

Note. Pro = Procedure, Per = Performance, S = Student, T = Teacher, OLA% = Percent of overall level of agreement, Sub = Subject, Sup = Supervisor. *These OLA percents are based only on the three accepted lessons.

results of Subject III's first teaching of Lesson 1 may be seen in Figure 20. The discussion in the critique session for this lesson centered around the fact that although the subject had generally accomplished the directions relative to procedure decisions, neither the subject nor the supervisor was satisfied with the area of performance decisions. It was agreed that she had not really involved herself with the skill performance of her students.

Table 14 illustrates the difficulty the supervisor and subject had in tallying this lesson. There were several areas of disagreements and the percent of agreement ranged from a low of 0%, representing a 0-5 difference, to a high of only 70%. The overall level of agreement, figured through use of the Bijou formula (1969, p. 195), was only 39%. This was the lowest overall level of agreement of any of the lessons recorded and tallied for this study. At the end of the critique session the subject expressed a feeling that she understood better both the incidence chart and her role as a teacher. Although the subject was extremely concerned over outside pressures on her time, she agreed to reteach this lesson.

The results of this second teaching may be seen in Figure 20. In this lesson the subject used teaching strategies which resulted in the students making 93% (13 of 14) of the procedure, and only 15% (3 of 20) of the performance decisions in the lesson. The overall level of

agreement between the supervisor and the subject was up to 77%.

Subject III was very much at ease as she approached Lesson 2. Figure 20 illustrates how well this lesson met the objectives. As directed, the subject taught so that the students made the majority, 9 of 13, or 69% of the performance decisions and few, 2 of 26, or 8% of the procedural decisions. The critique session revealed the only perfect agreement in any lesson for any subject. All four areas had a 100% level of agreement. The subject was extremely excited and eager to discuss this lesson. She commented on her excitement over being able to control her teaching behavior in this way, and stated that teaching so that students made decisions was a new experience for her.

Lesson 3 partially met the objectives. The subject was able to teach so that the students made 62% (11 of 18) of the performance decisions, but they made only 29% (6 of 21) of the procedure decisions. During the critique session the subject and the supervisor realized that the difficulty stemmed largely from repetition of a timing direction during a drill which over-weighted the teacher's action in the area of procedure decisions.

The percent of agreement was high in each of the four divisions and ranged from 88% to 100%. The overall level of agreement was 95%. Due to this high level of

agreement and to the pressures of time on this subject, it was decided not to retape the lesson although the percentage of student and teacher procedural decisions was not as equal as desired.

Subject III commented on the questionnaire that Lesson 3 was the easiest for her to teach. Although she felt that she was "naturally dominating" and liked to make decisions herself, she had learned the value of sharing decision making and therefore found it easy to equalize this task.

Subject III completely met the stated objectives in two of the three lessons and met half the standard for Lesson 3. The subject and the supervisor reached an overall level of agreement of 91% for the three lessons. This was the highest overall level of agreement attained with any subject.

Presentation of Subject IV

Subject IV chose tennis as her content area for all lessons. There was a malfunction in the recording equipment during the taping of Lesson 1. No sound was recorded from the neck microphone. The subject and the supervisor were able to immediately sit down with the taped lesson and reconstruct the verbal comments that were not clear on the tape. Although this lesson met the requested objectives and both subject and supervisor felt comfortable with the results, it was decided to retape. The lesson 1 listed in

Figure 21 is this retaped lesson. This subject was not asked to retape any lesson because it did not meet the criteria; therefore, there are only four lessons listed for this subject.

In the Base Lesson the subject used teaching strategies which resulted in a fairly equal distribution of decision problems. From the results listed in Table 15 it can be seen that the teacher made 18 of 28, or 64% of the decisions and the students made 10 of 28, or 36% of the decisions. The subject seemed relaxed and appeared to enjoy the experience although she commented later that she was very nervous prior to the taping.

The percent of agreement between the subject and the supervisor as to the allocation of decisions in the lesson was not as high as might be desired for a Base lesson. The lowest percent of agreement was 33% and the highest was 88%. Using Bijou's formula the overall level of agreement for the Base lesson was found to be 68%.

As mentioned earlier, Subject IV's teaching of Lesson 1 met the stated objective as to amount and kind of decision making, but due to a problem with the taping machinery it was retaped. The results of this second teaching are diagrammed in Figure 18. It may be seen that the students made 92% (12 of 13) of the procedural decisions and only 4% (1 of 24) of the performance decisions. The subject commented on the questionnaire that

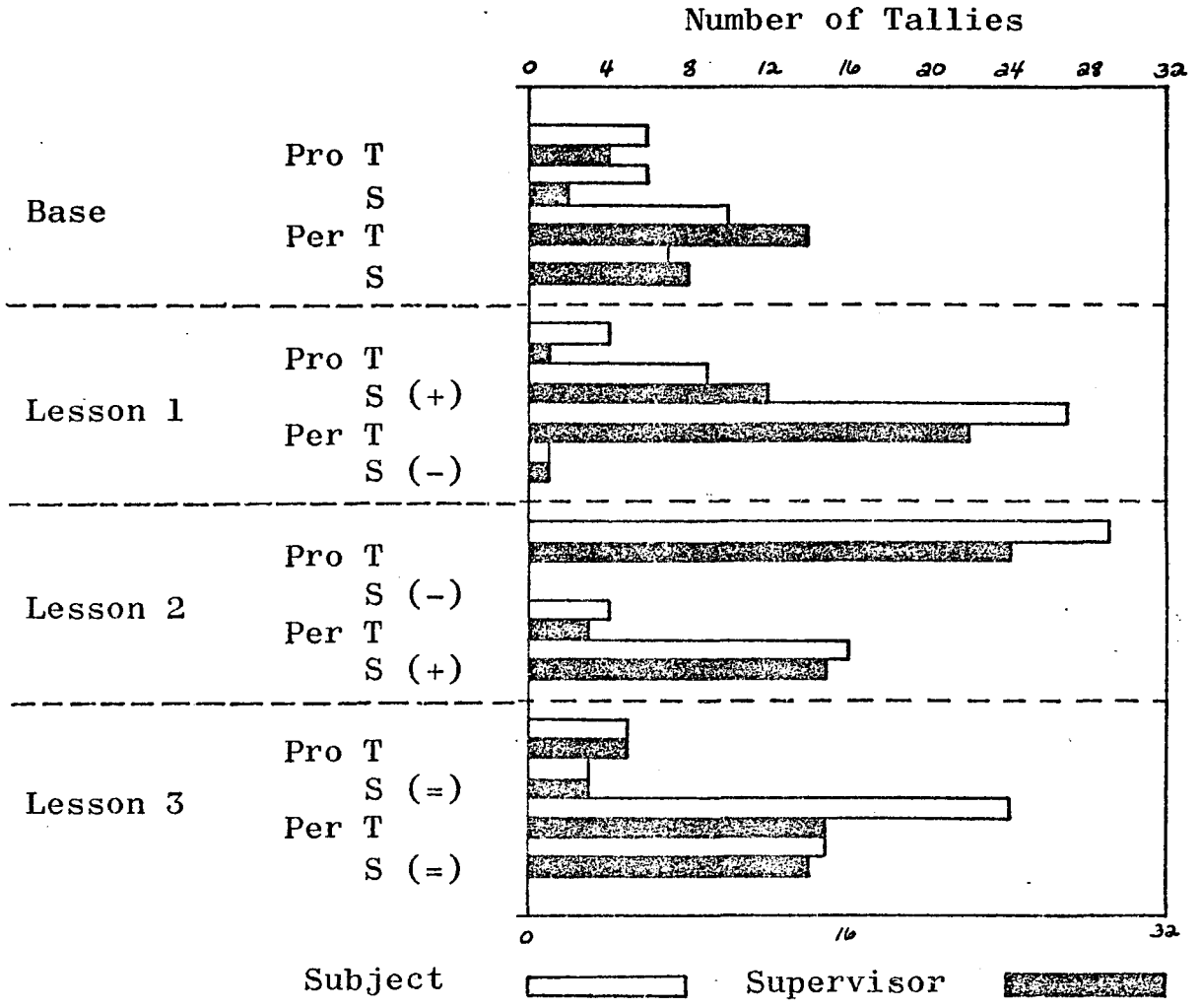

Figure 21. Lessons taught by Subject IV. The amounts and kinds of decisions as recorded by Subject IV and the supervisor.

Note. Lesson directions as to amount of decisions. (+) = majority, (-) = few if any, and (=) = approximately half. Bars represent actual number of decision problems recorded.

Table 15

Scores and Percents of Agreement for Subject IV and Supervisor on all Four of Subject's Lessons

		Pro T	%	Pro S	%	Per T	%	Per S	%	OLA%
	Sub	6		6		10		7		
Base			67		33		71		88	68
	Sup	4		2		14		8		
	Sub	4		9		27		1		
Lesson 1			25		75		82		100	75
	Sup	1		12		22		1		
	Sub	29		0		4		16		
Lesson 2			83		0		75		94	86
	Sup	24		0		3		15		
	Sub	5		3		24		15		
Lesson 3			100		100		63		93	79
	Sup	5		3		15		14		
OLA%*			79		80		73		94	80*

Note. Pro = Procedure, Per = Performance, S = Student, T = Teacher, OLA% = Percent of overall level of agreement, Sub = Subject, Sup = Supervisor. *These OLA percents are based only on the three accepted lessons.

this lesson was the easiest for her to teach and that the model tape for this lesson was of the greatest assistance.

The agreement level between the supervisor and the subject was higher for this lesson than in the Base Lesson. The percent of agreement on the divisions of decision making ranged from a low of 25%, reflecting only a three-point difference, to a perfect rating of 100%. The overall rating for this lesson was 75%.

Subject IV was successful with the teaching strategies in Lesson 2. She taught so that the students made 83% (3 of 18) of the performance decisions in the lesson and 0% (0 of 24) of the procedural decisions. The results of this lesson are illustrated in Figure 21. The subject commented during the critique session that her greatest difficulty in this lesson had been in having to remember to not allow the students to make procedural decisions.

As noted in Table 15, the percent of agreement between supervisor and subject for Lesson 2 had a low of 0%, which reflected a perfect agreement of 0-0, and a high of 94%. The overall level of agreement for this lesson as figured using the Bijou formula was 86%.

Subject IV expressed the greatest difficulty in the planning and the teaching of Lesson 3. She stated on the questionnaire that the modelling tape for this lesson did not help her and she actually became more confused by watching it. Despite her expressed difficulty with this

lesson, the results were generally acceptable. As directed, the subject taught so that the students made 48% (14 of 29) of the performance decisions, as recorded by the supervisor, but only 38% (3 of 8) of the procedural decisions. The subject commented on the questionnaire that she felt that perhaps the general feeling of confusion and frustration permeating the last week of the Block semester had influenced her feelings for Lesson 3. The third lesson was a rushed experience for all the subjects, but Subject IV seemed the most upset by it. Again, due to these pressures of time, it was decided not to retape Lesson 3.

The overall level of agreement for Lesson 3 was 79% and the individual percent of agreement scores were spread between 63% and 100%. This subject's ability to control her teaching behavior is quite evident in the results of these three lessons, yet the subject expressed concern that she could not see the purpose of the experience. She stated on the questionnaire that the number of students involved made this an ideal situation and she was unsure how to use these teaching skills in a more "realistic" situation.

Subject IV met the stated objective completely on two of the three lessons and met half of the standard for Lesson 3. She and the supervisor attained an overall level of agreement of 80% for all three lessons.

Presentation of Subject V

Subject V elected to use basketball as her content area for all lessons. This subject was asked to reteach one lesson for a total involvement in five microlessons. The Base Lesson for this subject was taught so that the teacher made 26 of 37, or 70% of the decisions in the lesson. The subject expressed later that she was very unsure of how to begin and therefore decided to use Task Cards. In so doing she felt that her role was more of an observer than interactant, and therefore she gave out the Task Cards and then tended to stand back and watch.

During the critique session for this lesson, the subject and the supervisor used a copy of the Task Card to mark the incidence chart before the tape started since most of the teacher directions were given in this written form. As seen in Table 16, the results of the tallies of the incidence chart show percent of agreements from 33% to 80%. The overall level of agreement, as figured using the Bijou formula (1969, p. 195), was only 47%. This was the lowest level of agreement of all the Base Lessons, and the subject agreed with the supervisor that this difficulty was largely due to the use of the Task Card.

Lesson 1, as taught by Subject V, did not completely meet the stated objectives. Figure 22 illustrates the results of this lesson. It can be observed that Subject V used teaching strategies which resulted in 90% (9 of 10) of

Table 16

Scores and Percents of Agreement for Subject V and Supervisor on all Five of Subject's Lessons

		Pro T	%	Pro S	%	Per T	%	Per S	%	OLA%
Base	Sub	15	53	5	80	6	33	15	47	47
	Sup	8		4		18		7		
Lesson 1	Sub	1	100	9	100	9	82	1	25	80
	Sup	1		9		11		4		
Lesson $2_{(1)}$	Sub	10	91	2	67	1	50	9	33	64
	Sup	11		3		2		3		
Lesson $2_{(2)}$	Sub	9	90	1	50	3	67	12	100	89
	Sup	10		2		2		12		
Lesson 3	Sub	4	80	5	100	4	57	4	40	63
	Sup	5		5		7		10		
OLA%*			83		94		71		65	77*

Note. Pro = Procedure, Per = Performance, S = Student, T = Teacher, OLA% = Percent of overall level of agreement, Sub = Subject, Sup = Supervisor. *These OLA percents are based only on three accepted lessons.

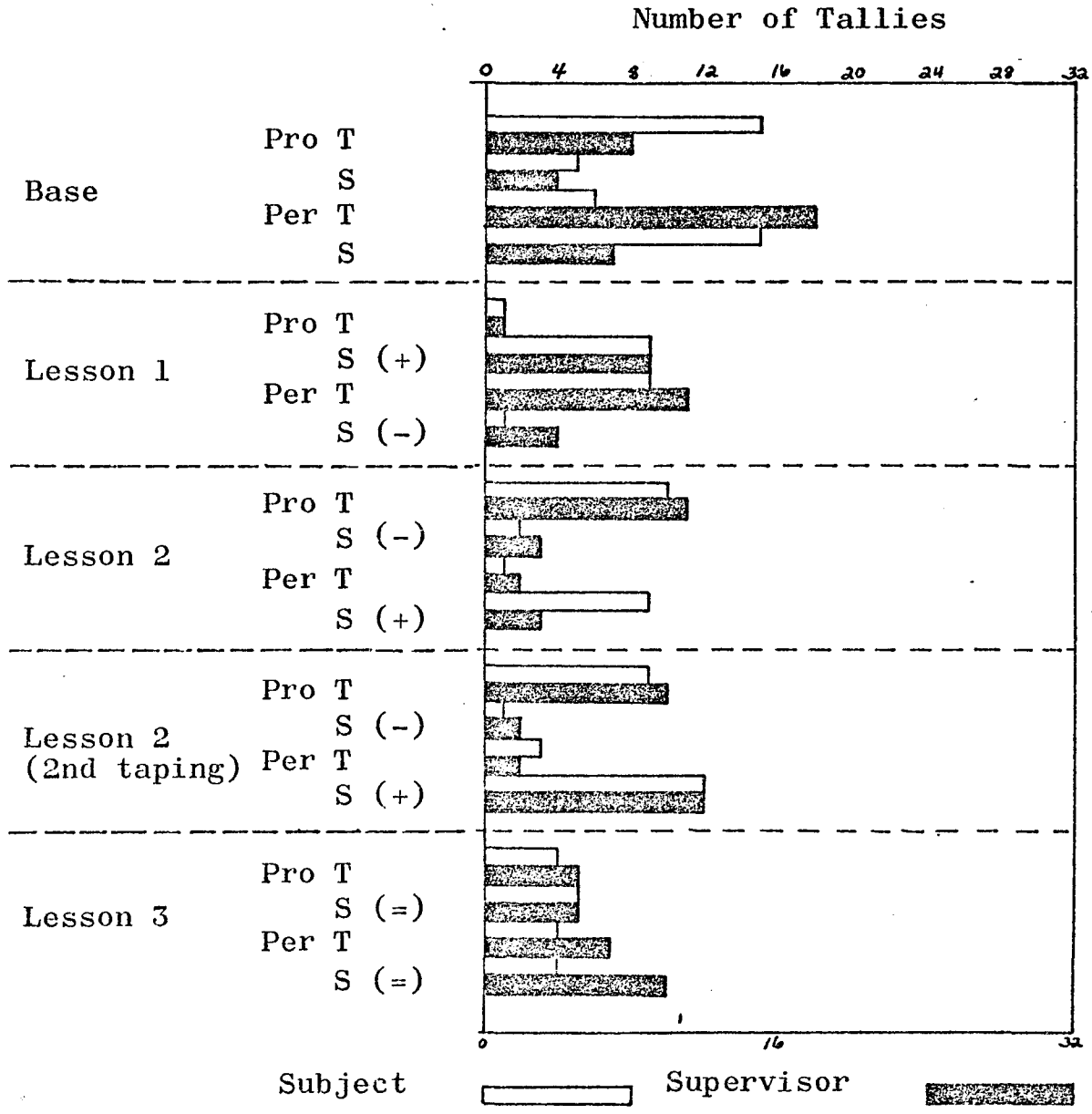

Figure 22. Lessons taught by Subject V. The amounts and kinds of decisions as recorded by Subject V and the supervisor.

Note. Lesson directions as to amount of decisions. (+) = majority, (-) = few if any, and (=) = approximately half. Bars represent actual numbers of decision problems recorded.

the procedural decisions being made by the students and only 27% (4 of 15) of the performance decisions being made by students. Although the student involvement was slightly high in the performance area, the supervisor decided against asking this subject to retape the lesson. This judgement was based upon some personal factors concerning the subject at this particular time, and the supervisor felt it would be unwise to insist upon a retaping.

The results of the ratings on the incidence charts by the supervisor and the subject for this lesson are seen in Table 16. The overall level of agreement was up to 80%, which represented an improvement of 33 points. Part of this improvement may be seen in the area of procedure decisions where both ratings resulted in perfect agreements.

The uncertainty of Subject V was evident in her first attempt at Lesson 2. The subject did teach so that the students made few of the procedural decisions. As seen in Figure 19 the students made only 3 of 14, or 21% of the procedural decisions, but the area of performance decisions was again not controlled as well. The students made 3 of 8, or 60% of the performance decisions called for. Once again the subject tended to stand and watch rather than attempt to interact with the students.

During the critique session following Lesson 2, the supervisor and the subject discussed ways of working with

students without taking the decision making from them. The subject became excited and commented that she was eager to attempt to improve on this lesson. The overall level of agreement for this lesson was 64% and the weakest area of agreement was in performance student. The 33% level of agreement in this area was an indication of the subject's uncertainty as to how to utilize teaching strategies which would result in student performance decisions.

Figure 22 also illustrates the results of the second taping of Lesson 2. The subject was much more confident and involved with the students in this lesson. The objectives of the lesson were met as the students made only 17% (2 of 12) of the procedural decisions, and 86% (12 of 14) of the performance ones. This lesson definitely indicated the subject's improved understanding of teaching strategies which involve performance decisions on the part of the students.

In the critique session for this lesson, Subject V stated that she felt much better about her teaching behavior. She said that she felt like she had truly "taught" this time. The percent of agreement for this taping ranged from 50% (1-2) to 100%. Using Bijou's formula (1969, p. 195) the overall level of agreement was 89%. This was the highest overall level of agreement of all lessons for Subject V.

Lesson 3 directed the subject to utilize teaching strategies which would equalize the decision making between the teacher and the students. Subject V taught this lesson so that the students made 10 of 17, or 59% of the performance decisions and exactly half, 50%, of the procedural decisions.

The results in Table 16 show that the percent of agreement for the supervisor and subject on Lesson 3 was 63%. It was decided that the first teaching of this lesson was satisfactory and the subject would not be asked to reteach.

The subject commented on the questionnaire that the critique sessions were of great value to her. She stated that the total experience was very valuable and she felt she had gained much more than those is the class who had not been able to participate in this experiment.

This subject completely met the stated objectives in two of the three lessons and met half of the standard in Lesson 1. Subject V was the only subject to completely meet the standard for Lesson 3. The overall level of agreement for all three lessons for this subject was 77%.

Feasibility of Using Microteaching

These five subjects were each quite different in their approach to personal teaching strategies prior to this experience. Four of the five commented that Lesson 1 was the easiest to teach and one decided that Lesson 3 was the

easiest. These expressions would generally be in keeping with the supervisor's understanding of their past teaching experiences.

Lesson 2 had to be retaught by three subjects. Lesson 3 was very pushed by time constraints and therefore its actual level of difficulty was hard to judge. Two of the subjects retaught Lesson 3 and Lesson 1 was retaught only once. Only one subject did not reteach a single lesson.

All subjects were able to control their teaching behavior so that differing amounts and kinds of decision making were demonstrated. Each subject completely met the stated objectives for two of the three lessons and each partially met the standard for the third. It was unfortunate that the pressures of time created an unfair situation for the taping of Lesson 3. There was indication that the design of this lesson was difficult for the subjects to master, but due to the limitations of time, it was not possible to have this lesson retaught as often as needed. Only one subject completely met the standard for this lesson.

The factor of time must be considered when attempting any use of microteaching. This study involved taping a minimum of four lessons, and for some subjects as many as six lessons, in a five-week period. This factor very definitely was an influence in the generally weaker results from Lesson 3.

The subjects expressed positive feelings toward the microteaching experience and generally considered that the critique and reteach part of the cycle was of great value. The incidence chart was repeatedly mentioned as being of assistance in both the planning and the critiquing of the lessons.

Since each subject was successful in demonstrating a variety of teaching strategies, as defined in this study, it is concluded that microteaching is a feasible means of developing this skill of teaching.

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

There is general support for the belief that a teacher who can control personal teaching behavior, so that a wide range of strategies is available for use, is potentially more productive than a teacher who is limited to only a few teaching strategies. As physical education both runs and is pushed into the awakening educational stream of personalized, individualized, humanistic, and optional programs of learning, this belief is fast becoming activated as an imperative, preservice mandate.

It was this writer's belief that this variety of teaching strategies is more easily observed than defined; the differing attempts at definition of specific strategies have often tended to limit rather than encourage individual adaptation and adoption. In an attempt to find a controlling factor in teaching strategies, many writers have utilized decision making to differentiate. To more clearly distinguish between and among various strategies, decision making was further redefined, in this study, as to amount and kind.

Students seem to learn best by doing. Consequently, teacher preparation within the area of physical education

has sought many ways to allow preservice physical educators to actually perform the teaching skills being studied. One tool that is frequently suggested is microteaching.

Although microteaching is generally recommended for many uses in the preparation of physical education teachers, this writer could find no evidence of its specific use to aid in the development of a variety of usable teaching strategies. This study was therefore designed to investigate the use of microteaching as a tool to assist preservice physical educators in the acquisition of knowledges and skills relative to the use of varied teaching strategies. These strategies were identified by the amount and kind of student decision making which each entailed. The subjects were five senior physical education majors from Winthrop College in Rock Hill, South Carolina.

Summary

The subjects were directed to utilize teaching strategies in each of three microlessons so that the following results were obtained.

Lesson 1--Teach so that the students make the majority of the procedural decisions and few if any of the performance decisions which are required in the lesson.

Lesson 2--Teach so that the students make the majority of the performance decisions and few if any of the procedural decisions which are required in the lesson.

Lesson 3--Teach so that the students make approximately half of the procedural and half of the performance decisions which are required in the lesson. In addition, the results of the lessons were studied to see if the microteachers were able to distinguish between the types of decision problems which they presented in each lesson.

The initial phase of this study consisted of the design of an incidence chart which was used to identify and record decisions made in a lesson. The supervisor was trained to be objective in the use of this chart by working with a training judge and a series of training tapes. The incidence chart was also used in two methods of teaching classes over a year's time to test its general usability and level of understanding.

Three model tapes were prepared and each was validated by a panel of judges to determine its ability to demonstrate the particular teaching strategies required for that lesson. Following the validation of these tapes, the subjects were selected and oriented to the study and the use of the incidence chart. They were then requested to choose their content area and to teach a Base Lesson. This Base Lesson served as a reference point for later discussions as well as an introduction to the microteaching format.

Each subject then independently viewed the model tape and studied the written descriptor for Lesson 1. Each then microtaught Lesson 1 and met with the supervisor for a critique session. During each critique session, the supervisor and the subject independently completed an incidence chart on the lesson just completed. If the teaching strategies utilized by the subject did not result in the requested amount and kind of decision problems, the subject replanned and retaught the lesson. This sequence was followed by each subject for each of the three lessons.

Conclusions

Based on the results of the microteaching experiences, answers to the following questions were sought:

1. Were the microteachers able to utilize teaching strategies which would result in the desired objectives for each lesson?

The supervisor's rating on the incidence chart for each of the final lessons was used in answering this question. Each subject was successful in teaching so that the requested amount and kind of decision making was evident to the stated degree in two of the three lessons taught. Each was also partially successful in meeting the standard for the third lesson. It was concluded that the microteachers did learn to control their teaching behavior to the degree necessary to achieve the desired results.

2. Were the microteachers able to distinguish between the types of decision problems presented in each of the lessons? A comparison of the supervisor's incidence chart rating with the subject's incidence chart rating of the same tape was used to answer this question. Bijou's Reliability Index (1969, p. 195) was used to establish a percent of agreement score for each lesson. The percent of agreement scores for each subject on each of the lessons ranged from 47% to a perfect 100%. Eighty percent (16 of 20) of these scores indicated an agreement of 70% or better. The average of all scores was 77%.

Generally the lowest percent of agreement scores were noted in the results of the Base Lesson. The overall level of agreement scores for the four lessons were 64%, 75%, 88%, and 80%. The scores tended to improve as the subjects gained experience in analyzing decision problems and the highest scores may be noted as a result of Lesson 2. These scores indicate that the subjects were able to identify the decision problems and did improve in this skill.

In addition to the above questions, material gathered on each subject throughout the study was analyzed in relation to the feasibility of using microteaching as a tool in the development of varied teaching strategies. Comments from the subjects, either in conversation or in response to a questionnaire administered at the end of the study, strongly supported the microteaching format. Other

comments and observations of the subject's tapes demonstrated a growing ability of the subjects to utilize a variety of teaching strategies in relation to the amount and kind of decision problems presented.

Discussion and Implications

Traditionally, the neophyte physical educator can readily organize a class of any number into lines, squads, circles, or any other pattern deemed appropriate. In addition, this same novice can quickly and correctly recite rules, regulations, court dimensions and proper learning progressions for innumerable activities. But all too often, this young teacher is limited to only one known and comfortable style of teaching. This one teaching strategy is frequently very well performed and is usually an unconscious adaptation and admixture of the styles of several professors. Generally, no one has taught this new teacher how to control personal teaching behavior so that a variety of teaching strategies are available for use when needed.

Two major implications from this study are suggested. The first is a further investigation into the use of decision making as a discriminatory tool for the identification of teaching strategies. The practice of specific teaching styles or strategies, as defined in various method text books, often seems to produce stilted and unnatural teaching behavior. Although these defined styles often use

the amount of student decision making as a part of the explanation, the preservice teacher is generally more concerned with the performance of specific steps than with the actual results of the encounter.

It would seem that an identification of some process goal, rather than specific title, would help this teacher react in a freer and more personal manner to the practice situation. The use of amount of decision making in a lesson is an attempt to do this. The factor of number alone, however, seems to be lacking in necessary discriminatory powers. The addition of kinds of decision problems appears to add greater discrimination without adding too much confusion.

The incidence chart was designed to help identify the decision problems as they occurred. Although the chart was useful and was generally well received by the subjects, there were a few areas where uncertainty created problems. Additional clarification of these areas would improve the use of this chart.

This small sample of subjects and tapes seems to indicate that, by controlling the amount and kind of decisions presented in a class, the teacher will, in fact, be forced to use different teaching strategies. It therefore is recommended that attempts to identify teaching strategies by results rather than by specific actions be continued.

The second major implication is the application of microteaching in the development of teaching strategies. Several positive factors concerning microteaching were identified in this study. The critique sessions were generally praised by the subjects as being very positive opportunities to learn about their teaching behavior. The coupling of the video tape to these critique sessions added immeasurably to their value. The reteach cycle was used by all subjects except one, and although the subjects were not always overly pleased with the necessity for a second lesson, the improvement was evident. The critique sessions for the second taping of a lesson were generally exciting for the subjects. They could readily observe the difference in their teaching behavior and were pleased over their control.

These factors would indicate that microteaching is a very viable tool for the practice and development of a variety of teaching strategies. The use of microteaching with the incidence chart seemed to help the subjects focus on the development of teaching strategies rather than on becoming too involved in the activity skill being taught. Because of the emphasis on student decision making, the subjects also maintained a high level of awareness of their students' actions.

In addition, there were interesting indications that this control over teaching behavior may be more easily

accomplished by those physical educators who have been prepared as elementary specialists rather than as secondary specialists. This seemed most obvious in the area related to allowing the students to make performance decisions. There also appeared to be indications that male physical educators were more willing to allow students to make performance decisions, where as female physical educators could more easily accept a change in procedural decisions.

One additional factor was noted in relation to the freshman physical education majors who served as students for the microlessons. Several of them became quite interested in the differences they noted in teacher behavior and soon were able to pick out similarities between various teaching strategies employed by different microteachers. In turn, they seemed to have a greater awareness of the role of the teacher and commented on looking forward to when they would have opportunities to practice their teaching behavior.

In summary, the implications for further study focus either on refinement of the incidence chart or preparation of other means of identifying strategies of teaching by the results they produce. In addition, the use of microteaching seems to be a very positive step in the development of personal control over teaching behavior and it is hoped that its application will spread.

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APPENDICES

APPENDIX A

APPENDIX A

DECISION MAKING INCIDENCE CHART (1)

Date_____ Name _____

Directions: After reviewing the video taped lesson, and determining whether the decisions were primarily made by the teacher or made by the student, place tallies in the appropriate spaces. A decision problem presented to the whole class in unison = 1 tally. A decision problem presented to individuals within the class = 1 tally each presentation.

During the course of the lesson, who made each decision concerning:	TEACHER	STUDENT
PROCEDURE		
1. The choice of each specific activity (what activity to participate in or to practice)		
2. The organization of the class (formations, where to stand, how to move around the gymnasium, size of group, etc.)		
3. The use of equipment or apparatus (what equipment is most appropriate to practice a given skill or activity)		
4. The time each specific activity begins and the duration of each activity (when to start the exercise, how many repetitions, or length of time allocated, when to stop moving or practicing a specific activity)		
5. The control of the class (the initiation of controlling behaviors, the acceptable limits of student action.)		
PERFORMANCE		
6. The proper execution of the skill (grip, body part in certain position, exactly how to perform activity)		
7. The timing and spatial factors of movement (how fast or slow a movement should be executed, what level or direction to be used)		
8. The sequence of the movement (what progression to use in practicing a skill or activity)		
9. The evaluation of performance (what is good, when a skill is executed well enough to move to the next action)		

APPENDIX B

APPENDIX B

DECISION MAKING INCIDENCE CHART (2)

During the course of the lesson who made each decision concerning:	TEACHER	STUDENT
PROCEDURE		
1. The choice of each specific activity (what activity to participate in or to practice)		
2. The organization of the class (formations where to stand, how to move around the gymnasium, size of group, who to work with, etc.)		
3. The use of equipment or apparatus (what equipment is most appropriate to practice given skill or activity)		
4. The time each specific activity begins or the duration of each activity (how many repetitions, length of time allocated, when to stop moving or practicing)		
5. The control of the class (initiation of controlling behaviors, acceptable limits of student action)		
PERFORMANCE		
6. The execution of the skill (position of body part, relationship to equipment, exactly how to perform activity)		
7. Limiting or guiding factors such as timing, spatial, force, level or direction (how fast/slow a movement should be executed, what level or direction to be used)		
8. The series or sequence of the movement (selection between two or more skill options resulting in practice order)		
9. The evaluation of performance product (what is good, when a skill is executed well enough to move to the next action)		
10. Miscellaneous comments that do not fit into another area. This includes reinforcement--both of the original statement and as a form of motivation. Do not have to use.		

NAME_____ TEACHER_____ DATE_____

APPENDIX C

APPENDIX C

TEACHING EXPERIENCE #1

In this experience you are asked to teach so that the students make the majority of the procedural decisions and few if any of the performance decisions which are required in the lesson. This is a microteaching experience and you will have 6 to 8 students for 8 to 10 minutes. You are to use the content area previously agreed upon, and you are definitely attempting to improve your student's skill and knowledge. Our emphasis is upon your success in using teaching strategies which result in the prescribed amount and kind of student decisions.

To assist you in your planning, you are asked to watch tape #1 which is a model tape illustrating the use of teaching strategies resulting in the called for student decisions. In addition, I will ask you to read the following descriptor of the same teaching skill. This tape is intended to illustrate a model of the teaching skill which we are studying and in no way is intended to illustrate a model teacher. Each tape is an edited version of a full 30-45 minute lesson. Each is edited to illustrate specific examples of the teaching skill under study. The normal sequence of the lesson was left intact as much as possible,

but the severe editing which was necessary for sake of shortening the time element did result in some distortion.

Please read the following descriptor of the lesson, view tape #1, re-read the descriptor, then view the tape once more. As you plan your lesson you may refer to the descriptor, but do not feel bound by the specific strategies you have studied. Approach your lesson as you would like, but you are asked to use teaching strategies which result in your students making the majority of the procedural decisions and few if any of the performance decisions which are required in the lesson.

Written descriptor of Tape #1.

Teacher begins lesson by allowing students to make a choice of activity (strokes--forehand, backhand, or service); S1*, choice of ball (fuzz or regular); S3, location--S2, and time to begin--S4. Additional activity choice involves use of partner if they want--S1 (this could count as 8 but as it is presented in this lesson it seems most appropriate as S1). Students are directed to come in to the teacher as "they begin to finish warming up," so this indicates individual student decisions as to when to stop moving--S4.

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*Code symbols refer to number on incidence chart and to either S-student or T-teacher.

At this point the teacher goes into a detailed explanation/demonstration of the proper execution of the skill--T6. Teacher then points out the first drill or practice--T8 and students are directed to select a ball--S3, partner--S2, space--S2, and time to begin--S4. During this drill the teacher makes several direct corrections of the execution of the skill such as, "Point at it," and "Step back this way"--T6.

As the teacher explains the second practice order--T8, she does indicate student placement--T2. The students are again allowed to choose preferred ball--S3, and to begin when ready--S4. During this drill there are continuing error corrections from the teacher--T6, and the students are directed to "Begin to finish up and hold the balls when through"--S4.

Again the teacher points out the third drill or practice order--T8 and points out the direction factors which are necessary for success--T7. The students are directed to choose type of ball--S3, partner--S2, and position--S2. The teacher reminds the students of how they are to execute the skill and what she is looking for in evaluation--T6 and T9. She tells them that if they are tired they may get water or rest--S4 and that there is a loop film which they might want to watch--S1, (if they do watch this film it would be T6). There are various comments of reinforcement--10, and several that may be interpreted as evaluation

("Good! Very nice stroke! Much better!")--T9. The teacher continues with the evaluation as she points out that a student is now "ready to go outside"--T9.

The students made the majority of the procedural decisions but few if any of the performance decisions needed in the lesson.

Teaching Experience #2

In this experience you are asked to teach so that the students make the majority of the performance decisions and few if any of the procedural decisions which are required in the lesson. Again, this is a microteaching experience where you will teach 6 to 8 students for 8 to 10 minutes. Please use the same content area as before and remember that you are trying to improve the skill and knowledge of your students so choose an appropriate lesson. Your emphasis is once again upon your ability to use teaching strategies which result in the prescribed amount and kind of student decisions.

Tape #2 is a model tape illustrating the use of teaching strategies which result in the called-for student decisions. Please read the following descriptor, view the tape, re-read the descriptor, then view the tape once more before planning your lesson. As you plan your lesson you may refer to the descriptor, but do not feel bound by the specific strategies you have studied. Approach you lesson as you like but you are to use teaching strategies which

result in your students making the majority of the performance decisions and few if any of the procedural decisions which are required in the lesson.

Written descriptor of Tape #2.

Teacher begins lesson by telling students where to stand--T2 and to not handle the sticks--T5. The students are then directed to begin exploring ways to use the equipment--S6. The students are told specifics on body position and equipment--T6 then are asked if they can "set up cradling motion" on their own--S6 and to find best individual placement of hand--S6. Students are directed to continue to work and find way to make the "cradle go more continuously"--S7 and the "stick more vertical"--S7. The teacher stops the practice--T2, then uses student ideas on performance--S6. The resulting performance is then evaluated and praised--T9.

Following more practice the students are given a point of evaluation and are directed to decide for themselves when they are ready to "remove the top hand"--S9. At this point the teacher leads a discussion in which she emphasizes proper position of the crosse--T6, and the students are directed to shift the weight in the crosse until they find the most controlled position to keep the ball in--S6. The teacher tells the students proper hand position--T6, but then tells them that they will have to

keep altering what they are doing to find their best way--S6 and that it is on their own timing--S7.

The students are then directed to begin moving--T8, and are told specifically where to position themselves--T2, how far to go--T2, what to do about equipment--T3 and to continue until the movement feels "nice and comfortable"--S9. The teacher next tells the students they are to develop confidence in acceleration and are very exactly directed as to position and equipment--T2, T3 but are told to vary their speed at their will--S7.

Following practice in acceleration the students are directed to choose their own speed--S7 and to change their speed in any order. They are to practice all the speeds but to change the sequence of practice as they want to--S8. Again, the teacher makes direct comments relative to organization and use of equipment--T2, T3. When the students stop moving, the teacher directs them to "Keep going--go!"--T4, T5. The students are then told to "put in 3 different speeds, in any order you like"--S7, T8, within a given area--T2 and to do this without balls--T3. They are then directed to do this with the ball--T3. The order of progression is made clear as the teacher tells who is to go first--T2, and where they are to go--T2. Those that are waiting are told to continue to practice to work on ways of cradling to the front and side--S6.

Following a question as to use of equipment, the teacher gives directions as to what to do--T3.

As you view this tape notice that there are few specific points given to the students as to the "proper execution of the skill" yet certain limitations and guiding remarks are used to see that efficient movement skills do develop. This teacher elected to make most of the decisions relative to #8 (series) and you might prefer to leave that to the students on occasion. This may be closely connected to evaluation #9 and may seem to involve equipment or time #3, #4 but the emphasis is on performance. ("When you think you are ready, you may add a ball or begin to try to move with the stick.")

Teaching Experience #3

In this last teaching experience you are asked to teach so that the students make approximately half of the procedural and half of the performance decisions which are required in the lesson. Once again, you will teach 6 to 8 students in a microteaching experience for 8 to 10 minutes. Continue to use the same content area as before and remember that you are definitely trying to improve your students' skill and knowledge. You are to teach them the skills in your lesson, but your emphasis remains upon your ability to use teaching strategies which result in the prescribed amount and kind of student decisions.

Tape #3 is a model tape illustrating the use of teaching strategies which result in the called-for student decisions. Please read the following descriptor, view the tape, re-read the descriptor, then view the tape once more. As you plan your lesson you may refer to the descriptor, but do not feel bound by the specific strategies used. Approach your lesson as you like, but you are to use teaching strategies which result in your students making approximately half of the procedural and half of the performance decisions which are required in the lesson.

Written descriptor of Tape #3.

Teacher begins lesson by checking each student's use of the backhand grip--T6. The teacher then tells students that they are going to work on 3 different strokes and they are to choose a partner--S2, and begin working on the stroke they want to practice--S1 (this could perhaps be S8 if the students were choosing the order in which they would practice the 3 strokes). The teacher then describes the results of each of the strokes, but not how to perform them--S6. The teacher gives one direct piece of performance advice about how to obtain power--T6.

After observing a student, the teacher asks her what she could do to make the bird go farther, and the student then answers--S6. The teacher then asks a student what she is doing different that makes her shot better--T9, and the student says she is hitting harder--S6. Teacher then

points out that she is also shifting her weight better now--T6.

The teacher then tells the students to set up an evaluation situation so that they may decide when they are ready to go to the next skill. She then asks them to tell her what their "test" is--S9. The teacher praises a student for doing better--T9, then directs the students to work on a softer shot and describes the spatial factors involved--T7. The students are allowed to try to keep the bird going if they want to--T8, and are then directed to combine several strokes together to make a sequence of shots which will make their partner miss the bird--S8. The teacher then asks the students to tell her about various sequences she observes--S9. She then directs the students to stop--T4, and to choose a new partner--T4 and S4, and space--S4.

The teacher praises a good play--T9 and asks the student to tell how she knew what her partner was going to do. The student explains--S6, and the teacher then tells the partner how to improve a particular shot--T6. The teacher directs the students to use a particular "pattern"--T8, but first asks them to find another partner--T4, S4 and space--S2. She controls the amount of time they have to do this--T4. As the students begin working on the teacher-imposed pattern, they are reminded that she is telling them the power--T8 but they are to determine the placement--S8.

The students are then told to keep score and are given 2 minutes to play a game--T4. The teacher tells the students that if they are tired they may step off the court or change sides of the court if they like--S4.

APPENDIX D

APPENDIX D

SUBJECT'S INTRODUCTION TO THE STUDY

Microteaching is a scaled-down version of teaching. You are asked to teach only a small number of students (6-8), for a short time period (8-10 minutes), and to concentrate on a specific skill of teaching. For evaluative purposes your lesson will be recorded on video tape. At the conclusion of your lesson, you and your supervisor will view the tape, complete incidence charts and critique the lesson. You will then be allowed to replan and make any changes desired before you present the lesson again to a new group of students.

Microteaching can be used to isolate and study many different skills of teaching. At this time microteaching is the vehicle used to study and practice various teaching strategies. These strategies are to be recognized by the identification of the amounts and kinds of decision-making actions on the part of the students. You will be asked to utilize a teaching strategy which will directly result in varying amounts and kinds of student decision making.

For the purpose of this study, student decisions have been identified as being either procedural or performance in nature. Procedural decisions are those decisions which

deal with organization, time, or geography factors, while performance decisions are those which deal with the execution of the activity or movement.

When we meet together to clarify any questions which you have, I will ask you to choose a particular content area within physical education which you will use in each of your three microteaching lessons. Although your content area (gymnastics, basketball, dance, tennis, etc.) will remain the same, you will be asked to present your lessons utilizying different teaching strategies which will result in the prescribed amount and kind of student decision making.

Prior to each of the 3 lessons, you will receive a written descriptor of the specific teaching skill and will view a filmed lesson demonstrating the same skill. You will have approximately 3 days to plan your lesson after this and I will arrange the time for your presentation. You will teach your lesson to freshmen physical education majors and following the critique session, you will have a day to replan before presenting the same lesson to a new group of students.

These microteaching lessons will in no way be graded nor influence your grade in any class!

Thank you for your time and assistance.

APPENDIX E

APPENDIX E

SUBJECTS' EXPLANATION OF MICROTEACHING AND OF THE INCIDENCE CHART

This study utilizes microteaching as a tool to aid preservice physical educators in the acquisition of a variety of teaching strategies. The amount and kind of student decisions in each lesson are the deciding factors in the identification of these various strategies.

You will be asked to prepare and teach three lessons. Each of these microlessons will call for teaching strategies which result in prescribed amount and kinds of student decisions. In preparation for each lesson you will view a tape which demonstrates this teaching strategy, and will study a written descriptor of the same strategy. You will then be asked to prepare and teach a microlesson which utilizes teaching strategies which result in the requested amount and kind of student decisions. In this microteaching encounter you will have eight to ten minutes to present your lesson to six to eight students. Although content acquisition is important and learning will take place, the success of your lesson depends upon your use of teaching strategies which result in the prescribed amount and kind of student decision making. If your first attempt does

not result in the asked-for decisions, you will be allowed to replan and reteach this lesson.

On the following pages you will find a copy of an incidence chart which you will be asked to complete following each lesson, and an explanation or clarification of each area of the chart. Please study the chart and the explanation and discuss with me any areas of confusion.

For purposes of this study, decision making has been divided into two broad areas; (1) those decisions that are primarily Procedural or organizational in nature, and (2) those that are oriented toward Performance or how-to-do-it. To help identify the various decision problems into one of these two groupings, subdivisions were made in each area.

The following five subdivisions were made in the area of Procedural decisions.

1. The choice of each specific activity (what activity to participate in or to practice). "Today we are going to learn the forehand." "You may practice on any of the strokes which we've learned." "For the first part of your warm-ups, do either sit-ups, leg lifts or the V-sit." (Note--in all teaching situations it is recognized that the teacher makes the original decision to allow certain choices or to offer various alternatives to the students. These are considered preclass decisions and are not

within the area of this study. Only decision problems as they are presented in class are examined).

2. The organization of the class (formations, where to stand, how to move around the gymnasium, size of group, who to work with, etc.). "Line up in squad formation behind the black line." "You may work with anyone you like but don't let your groups get larger than six." "Form a double circle with the boys on the inside."

3. The use of equipment or apparatus (what equipment is most appropriate to practice given skill or activity). "Everyone get a basketball from the box." "You may work with either a vinyl ball or a volleyball to practice your setting." "If you want to, you may use the wall instead of your partner."

4. The time each specific activity begins or the duration of each activity (how many repetitions, length of time allocated, when to stop moving or practicing). "Ready. Exercise. One-two-three-four." "You will have three minutes to complete the circuit." "When you have completed your game come to the center of the gym."

5. The control of the class (initiation of controlling behaviors, acceptable limits of student action). "There's too much standing around between exercises. Let's see everyone double-time it to the next station. Run!" "Johnny, we don't need to yell at someone to get her attention." "Several of you say the noise in the gym bothers you.

Do any of you have ideas about what we can do with this problem?"

The following four subdivisions were made in the area of Performance decisions.

6. The execution of the skill (position of body part, relationship to equipment, exactly how to perform activity). "Watch where I place my hands and the position of my legs as I mount the beam." "The thumbs should point toward each other and the elbows stay in to the body." "See what happens to the position of your hands as you try to hit for more distance."

7. Limiting or guiding factors such as timing, spatial force, level or direction (how fast/slow a movement should be executed, what level or direction to be used). "The bird should travel down from your racket, very hard and very fast." "Try to make the ball go to the left side of your opponent." "Do this at the speed that feels best to you, but all of you need to work for more height."

8. The series or sequence of the movement (selection between two or more skill options resulting in practice order). "Practice the set by yourself, then with the wall, and then with a partner." "As you and your partner are working, start with an underhand clear, return it with an overhand clear, then a smash." "When I come around I want you to tell me the exercise series that you have decided on."

9. The evaluation of performance product (what is good, when a skill is executed well enough to move to the next action). "That's it! That was a beautiful volley." "As I come around and check, show me your best cartwheel." "When you and your partner are satisfied with skill number one, then you may go on to number two."

Area number 10 is a "garbage category" for miscellaneous comments that are not decision oriented and do not fit into another area. Many of these are reinforcement oriented --both of the original statement and as a form of motivation. "That's looking better. Keep working on it." "Remember, I said to hit the ball high each time." Comments such as "good," "nice beginning," or "OK," may be interpreted primarily as reinforcement rather than evaluation and therefore tallied in area 10 unless there is direct indication by either teacher or student that final end product evaluation was intended or understood. It is recognized that ongoing evaluation must be a continuous teacher action and that it is very difficult to separate from comments of reinforcement and direction. The evaluation (#9) area is primarily used for end product evaluation. There may be a series of "end products" during the course of a lesson; therefore, there may be few or several tallies in this area. Area 10 has been established because many comments do not fit as decision-making problems and it is often easier to record them than to ignore them. These tallies represent comments

not directly relating to decision making and will not be used in computation. You do not have to use this area if you prefer.

One tally is made for a decision problem presented to the whole class at one time, and generally any reiteration or reinforcement of this problem is tallied in area 10. If a problem is presented to different groups or individuals, then it is tallied once for each presentation.

There are many occasions when one decision problem will result in mixed student/teacher tallies, i.e., "Choose a partner from the groups I have assigned you," results in teacher and student tallies for organization. You may mark as many tallies as needed for each decision problem.

APPENDIX F

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DIRECTIONS FOR THE JUDGES

This study utilizes microteaching as a tool to aid preservice physical educators in the acquisition of a variety of teaching strategies. The amount and kind of student decisions in each lesson are the deciding factors in the identification of these various strategies.

Following a study of how decision making relates to teaching strategies, and practice in the identification of the many decision-making opportunities in any teaching encounter, each subject will be asked to prepare three microteaching lessons which demonstrate the requested teaching strategies. In preparation for each lesson, the subjects will study a taped model and a written descriptor of the teaching strategy requested. I am asking your assistance in the verification of these three modelling tapes.

Each of the tapes should depict a teaching strategy which results in one of the following situations.

1. The students make the majority of the procedural decisions and few if any of the performance decisions.

2. The students make the majority of the performance decisions and few if any of the procedural decisions.

3. The students make approximately half of the procedural decisions and half the performance decisions.

The modelling tapes are each 9 1/2 minutes in length and were taken from a complete lesson. The normal sequence of the lesson was left intact as much as possible, but the severe editing, which was necessary to shorten the time, did result in some distortion. These tapes are not depicting model teaching but only the modelling of each of the teaching strategies mentioned above. On the following pages you will find a copy of the incidence chart, which you will be asked to complete, and an explanation or clarification of each of the areas on the chart.

For purposes of this study, decision making has been divided into two broad areas; 1) those decisions that are primarily Procedural or organizational in nature, and 2) those that are oriented toward Performance or how-to-do-it. To help identify the various decision problems into one of these two groupings, subdivisions were made in each area.

The following five subdivisions were made in the area of Procedural decisions.

1. The choice of each specific activity (what activity to participate in or to practice). "Today we are going to learn the forehand." "You may practice on any of the strokes which we've learned." "For the first part of your warm-ups, do either sit-ups, leg lifts or the V-sit."

(Note--in all teaching situations it is recognized that the teacher makes the original decision to allow certain choices or to offer various alternatives to the students. These are considered preclass decisions and are not within the area of this study. Only decision problems as they are presented in class are examined).

2. The organization of the class (formations, where to stand, how to move around the gymnasium, size of group, who to work with, etc.). "Line up in squad formation behind the black line." "You may work with anyone you like but don't let your groups get larger than six." "Form a double circle with the boys on the inside."

3. The use of equipment or apparatus (what equipment is most appropriate to practice given skill or activity). "Everyone get a basketball from the box." "You may work with either a vinyl ball or a volleyball to practice your setting." "If you want to, you may use the wall instead of your partner."

4. The time each specific activity begins or the duration of each activity (how many repetitions, length of time allocated, when to stop moving or practicing). "Ready. Exercise. One-two-three-four." "You will have three minutes to complete the circuit." "When you have completed your game come to the center of the gym."

5. The control of the class (initiation of controlling behaviors, acceptable limits of student action).

"There's too much standing around between exercises. Let's see everyone double-time it to the next station. Run!" "Johnny, we don't need to yell at someone to get their attention." "Several of you say the noise in the gym bothers you. Do any of you have ideas about what we can do with this problem?"

The following four subdivisions were made in the area of Performance decisions.

6. The execution of the skill (position of body part, relationship to equipment, exactly how to perform activity). "Watch where I place my hands and the position of my legs as I mount the beam." "The thumbs should point toward each other and the elbows stay into the body." "See what happens to the position of your hands as you try to hit for more distance."

7. Limiting or guiding factors such as timing, spatial force, level or direction (how fast/slow a movement should be executed, what level or direction to be used). "The bird should travel down from your racket, very hard and very fast." "Try to make the ball go to the left side of your opponent." "Do this at the speed that feels best to you, but all of you need to work for more height."

8. The series or sequence of the movement (selection between two or more skill options resulting in practice order). "Practice the set by yourself, then with the wall, and then with a partner." "As you and your partner are

working, start with an underhand clear, return it with an overhand clear, then a smash." "When I come around I want you to tell me the exercise series that you have decided on."

9. The evaluation of performance product (what is good, when a skill is executed well enough to move to the next action). "That's it! That was a beautiful volley." "As I come around and check, show me your best cartwheel." "When you and your partner are satisfied with skill number one, then you may go on to number two."

Area number 10 is a "garbage category" for miscellaneous comments that are not decision oriented and do not fit into another area. Many of these are reinforcement oriented--both of the original statement and as a form of motivation. "That's looking better. Keep working on it." "Remember, I said to hit the ball high each time." Comments such as "good," "nice beginning," or "OK," may be interpreted primarily as reinforcement rather than evaluation and therefore tallied in area 10 unless there is direct indication by either teacher or student that final end product evaluation was intended or understood. It is recognized that on-going evaluation must be a continuous teacher action and that it is very difficult to separate from comments of reinforcement and direction. The evaluation (#9) area is primarily used for end product evaluation. There may be a series of "end products"

during the course of a lesson, therefore, there may be few or several tallies in this area. Area 10 has been established because many comments do not fit as decision problems and it is often easier to record them than to ignore them. These tallies represent comments not directly relating to decision making and will not be used in computation. You do not have to use this area if you prefer.

One tally is made for a decision problem presented to the whole class at a time, and generally any reiteration or reinforcement of this problem is tallied in area 10. If a problem is presented to different groups or individuals, then it is tallied once for each presentation.

There are many occasions when one decision problem will result in mixed student/teacher tallies, i.e., "Choose a partner from the groups I have assigned you," results in teacher and student tallies for organization. You may mark as many tallies as needed for each decision problem.

We will view the tape twice. The first time observe and make notes. The second time will be to tally, but the tape may be stopped if you need to catch up. Since every class necessitates most of the decisions listed on the incidence chart you may want to be alert for those decisions that are made or allowed without specific direction.

APPENDIX G

APPENDIX G

SUBJECT'S QUESTIONNAIRE

Model Tape #1--Tennis lesson, students make the majority of the procedural decisions and few if any of the performance decisions.

Model Tape #2--Lacrosse lesson, students make the majority of the performance decisions and few if any of the procedural decisions.

Model Tape #3--Badminton lesson, students make approximately one-half of the procedural and one-half of the performance decisions in the lesson.

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1. Which of the lessons did you find to be the easiest to teach? Why do you think this was so?

2. Were the modelling tapes of value to you in preparing your lesson? (Please elaborate if possible as to why or why not)

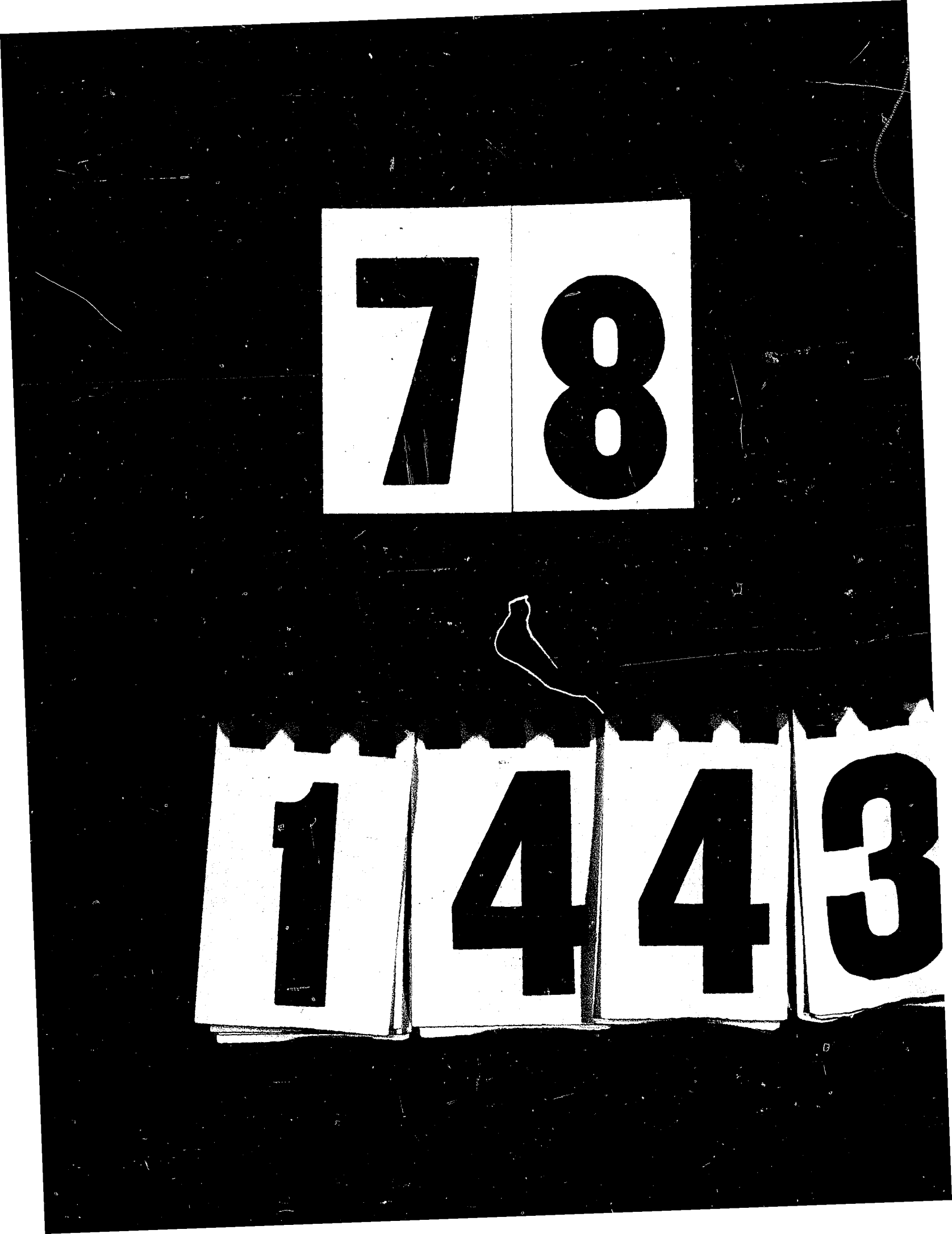
3. Can you comment briefly about each of the tapes? Which was of greatest/least value?

4. Comment please on the value (or lack of) of the written descriptors.

5. Comment please on the critique sessions.

6. Please add any comments that you can concerning the experience--your feelings during the experiment, any difficulties, learnings, positive or negative happenings, etc.

Use the back or additional paper if you need.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