THE USE OF VIDEOTAPES IN EARLY CHILDHOOD EDUCATION

by

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B.A. (Hons.), The University of Cluj, 1972

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS

in

THE FACULTY OF GRADUATE STUDIES

Department of Curriculum and Instructional Studies

We accept this thesis as conforming to the required standards

THE UNIVERSITY OF BRITISH COLUMBIA

September 1981

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ABSTRACT

In the realm of modern educational media, verbal and scientific support has been given to the potential of videotape for teaching and learning specific skills.

Little evidence, however, can be found to substantiate the support in early childhood teacher training. This lack of sufficient evidence pertaining to the effectiveness and possibilities for use of videotapes as a teaching aid in early childhood teacher training, served as the motivating force for the present study.

The first purpose of this study was to accumulate videotaped data about four target children who displayed different natural behaviours during chosen free play activities, and to develop a systematic observational plan for analysis of videotaped information.

The second purpose of this study was to test the effectiveness of videotaped records displaying children's behaviour used with structured observational guidelines to help pre-service and inservice teachers become more accurate observers of young children's natural behaviour.

Two basic procedures were used in this study.

(1) To accumulate videotaped data about young children's behaviour, four target children were selected and videotaped. A 20 minute continuous free play activity was retained as a "record tape" for each target child.
For analysis of obtained videotaped records, a systematic observational plan was developed.

(2) To test the effectiveness of videotapes used in connection with structured observational guidelines, the following procedures were used:

Subjects of the study were 23 pre-service and inservice teachers enrolled in an Early Childhood curriculum and instruction class at the University of British Columbia.

Pre-service and inservice teachers were asked to observe without interruption a 15 minute segment of videotape No. 1 entitled "Kevin and Aaron". When the videotape showing ended, all the subjects were asked to write a description of what they saw using the guide sheets. Three types of guide sheets were administered to the same group at one week time intervals between each test. After completion of the observation guide sheets, all subjects were asked to evaluate the videotaped observations and guide sheets used.

From analysis of videotaped records, it was concluded that the kindergarten classroom is a remarkably busy place and each child has unique and special qualities. All the children do not think identically, are not equally skilled nor are they interested in or concerned by identical problems.

Results of analysis carried out in the pilot study suggest a significant difference between test scores obtained on observation Type 1 and Type 3, indicating a preference for the most structured guide sheet.
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Videotapes in Special Collections; also available in Dept. of Curriculum and Instructional Studies, Faculty of Education.
ACKNOWLEDGEMENTS

My sincere thanks are expressed to Dr. Glen T. Dixon for his time, assistance and guidance throughout all phases of this educational endeavour.

I also thank Mr. Bruce White for his kind assistance, and Dr. Hannah Polowy for her guidance and invaluable support and continuing encouragement.

Further gratitude is expressed to Mr. Terry Frank for technical assistance, and to Dr. Steen Esbensen for his support to facilitating the pilot study. Particular mention must be made of the willingness of pre-service and inservice teachers to put up with considerable inconvenience, their time and efforts are greatly appreciated.

A special thanks is extended to Dr. A. Stan for his thoughtfulness and encouragement, and above all my child, Anna-marie, to whom I dedicate my work.
CHAPTER I

INTRODUCTION AND STATEMENT OF THE PROBLEM

The rapid pace of today's electronic technology and the growing diversified applicability to educational and communication processes are making a great impact on the educational world specifically in North America.

"Television has a greater impact on our day-to-day life than any other medium. It plays a major role in determining the way we live, the way we communicate and the way we learn. Our living patterns have assumed television as a prime source of news, culture and entertainment. It becomes a babysitter and a tutor for the young, and a major contact with the outside world for the aged". (Ackerman & Lawrence, 1977). Television has a tremendous potential. It can motivate, excite and involve large numbers of people of all ages. It can transport the viewer to any location in the past, present and future, in the realms of fact or fiction, reality or fantasy. It can make visible to all at the same time what would normally be visible only to one, such as the image from a microscope or a telescope. It can alternate close-up and distant views, using the zoom lens to make smooth transitions. Abstract concepts can be concretely visualized by animation.

The use of television in professional and technical training has been explored, especially in the fields of medicine, dentistry, agriculture and in certain industries. This initial experience indicates that wherever there is need for rapid and widespread communication of practical skills, there is greater scope for employment of television in technical education.
In general, these potentials have not been realized for educational television. The most powerful communication medium in the history of civilization is under-utilized in colleges and schools. (Ackerman & Lipsitz, 1977).

The new technological developments (videotapes, videodisks, satellites) could have a profound effect on educational methods, and on education itself. With proper utilization and management, these new developments could be used at any time, at any place and for a variety of educational and applies purposes.

Experiments in the use of ETV/videotapes for the training of student teachers or those already teaching in schools, have been conducted by teacher colleges, universities and school systems in many parts of the United States and Canada. There are indications of areas of teacher education where ETV/videotapes can make a distinct contribution to the speed and quality of training. For example: Videotapes used for self evaluation in microteaching and in many diagnostic situations. Similarly, videotapes used to present common experiences for group discussion and evaluation. (McDonald & Allen, 1967). There is research evidence to confirm the effectiveness of such use, with significant gains over conventional methods in many instances. One factor which appears consistently throughout the research is a reduction in learning time compared to conventional methods. (Webb & Baird, 1967). This can be attributed to the careful organization of the information, and the use of audio-visual methods of communication. Another finding which is also reported is increased
Most educators and ETV producers agree that television is most effective when combined with other learning experiences. The combined method is most effective when the separate elements are designed to work together. Learning is significantly better than traditional instruction when television serves as an integral component with other methods, techniques and media to comprise a total learning system. (Anderson, 1976).

In the last decade a great deal of research has been undertaken using videotapes in the learning process. But conventionally attention has been focused on teacher skills, attitudes, curriculum, parents' background and involvement. However, limited videotaped materials and systematic observation plans could be found which provide and enhance knowledge about the behaviour and the development of the young child.

In the absence of documented evidence about the child, the nature of interaction with other children, environment and materials, have forced educators to place a great deal of faith in their own intuitive insights. Teachers cannot see everything in a busy classroom. The greater the detail the less precise they are, furthermore, behaviour is transitory. "A behaviour is an instance of a process, its status at that particular time." (Cartwright, 1974).

Development of the child from an infant to a mature adult depends on a number of internal and external processes. However, none of these are observable, except as stationary slices of behaviour caught at a given moment in time. Some be-
haviours, especially those which indicate the process of application, can only be known through the use of systematic observation methods. Some other behaviours can only be known through the use of nonobservational methods of gathering information in order to provide a complete picture of a child. However, paper pencil tests at kindergarten level are limited, good observation methods and skills are important for every teacher of young children.

To overcome the traditional difficulties, videocameras enabled the acquisition of a comprehensive record of overt behaviour. Such records subsequently are analyzed by human observers, but the permanency of the record allows repeated examination of each incident. The videotape can fill the visual and auditory gap left by the traditional observational method, and for this reason is a valuable medium to observation. This argument constitutes the a priori rationale for this study.

Statement of the Problem

A twofold problem was investigated in this study:

(1) To accumulate videotaped data about four target children who displayed different natural behaviours during chosen free play activities, and to develop a systematic observational plan for analysis of videotaped information.

(2) To test the effectiveness of videotaped records displaying children's different behaviours used in connection with structured observational guidelines in order to help pre-service and inservice teachers to be accurate observers of young children's natural behaviour.
Results of this investigation will be helpful in determining to what extent videotaped records about the child is an objective observational method to gather information about the child, and how it can be used effectively in early childhood teacher training programs.

**Procedures**

Two basic procedures were used in this study:

1. To accumulate videotaped data about young children's behaviour, four target children who displayed different natural behaviours during chosen free play activities were selected and videotaped. A twenty minute continuous free play activity was retained as a "record tape" for each target child. In order to analyze the obtained videotaped records, a systematic observational plan was developed. The plan emphasized general and specific categories of language, physical, affective, social and intellectual, cognitive areas of development of young children.

2. To test the effectiveness of videotaped recordings displaying children's different behaviours used in connection with structured observational guidelines in order to help pre-service and inservice teachers to be accurate observers of young children's natural behaviour the following procedures were used: Twenty-three pre-service and inservice teachers were asked to observe without interruption a fifteen minute segment of videotape No. 1 entitled "Kevin and Aaron". When the videotape showing ended, the participants were asked to write a description of what they have seen in the provided observation guide sheets.
Three types of observation guide sheets were administered to the same group at one week time intervals between each test. After completion of the observation guide sheets all participants were asked to evaluate the observation guide sheets used during the tests.

Limitations of the Study

(1) Only one videotaped segment was recorded for each target child in this pilot study except for Aaron. Additional recordings could have provided more information to assess, evaluate and diagnose the children in order to better meet their educational needs.

(2) The subjects represented in the sample were students enrolled in Curriculum and Instruction for Young Children class (Ed. 333) during the summer session 1981 at U.B.C.

Definition of Terms

The following terms are defined as they were used in this study:

(1) Videotape recorder (VTR) - is a three part communication system which takes a signal from a television camera, records it on a battery or power operated video recorder, and plays it back on the television monitor.

(2) Observation - is a process of systematically looking and recording behaviour according to a prearranged plan which is applied consistently for assessing, evaluation, diagnostic purposes.
(3) **Pre-service teacher education** - a student enrolled in a teacher education program specifically designed to train him to teach young children.

(4) **Inservice education** - any activity which a teacher of young children undertakes after he has begun to teach, which is concerned with his professional work.

Observing the children's natural behaviour means following unrehearsed actions.

**Organization of the Study**

A review of literature related to the major uses of videotapes in education and teacher training and a general description and comments about microteaching programs is presented in Chapter II.

Chapter III outlines the procedures for the study, data collection and data analysis procedures. A full description of the observational plan is given.

Presentation and discussion of findings are described in Chapter IV.

A summary of the study is given in Chapter V, with conclusions and suggestions for further research.

The study concludes with references and appendices.
CHAPTER II
REVIEW OF RELATED LITERATURE

This chapter is divided into two sections. The first part presents literature relating to major uses of videotapes in Early Childhood Teacher Training, and the second part presents literature relating to microteaching.

Major Uses of Videotapes in Early Childhood Teacher Training

"As the advanced nations of the world move into the 'age of technology', changes come more rapidly and with increasingly greater impact on our lives. Survival of our civilization and of each of us individuals depends upon our ability to adapt to these technological developments and to control the changes they produce within our society. An understanding of advances being made now and those under development for the future must be made accessible to all groups and strata. The responsibility to provide full participation for all is clear. Within the democratic process, such control can be realized only with public understanding of the nature, the capabilities, the limitations, and the trends of technology.

"And, the advance of technology cannot be understood without consideration of its interplay with social, economic, political, and behavioural forces." (Winthrop, p. 579).

The history of educational technology and of television's role in education is beginning to be written and the results are contradictory. (McAnany, 1977). Some writers are convinced that educational technology as a "growth area" for educational investment is past, others that the future of

instructional technology systems is only at a beginning. The development of technological hardware such as videocassettes, videodiscs, cable and satellites can provide better ways of giving more flexible education at all levels.

A third group of adversaries argue that educational technology is far from dead but that its contributions to education are either useless, irrelevant or negative. (McAnany, 1977).

What follows is a review of the major uses of videotapes in early childhood education - teacher training, characteristics of videotapes and the recognition of its particular suitability and potential as a tool for pre-service and inservice teachers to become better observers of children's natural behaviour.

A new instructional medium: "Video" (often confused and compared with its predecessor - TV) is taking its place in schools, colleges, universities, hospitals, business, industry and agriculture. Unlike broadcast television, use of more personalized videotape systems allows for control of the learning process by the instructor or student. Both instructor and student have opportunities to create their audio-video message.

Videotape recorders have become a multi-purpose tool - more flexible, more accessible, less costly, then ever before. (Macdonald, 1979). Videotape recorders enable teachers to store broadcast material and re-use it at discretion, to fit their own timetables and to match their children's pace of learning.
Numerous reviews and studies have been made of use of videotapes in teacher training. There appears to be a consensus of opinion that videotapes can be successfully used in a number of ways for educational purposes.

Videotapes as a Tool in Observation and Teacher Training

By the early 1960's, ETV was becoming widely accepted as a useful medium for institutions in higher education. Experiments in the use of television for the training of student teachers or those already teaching in schools have been conducted by teachers' colleges, universities, and school systems in many parts of the United States and Canada. (Cassirer, 1960).

Student teachers are normally required to observe classroom teaching. But when many teachers must be trained this involves difficulties. The scheduling of such a large number of observations with the limited facilities which were available was an exceedingly difficult task, for all could not be accommodated in the campus laboratory schools. Moreover, diverse observations provided no common experience among students for follow-up discussions and interpretations. Also, uninitiated observers frequently failed to identify the most significant events and features of what to look for or were unaware of the educational implications of what they saw. (Cassirer, 1960).

In 1960, the College of Education at the University of Minnesota at Minneapolis introduced the closed-circuit television as an observation medium. (Cassirer, 1960). With closed-circuit
television as the viewing medium for observation, several advantages over direct observation are achieved. The observation can be well integrated with the content being presented or discussed in the course lecture or laboratory sections. Television is distinctive in its ability to focus attention on selected features or details of a teaching situation while removing unwanted or distracting information from the scene. The observation is under the control of the co-ordinator so that observers can raise questions during the progress of the demonstration or be otherwise informed about what they see. The teacher of the observed class can easily meet with the observers personally or by means of closed-circuit television both before and after the observation for explanation and discussion. All observers have a common experience for such discussions as well as discussions at a later time. These advantages of closed-circuit television seem to make this medium a most promising technique for full exploitation of classroom observation in the introductory professional course in education.

In 1960, an extensive research project started at Hunter College in New York City. It utilized small compact television cameras, equipped with a zoom lens, which were placed at fixed positions and were remote controlled. It is therefore expected that television coverage will not interfere at all with the normal classroom atmosphere. This eliminates the potentially distracting effects of visitors or a large camera operated by a cameraman. (Cassirer, 1960).
Another feature of the Hunter College project was the recording of these closed-circuit television observations on videotape. This provided an immediately available and permanently accessible record of the teaching performance. One use of the recordings was to enable the student teacher to review his own performance with his supervisor after completing a lesson.

A further purpose of the Hunter College research was to evaluate the effectiveness of videotapes, made during actual classroom periods in which various behavioural or academic problems occurred, as a point of departure for seminar discussion. What would be the effect of presenting a videotape of an experienced and superior teacher in action, up to the point where the problem becomes clearly defined, at which point the seminar student would proceed to offer plausible solutions. Subsequent to the discussions, the tape could be continued to show the actual solution which had been achieved by the experienced teacher. (Cassirer, 1960). The availability of recorded classes with the most varied subjects and age group situations provide illustrative material which can easily be integrated into the training of student teachers.

A similar use of videotapes was made by the School of Education at Syracuse University, in a special teacher preparation program. (Clayton, 1969). Student teachers were videotaped in the classroom engaged in regular teacher activities. These videotapes were later viewed by them in order that they could access their own teaching behaviour. The first tapes were made in the
fall semester of 1963. Each student in the experimental program was taped in the classroom twice during the teaching practicum and had an opportunity to view himself in action. (Clayton, 1969). The recording, a 30 minute segment of continuous classroom activity, often included specially planned activities. Other tapes were made showing routine classroom activities. When schedules permitted, longer videotapes were recorded, and the student had an immediate opportunity (in a free period or immediately after school) to view the extended episode.

The direct use of tapes has been accomplished in a variety of ways. In some cases, a private viewing was arranged for the student with no one present except the technician. In other cases, he has viewed with a fellow student or students. Sometimes a supervisor or several staff members participated in a viewing and critique, and sometimes a tape was first viewed in a full seminar setting. Each approach has had its advantages and disadvantages. The instructors main concern was that the tape be used for objective feedback and analysis of instructional behaviour, and that a judgmental set be avoided as much as possible.

As Clayton mentioned, the library of examples of teaching contained in the student tapes has made possible a number of additional instructional uses.

Selected tapes were used to provide repeatable observation experiences for analyzing instructional behaviour.

Students were trained to observe and record verbal interaction in the classroom in the Flanders Interaction Analysis
system. The tapes provided a wealth of classroom data for such training.

Recognizing the role of education as a primary agent in the entire change process, the 89th Congress of the United States enacted Public Law 89-10, the Elementary and Secondary Education Act of 1965. Title V, Section 505 of this Act provides for special grants "to State educational agencies to pay part of the cost of experimental projects for developing state leadership or for the establishment of special services which, in the judgment of the Commissioner, hold promise of making a substantial contribution to the solution of problems common to the state educational agencies of all or several states." Fiscal support provided by this law made the formation of Multi-State Teacher Education Project (M-STEP) possible.

In describing the project, Bosley (1969) writes:

"The M-STEP design which evolved through cooperative action late in 1965 and early 1966 embraced an avowed attempt to find new directions, even new horizons, in teacher education. Major thrusts of this effort were planned to move in specified directions toward intensive experimentation in the uses of television and video processes as aids to professional learning." (Bosley, p. 6, vol. 1, 1969).

In brief, the aims and commitments of participating states were somewhat different. In Florida, for example, the goal was to provide appropriate inservice educational experiences in those areas of the curriculum which were relatively new to the
school program, and to improve pre-service programs for professional personnel. In Maryland, a cooperative project with the College of Education of the University of Maryland and a local education agency to establish a Teacher Education Center for laboratory experiences, was successful.

Leadership in eliciting regional agreements regarding standards for student teaching programs and the cooperative administration of such programs on a regional basis by colleges and local education agencies was the central goal of the program in Michigan. Other states which participated in the program were: South Carolina, Utah, Washington and West Virginia.

The existence of the project was based on the expectation that the seven states could accomplish more by working together than by working alone. The project was extremely fortunate to receive the interest and the services of hundreds of top level specialists from the resource groups, both from inside the seven states intensively and from other states.

The project itself and the outgrowths of the project possess a great significance for teacher education in North America. (Bosley, 1969).

In 1973, in Jacksonville, Florida, Herbert Sprigle developed the Learning to Learn Teacher Education System (LTL).

Multi-media training materials were used in a curriculum which gave trainees a realistic understanding of the processes and techniques of teaching young children. (Sprigle, 1973). An important facet of the program was the production of a series of video-
tapes showing children's activities in the LTL School, which Sprigle developed in order to "capture the real-life drama of the classroom" and "isolate and control for examination in close detail the processes of learning and teaching. (Sprigle, 1973, p. 9)."

Describing his program, Sprigle (1973) writes:

In a very real sense the training system ... is a competency based system. We know the long benefits of children exposed to the Learning to Learn School program ..., we know the predictive validity of the Learning to Learn Program variables, including the teacher competencies, which produced these impressive benefits. (p. 12).

Because of the initial success of the system, it was introduced into teacher training programs at other universities with the hope that it might be widely accepted. The problem with Sprigle's tapes has simply been that the farther away from Florida they were shown, the more foreign the children's behaviour (especially language and accent) have appeared to students. Objective observations thus became impossible for students who were unable to see beyond the superficial regional characteristics of the children on the screen. (Dixon, 1981, p. 5).

A validation study of Learning to Learn Teacher Education System was carried out at the University of Georgia. (Dixon, 1975). Comparison was made of skills in identifying and classifying specific videotaped child behaviours between early childhood teacher education students enrolled in the Learning to Learn course (test
group) and students not exposed to the videotaped material (com­
parison group).

Test group students' progress in the Learning to Learn
course was assessed by means of the Videotape Analysis Test (VAT)
(pre- and post-tests), and examined in relation to student's cog­
nitive styles, personality types, and scholastic aptitude and
performance. Test group student's cognitive style preferences
were measured by the Siegel cognitive style test, and their per­
sonality types defined by Myers-Briggs Type Indicator.

All subjects in the study participated in the VAT (pre-
and post-tests), used to measure student's skill in observing and
classifying specific videotaped child behaviours. The Scholastic
Aptitude Test and Grade Point Average were also used to assess
scholastic aptitude and academic performance levels of all
subjects.

Result of this analysis demonstrated no linear relation­
ship between student's skills in observing and classifying speci­
fic videotaped child behaviours (as measured by VAT) and any of
the independent variables, so that none of the independent vari­
ables examined can be used to predict VAT change scores. (Dixon,
1975).

From the results it was concluded that students who were
exposed to the Learning to Learn course demonstrated increased
skills in observing and classifying specific videotaped child be­
haviours (as measured by VAT). These increased skills were not
significantly related to the independent variables of cognitive
style, personality type, and scholastic aptitude and performance. (Dixon, 1975).

Videotapes in Programmed Instruction

When video first became available to the general public many English Language Teaching (ELT) institutions realized that this new technology could be of service to language teaching. (McGovern, 1980). ELT institutions now make use of video to record the learner's performance in the classroom. Audio recordings made in class or in language booths fulfilled the function of allowing the student to hear himself speaking the language. The belief was that this would motivate the learner and help the teacher to diagnose problem areas. (Kritzer, 1976). Video enables one to take this technique a stage further. With a video recording the learner not only hears himself but sees himself communicating verbally and nonverbally. Some institutions allow students to operate all the equipment. They find this increases motivation and involvement and also generates a lot of language usage.

Modern conditions require an intensification of science teaching for all ages. At the same time, science is a field which particularly requires visual demonstration. (Spears, 1980).

The subjective opinion of experienced science teachers tends to confirm that the effective learning of science requires the active participation of pupils in laboratory work, field work, or in similar practical activities carried out in the classroom. It is not sufficient for the pupil simply to read about science, listen to talks on science, look at the scientific films, or at-
tend to science programs on television. Accordingly, if television is to be effectively employed as a medium for the direct teaching of science, practical work by the pupils in preparation for the transmission and as follow-up to the transmission should form an integral part of the lesson. (Spears, 1980).

However, the research evidence indicates that where the specialist teacher integrates television teaching with laboratory work, the pupils achieve results as good as or better than those achieved by pupils taught by conventional methods. (Barrington, 1970).

The instant replay ability of video recording makes it invaluable in teaching certain concepts in science. (Spears, 1980).

Videotapes are most often used in instruction for purposes of enrichment to heighten the student's interest in a particular area of the curriculum. (Coffelt, 1960). Customarily programs of this kind are not considered 'sine-qua-non components of the courses with which they are used. Instead they are regarded as supplementary and extraordinary, with their main emphasis being on special motivation and effect. (Ackerman, 1977).

**Videotapes for Parents' Education**

Individual housewives and members of various PTA groups in Port Washington have gained instruction in video and consequently become quite adept in its utilization. (Dale, 1974). Their major concern has been the nature and quality of elementary school instruction. The library has videotaped classes, special
events, and innovative instruction. These tapes were made available to parents. For many parents it was the first time they could be seated with their children beside them and see on screen before them their children and others in a class situation as it happened. This type of video information has provided many people for the first time a direct sense of what actually is taking place in the educative process of their children. Also, such tapes have provided parents with a knowledge of educational change since their days in elementary schools. (Dale, 1974).

Videotapes as Means of Communication to Parents of Handicapped Children

Identification of children who are handicapped but not attending school, or otherwise not receiving an appropriate educational program is required under the Education for All Handicapped Children Act.

When the identification process involves American Indian children in reservation communities, school authorities are presented with challenges in the area of effective communication. (Dunlop, Odenlacy & Sells, 1979). Limited availability of news media and telephone service, poor transportation, and the prevailing use of the native language are issued to be dealt with in the endeavour to explain to parents and others what constitutes a handicapping condition, and what services are available to handicapped children.

In the Navajo community of Rough Rock, Arizona, special education staff of the Rough Rock Demonstration School used video-
taped vignettes of typical special educational services as a means of communication to parents. (Dunlop, Odenlacy & Sells, 1979).

Battery operated equipment was used to show these tapes to parents in their homes, or to meetings of community persons. An "identification specialist", a community parent experienced as an aide in a resource room, and bilingual in Navajo and English, presented the tapes and explained help available to the handicapped. Viewers were solicited for referrals of children who might be handicapped, particularly children not attending school.

The identification project recognized the obstacles to communication presented by issues of language, media, and transportation in a reservation community. The Rough Rock project added the dimension of a video program to personal contact through the native language, as a means of informing the community about special education services and locating unserved handicapped children.

Videotape Recordings for Remote Teaching

Videotape recordings have been used for remote teaching at the University of Tennessee (UT) since 1969. The most extensive use of this medium has been in the offering of graduate engineering courses at eight remote locations. More recently, course offerings have expanded to include classes in teacher training, industrial management statistics and finance. (Dotterweich, 1971). The remote teaching program, which was developed initially under the leadership of F.N. Peebles and C.H. Weaver, has offered 47 separate courses
over its two year history. Facilities for teaching these remote classes have been established in Dougherty Hall, Perkins Hall, and in the television studios of the communications building on the Knoxville campus.

The Electrowriter, a two-way audio and visual communications device, coupled with VTR is one remote medium which possesses certain inherent advantages which can be used effectively to increase the efficiency of the teaching process. (Dotterweich, 1971). One videotape can be duplicated or reused to serve multi-location classes at various times with virtually no limitation on total student exposure. In addition, relatively permanent electro-writer installations can be maintained, dependent only on the availability of two telephone lines. This system is more flexible and nearly as effective as a live closed-circuit telecast and considerably less expensive to install and to operate.

Technical Characteristics of the Videotapes

The basic videotape system is a three-piece audio and visual communication system: camera, recorder and monitor. It is a three-part communication system which takes a signal from a television camera, records it on a videotape recorder, and plays it on the television monitor. (Hague, 1978).

The essential physical characteristics of the videotape medium that differentiate it from television is that all three hardware components (camera, recorder, and monitor) are available to the user under his control, in one location, at one time. (Hague, 1978).
Regardless of the kind of instructional medium, learning and remembering require the imposition of an active intellectual process by the learner on the material presented to his senses. While many have attested to the power of television in changing the learning process, one significant disadvantage of the television medium is that the learner is not given the opportunity for immediate application of the knowledge he or she has received. (Anderson, 1976).

Unlike television, videotape allows for control of the learning process by the instructor or student. Both playback and recording can be controlled on the local level. Both instructor and student have opportunities to create their own audio-video message. Videotape programs can actively engage the learner in exercises that stimulate and encourage learning by use of inserted questions. (Heestand, 1979-80).

The use of videotaped information involving realistic situations is increasing in the fields of art, speech, self evaluating teaching ability and performance (Waimon and Ramseyer, 1970), and also may be used for all kinds of disciplines and subject matter areas. Videotapes are particularly useful to provide immediate visual feedback to students concerning their performance, as they display their skills and abilities.

Videotape has the advantage of capturing a moving image and presenting people in their natural activities and conversation. The viewer of the videotape, feels the communicator is speaking to him on a one-to-one basis and has the sense that the things he
witnesses are occurring now and have true-to-life character. (Hague, 1978).

Videotapes can transmit verbal, non-verbal, and para-verbal kinds of messages. Another positive characteristic of videotape is the capacity for incorporating a variety of other media into one instructional module. Presentations may utilize overhead transparencies, film clips, photographs, slides, graphics, or other display media. Thus, video programs can save time, effort, and storage space required for utilization of other forms of both media hardware and software. (Hague, 1978).

Video can produce the same information simultaneously to various sized audiences in different locations by having monitors in various classrooms and can be played back upon request. Thus, another promising use is videotape cataloging and library development, which requires less storage space than print and other non-print materials.

Summary
There is now considerable evidence to document the fact that television can be used with great effectiveness for a wide variety of instructional tasks, ranging from classroom instruction, pre-school instruction for young children, fundamental and basic education for adults, and the pre-service and the inservice education of teachers. With the advent of closed circuit facilities, videotapes and videodiscs, it appears television's future will be brighter than its past. Its use could be extended and expanded beyond the education and re-education of teacher person-
nel, and will place emphasis on the use of video systems as a re-
search and diagnostic instrument in a more individualized and
small group rather than as a disperser of information in mass
audience situations. The use of videotapes and videotape recor-
ders hold the promise of turning television into a much more
flexible teaching and learning instrument.

MICROTEACHING

Microteaching represents a miniature teaching situation
which offers a helpful setting for a teacher, experienced or in-
experienced, to acquire new teaching skills and to refine old
ones.

The uniqueness of microteaching consists of two elements:
The ease with which the teaching situation can be con-
trolled and manipulated, and the availability of immediate feed-
back for the student teacher.

The first microteaching program began in 1963 as part
of a pre-service program at Stanford University under the leader-
ship of Allen, Bush and McDonald.

From 1963 to 1966, four microteaching clinics were con-
ducted at Stanford University with four hundred and fifty-nine
students participating. Experimental and control groups were
formed, and a comparison was made of the various outcomes and
observations. The following results were reported: (Webb &
(1) Candidates trained through micro-teaching techniques over an eight week period and spending less than ten hours a week in training, performed at a higher level of teaching competence than a similar group of candidates receiving separate instruction and theory with an associated teacher aide experience — involving a time requirement of 20 and 25 hours per week.

(2) Candidates who received student appraisal of their effectiveness improved significantly more in their teaching performance than candidates who did not have access to such feedback.

(3) Candidates receiving student feedback (in addition to the video playback) improved significantly more in their teaching performance than candidates not having access to such feedback. (Webb & Baird, p. 87-88).

In September 1972, a British team began to work on a project in Lancaster and Manchester concerned with the transfer, redevelopment and evaluation of self-instructional microteaching materials originally developed in the United States. This project, under the direction of Elizabeth Perrott, had diverse goals.

One emphasis, supported by the Centre for Educational Research and Innovation of the Organization for Economic Cooperation and Development (OECD) focused on the transfer process itself: Could teacher training systems developed in one country be successfully redeveloped for use in another? A second emphasis, supported by the Department of Education and Science, sought to evaluate the usefulness of the materials in inservice training programs in the United Kingdom. (Applebee, 1976).

Through the liaison work of OECD, a selection of "mini-courses" developed at the Far West Laboratory for Educational
Research and Development, San Francisco, California, were made available for transfer and redevelopment both by the U.K. team and by a series of similar teams working in other European countries.

These minicourses offer short, intensive training designed to bring about changes in experienced teacher's use of 12 specific teaching skills, leading to a reduction in teacher-talk and an increase in pupil involvement.

Parallel investigations of teacher's attitudes indicated that the courses and goals were enthusiastically received by the teachers. Virtually all participants emerged convinced of the value of microteaching, and felt that their own teaching had been improved. (Perott, E. et al, 1975).

In both the European and Stanford programs, microteaching has been used for the initial training program of teachers, and was planned around the following training pattern: (Morrison & McIntyre, 1969)

After teaching a brief lesson, usually five to ten minutes, the trainee and his supervisor critique the lesson. If videotape recordings are made of the lessons, they are played back at this time. After the critique, the trainee revises his lesson and teaches it again, usually to a different group of pupils. The second teaching session is also followed by a critique. There are many variations possible to this pattern due to the flexibility of the components. For example, if skills training is involved, it may occur before the initial teaching session when, for example,
videotapes of teachers "modelling" the teaching skill are shown to trainees who then practice the skill in their lesson. In another variation, the reteach may be held much later, giving the trainee longer time to revise his lesson. (Morrison & McIntyre, 1969). From this description, four components of the microteaching process emerge: Setting and equipment; participants; specified teaching skills (or the technical skills of teaching); and a program for imparting these skills.

These components will be discussed further.

Setting and Equipment. A normal classroom setting, with a teacher's desk, blackboard, and student desks, provides the necessary space and equipment for a microteaching station. Special rooms or equipment may be needed for certain subject areas (e.g. physics, gymnastics). If the clinic is held in a school, it should be possible to provide appropriate teaching settings for all subject-matter areas. (Brown, 1975). If videotape recordings are used, there will be additional equipment and an operator in the room. However, videotape recorders are compact, easily manoeuvrable and operable by non-technical staff.

There are several advantages to using videotape recordings in microteaching.

For training purposes, videotape recordings provide supervisors and trainees a common, objective frame of reference for critiquing a teacher's performance immediately after it is completed. The advantages of such attributes are pointed out by extensive psychological research on the effects of feedback in-
Including work on knowledge of results, trial and error learning, and reinforcement. (Brown, 1975).

For research purposes, videotape recordings provide objective data which can be stored and replayed almost indefinitely so that a data bank of teaching behaviours and situations can be accumulated. Longitudinal studies benefit especially from such data banks.

Videotape recordings are an extremely useful adjunct to the microteaching setting, but they are not the essence of the concept. (Harrison & McIntyre, 1969). Their frequent use in microteaching context has led some to assume that there cannot be microteaching without videotape recording. Because they lack the resources to provide such technical contexts, many would-be contributors to the development of microteaching have declined to investigate its potential.

Participants. Trainees are individuals given the opportunity to become more proficient at teaching, usually with reference to a certain skill or group of skills, through a program of focused presentation, practice and feedback. (Morrison & McIntyre, 1969). Feedback may come from pupils and supervisors in written and/or verbal form and possibly from playback of a videotape recording of the performance. The trainee is then given a chance to revise his performance strategy and to teach a second lesson, usually with a different group of students.

The task of microteaching pupils, usually selected to represent a variety of socio-economic backgrounds, subject matter,
interests and competencies, and age levels, is twofold: To provide realistic classroom interaction for trainees, and to help provide them with accurate information about their teaching performances.

Supervisors play a key role in microteaching, particularly in pre-service training programs. Experienced in the skills emphasized in the training, it is their responsibility to help trainees relate such skills to both the theory underlying the skills and to the practical conditions of the classroom. (Young, 1970).

The role of supervisor is one of continuous consultation. Supervision should be consultative because the type of assessment a trainee receives affects the amount of freedom he feels he has to innovate in this microteaching performances; the supervisor's role is to provide information about trainee's performances which will help them to acquire the appropriate teaching skills.

Technical Skills. In the initial microteaching clinic at Stanford, it was found that some sort of systematic exposure to teaching strategies was needed to help acquaint trainees with a repertoire of useful behaviours and also to help provide a focus for critiquing trainee's microteaching lessons. Instead of being limited to overall and individual impressions about teaching performances supervisors could concentrate on helping trainees acquire strategies previously identified as helpful to teachers. (Morrison & McIntyre, 1969). One such skill is that of reinforcement. As with many of the technical skills of teaching identified thus far, it is based on psychological rationale and research, in this case
about the importance to learning of receiving positive feedback about one's previous actions.

A more cognitive skill is that of asking "probing" questions. (Morrison & McIntyre, 1969). A probing question requires a pupil to go beyond his initial response to a teacher's comment or question. This usually entails some sort of clarification or elaboration upon his previous response.

From the number and diversity of components of microteaching programs, planning is a demanding task. Still, this is perhaps an advantage in that it forces a training program to analyze and to evaluate the basis for, and consequences of, its plans. In this way, microteaching encourages discussion and debate about these issues, as well as providing a setting for observing and assessing the decisions made. (Brown, 1975).

Studies on components of the microteaching process itself have concentrated on the techniques of presentation of technical skills to trainees (modelling research) and on the way in which trainees are given information about their attempts to learn and apply these and other teaching skills (research on feedback), because these two variables have been identified by many concerned with microteaching to be the most important in skills training.

Presentation of the "Modelling" Component

Modelling has been described as a two-step process where the learner first observes a model (e.g. an expert teacher) demonstrating a skill or skills and then tries to shape his own
behaviours after those of the model. (Borg et al, 1970).

A review of research on observational learning in personality development by Bandura and Walters has shown that complex social behaviour may be acquired almost entirely through imitation and that "the provision of face to face models" accelerates the learning process. (McDonald & Allen, 1967).

They also showed that filmed models are as effective as real life models in transmitting behaviours.

Modelling has been seen to be important to teacher education because trainees are able to discern from deliberately planned models distinctive characteristics of teaching skills.

Constructed audiovisual demonstrations are assumed to be more effective than live classroom observations which are usually uncontrolled in the sense that the trainee may not observe the correct behaviours or correctly interpret what he has been told to observe. (Morrison & McIntyre, 1969).

In teacher training effective modelling requires that the skills which trainees observe and imitate be described in terms of specific behaviours, that competent models be used, and that trainees have practice opportunities on which they will receive immediate feedback.

After providing for these conditions, several experiments have investigated the relative effects of these conditions on teacher's acquisition of several of the technical skills of teaching. In the modelling techniques investigated, trainees view short video recordings of master teachers performing les-
sons to demonstrate various teaching strategies and then practice the skill in a lesson of their own. They then view a videotape recording of the lesson with or without a supervisor to critique their attempt to emulate the skill previously modelled.

In addition to showing the overall value of model techniques to teacher training, the studies conducted thus far have indicated that some sort of accompanying commentary (e.g. cueing and contingent focus) is a useful adjunct to the model tapes.

Written commentaries are also useful but perhaps not as valuable by themselves as are the model tapes. In sum, videotape models are an efficient and effective addition to microteaching training techniques. (Brown, 1975).

Presentation and Comments about Research Findings on the "Feedback" Component

Research on the feedback component of microteaching has concentrates on assessing various possible means of providing trainees with helpful information about their microteaching performances so that they can improve upon their teaching behaviours in subsequent microteaching sessions and/or actual classroom performance.

Wolfe made the following statement regarding feedback: "Knowledge of results in training programs should be automatic, immediate, and meaningfully related to the task being learned." (Wolfe, 1951).

Lawther deciphered the following basic principles regarding the effectiveness of knowledge of results on the stimulation of learning:
"Learning is proportionally greater as quality, exactness, and precision of this playback of knowledge of results increases.

"When knowledge of results is not available, the learner often can improve at some extent by setting up his own criteria from past experience to help him subjectively approximate his results.

"With a delay of knowledge of results, performance declines.

"Performance deteriorates when knowledge of results is withdrawn.

"Continuous and complete knowledge of results fosters much greater learning than discontinuous and incomplete knowledge of results.

"Precise supplemental aids (i.e. graphs, films of action, etc.) which provide more precise knowledge or make apparent the differences between the learner's performance and those of better performers, seems to increase learning.

"Feedback of incorrect information retards learning in direct proportion to the amount of misinformation." (Lawther, 1968, p. 98-99).

Lawther summarized that when knowledge of results for a given performance is lacking, little or no learning takes place.

The need to develop new modes of providing possible feedback in microteaching sessions, stemmed from the inadequacy of the subjective, limited feedback from self or supervisory observations.

Videotape recordings were seen as viable communication mediums, allowing the student teachers to see their own performances immediately, in a complete, objective and reliable manner. (Allen & Fortune, 1967). The teacher and his supervisor can communicate more effectively since both members could see the
specific point being discussed as they actually happen. The missing points could be instantly replayed, thereby avoiding the pitfalls of traditional supervisory sessions.

McDonald and Allen studied the effects of feedback procedures in two related investigations conducted in the Stanford microteaching clinic. In the first experiment, "Effects of self-feedback and reinforcement on the acquisition of a teaching skill", the objective was to compare the effects of self-evaluation of a teaching performance with feedback provided by a supervising instructor. (McDonald & Allen, 1967).

The dependent variable was the relative frequency with which the teacher positively reinforced pupils participatory responses during teacher-pupil interaction in the classroom. The treatment groups received training involving either self-feedback only, reinforcement only, or reinforcement plus discrimination (when they were given cues to pupil behaviour to which reinforcement should be made). Results indicated that reinforcement plus discrimination training had the most effect on subsequent teacher performances.

The objective of the second experiment was "to compare the effects of delay of reinforcement and the kind of reinforcement provided. (McDonald & Allen, 1967). Trainee's use of probing questions constituted the dependent variable. Following initial written instructions about probing, treatment groups provided trainees with either immediate feedback with massed practice (three teaching and feedback sessions held together on successive
days); immediate feedback with distributed practice (the next teaching session, following immediate feedback on the previous session, took place one or two weeks later); delayed feedback (one week after a performance) with distributed practice (where the feedback on, for example, performance one, was given a week later, at which time the next practice performance took place also); or reinstated feedback (supervision based on a tape recording of the performance) and distributed practice. No significant differences were found between groups, though results suggested that distributed practice and delayed feedback groups kept relatively higher probing response rates when measured on a post test seven weeks after initial training. The lack of significance between the conditions of practice is contrary to most experimental results on the spacing of practice, where distributed practice has proven superior to massed practice.

Based on research on feedback, the following concepts were established:

(1) Feedback or knowledge of results appears to be the most important variable controlling skilled performances and learning.

(2) Feedback can be transmitted to an individual through internal and external means. Internal feedback includes information received through the "sense of proprioception", whereas external feedback is received through the senses of smell, sight, touch, taste and sound. (McDonald & Allen, 1967, p. 83).

(3) The exact function of feedback is unknown; however, psychologists and educators are in agreement that a motivating,
regulating, or reinforcing factor takes place to change human behaviour when feedback is induced. At the same time the literature indicates that no improvement is made in the absence of feedback, improvement is made in its presence, and deterioration occurs when feedback is withdrawn.

(4) Time delay between performance and feedback is a controversial topic; however, most studies indicated that when the time interval is made short, performance and learning are further enhanced. On the other hand, a short time delay does not appear to be a significant factor for improving retention.

(5) Studies that have utilized feedback by means of a videotape recorder and monitor were a valuable adjunct to supervisory critiques, but these studies were limited, and little or no replication of studies was available. (McDonald & Allen, 1967).

Summary
The advent of video recording equipment which is relatively inexpensive and convenient in use has had a marked impact on the training of teachers. The development of microteaching at Stanford University and at other centres reflected the capacity of video recording to give feedback to a trainee about his performances. It became possible to use video recording to provide a common frame of reference for instructor and student for acquisition of specific skills.

Studies of microteaching indicate that it can produce significant changes in teaching behaviour in a microteaching set-
ting. The most important determinants of the changes appear to be the exhibition of examples of appropriate teaching skills "Modelling" and "feedback" procedures.
CHAPTER III

PROCEDURES

The purpose of this chapter is to present the procedures for the study. Procedures of accumulating videotaped data about four target children, a description of the systematic observational plan, and the procedures used in the pilot study are presented.

Sequences were videotaped in a kindergarten classroom during free play activities in a university child study centre.

A detailed layout of the setting and a list of materials available in the classroom is provided in Appendix A.

The four target children were selected by the classroom teacher following guidelines given by a faculty member. These guidelines included a description of three social behaviour types (cooperative, socially isolated, and highly social) which would provide contrasting modes of behaviour for analysis. The children attended kindergarten for five 2½ hour sessions per week.

The children's parents were informed about the nature of the study and written permission was obtained allowing observation and videotaping of the children, they were invited to observe in the classroom at any time during the study.

In order to accumulate data on the natural behaviour of target children for the present study, a videotape recording system was employed. The actual recording was undertaken by the researcher. The main task was to record clear and in focus images of target children. The camera was operated without noise, and the presence of the operator and the camera in the classroom were disregarded almost completely. Teachers were not required
to adjust their procedures and routines in any way, no attempt was made to present anything other than the behaviours displayed by each target child during free play activities.

A twenty minute segment of continuous free play activity was retained as a "record tape" for each target child. The record tapes are entitled as follows:

Tape No. 1: Kevin & Aaron
Tape No. 2: Zev
Tape No. 3: Shawna
Tape No. 4: Aaron

When the videotape recording was completed, an observational plan was developed.

Emphasizing in six general categories: Language, physical, affective, social and intellectual, cognitive areas of development of young children after extensive research work was developed and defined a large number of specific categories for observing children's behaviour.

Use of general categories provided broader grouping of behaviour and assured adequate frequency of occurrence. At the same time, the specific categories allowed for distinguishing among the target children.

The guiding questions, which encompass the kindergarten level, with some modification could be extended to preschool and special education levels.

The following observational plan was established:

1. **Physical Development**

   How do you view the child's physical characteristics?

1.1 Gross motor skills.
1.1.1 Can the child walk and run evenly?
1.1.2 Can the child walk forward heel to toe?
1.1.3 Can the child walk backward heel to toe?
1.1.4 Can the child walk on his heels?
1.1.5 Can the child walk on his toes?
1.1.6 Can the child skip at least ten feet without losing rhythm?
1.1.7 Can the child jump up and down in place without losing balance?
1.1.8 Can the child hop on one foot?
1.1.9 Can the child throw and catch a ball?
1.1.10 Does the child show ability to climb across climbing frames, up ladders?
1.1.11 Does the child show control of a tricycle?
1.1.12 Does the child attempt to ride a bicycle?
1.1.13 Can the child maintain balance on a balance beam?
1.1.14 Does the child lift structures and crawl in block building activity?
1.1.15 What type of movements does the child exercise?
1.1.16 Which part of the body were actively engaged during the activity?
  - head
  - neck
  - shoulder
  - arm
  - wrist
  - trunk
  - legs
  - feet

1.2 Fine Motor Skills
1.2.1 Can the child make a stack of four to eight small blocks?
1.2.2 Can the child dump objects out of small container without dropping container?

1.2.3 Does the child show ability to hold the pencil to make a mark on paper?

1.2.4 Can the child pass small objects from one hand to the other without dropping object?

1.2.5 How does the child handle and place each block?

1.2.6 How does the child handle the clay? (squeeze, push, grasp, pound, stretch)

1.2.7 Can the child pour without spilling?

1.2.8 Can the child use scissors?

1.2.9 Can the child print his first name?

1.2.10 Can the child tie his shoe lace?

1.2.11 Can the child dress himself?

1.2.12 Does the child participate in art/craft activities?

1.2.13 Does the child assemble simple puzzles?

1.2.14 Does the child use pincer grasp to pick up small objects?

2. **Affective and Social Development**

2.1.1 How the child views his physical appearance? (body, size ...)

2.1.2 What evidence is in the child's behaviour of how he views his sex role?

2.1.3 Does the child express his feelings?

2.1.4 Is the child sensitive to others' feelings and views?

2.1.5 Does the child help other children?

2.1.6 Does the child show evidence of reliability and responsibility?

2.1.7 Does the child stand in line waiting for a turn at the activity centre/playground?

2.1.8 Does the child say "please" when requesting something from another child?
2.1.9 In what actions or activities is the child dependent or independent?

2.1.10 Does the child choose one particular activity more often than another?

2.1.11 In what types of play activities does the child primarily participate?
- solitary play
- parallel play
- associative play
- cooperative toy play (equipment centered)
- cooperative peer play (peer centered)

2.1.12 Does the child show evidence of unoccupied or onlooker behaviour?

2.1.13 Is the child isolated?

2.1.14 What is the child's manner of controlling others?
- leader
- follower
- clown

2.1.15 What kind of ideas or suggestions does the child offer to others or follow?

2.1.16 When conflicts or disagreements with peers occur, what does the child do to reach a resolution?

2.1.17 Is the child often involved in arguments or fights? If so, what situation precipitates these occurrences?

2.1.18 Does the child show evidence of disruptive behaviour?
- disruptive noise with objects
- orienting responses
- blurting out, commenting on vocal noise
- talking
- improper position
- aggression - disturbing others directly

2.1.19 Does the child show aggressiveness?
- personal physical attack
- taunting
- threatening
- destroying property of another's labour
- usurping property
3. **Intellectual and Cognitive Development**

3.1.1 Can the child recognize alphabet letters A - Z?

3.1.2 Can the child recognize numerals 1 - 12?

3.1.3 Does the child know his first and last name?

3.1.4 Does the child know his full address and telephone number?

3.1.5 Given a simple sentence a child can restate it?

3.1.6 Given a picture, a child can formulate and state a sentence describing the picture?

3.1.7 Does the child know the basic colours? (red, blue, yellow)

3.1.8 Does the child recognize the shapes of a square ...?

3.1.9 Does the child note similarities and differences for objects? (size, shape, weight, classification, quantity)

3.1.10 Does the child show an interest in the project/activity?

3.1.11 Does the child find it hard to get started on an activity?

3.1.12 Does the child flit from one activity to another?

3.1.13 To what extent is the child interested in books?

3.1.14 To what extent does the child participate in art activities?

3.1.15 Does the child assemble materials and manipulate equipment?

3.1.16 Does the child choose appropriate tools/materials?

3.1.17 What evidence does the child give of awareness of space, position, or location?

3.1.18 Does the child show evidence of understanding of time sequences? (yesterday, today, tomorrow)

3.1.19 Does the child enjoy learning about new things and new experiences?
4. **Language**

4.1 What is the child's use of spoken language?

4.1.1 **Vocabulary**

What categories of words in the child's vocabulary are most frequent?

- family relationship
- people
- feelings
- body parts
- toys
- animals
- plants...
- food
- colours/shapes
- space
- time
- vehicles
- clothes
- weather
- furniture
- tools

4.1.2 **Sentence Structure**

Does the child use the following type of sentences?

- questions?
- imperatives?
- subject/predicate/object?

4.1.3 **Syntactical Forms**

What is the child's use of:

- pronouns?
- adverbs?
- future tense?
- singular/plural?

4.1.4 Is the child's speech clear and distinct?

4.1.5 Child says "please" when requesting something from another child.

4.1.6 Does the child choose vocabulary to best express his thoughts?

4.1.7 What is the overall impression made by the child when speaking to another child or adult?
4.1.8 **Written Language**

4.1.9 Does the child show evidence of knowledge of left-to-right orientation in the written language?

4.1.10 Does the child show abilities in auditory discrimination?

4.1.13 Can the child recognize the alphabet A - Z?

4.1.14 Is the child able to recognize some word forms? (sun, hat, cat, exit)

4.2 Does the child communicate nonverbally? (Posture and bodily orientation, facial expressions, gestures, eye contact, touch, (contacts made and received), use of space and time, distance ...)

4.2.1 How is the child's posture and bodily orientation?

- comfortable and relaxed
- confident
- poised, straight
- thinking posture
- small controllers
- tense

4.2.2 Which are the child's most common gestures?

- tapping finger
- toe tapping
- nose touching and rubbing
- rubbing the eye
- covering the mouth with the hand
- gestures clarifying the verbal message
- busy hands
- pen or pencil chewing
- tremor of the hand, hesitating or vacillating movement

4.2.3 How is the child's facial expression?

- happy, sincere smile
- reasonably attentive
- sad
- frowning
- blushing
- timid
- bored
- angry
- disgusted
4.2.4 What type of contacts (touches) is the child doing?
- accident
- support
- assistance
- caress
- exploration
- pointing
- hitting
- pushing
- pulling

4.2.5 What are the responses to the child's contacts?
- cooperation
- resistance
- flight
- passivity

4.2.6 Does the child show evidence of good eye contact?
- glance
- gaze

4.2.7 What are the minimum distances between the child and others?

4.2.8 How is the child's use of space in the classroom setting?

4.2.9 Does the child show ability to organize his time well?

4.2.10 How much time does the child spend at each activity?

4.3 What is the child's reaction to the presence or absence of certain materials, supplies and equipment?

4.4 How does the room/centre arrangement affect the children?

4.5 OTHERS
To test the effectiveness of videotaped activities of children's different behaviours used in connection with systematic observational guidelines in order to help pre-service and in-service teachers to be accurate observers of young children's natural behaviour the following pilot study was carried out.

**Subjects**

Subjects of the study were 23 pre-service and in-service teachers comprising the enrollment of Curriculum and Instruction for Young Children class (Ed. 333) during summer session 1981 at U.B.C. Pre-service and in-service teachers were treated as a homogeneous group.

**Procedures**

Pre-service and in-service teachers were asked to observe without interruption a 15 minute segment of videotape No. 1 entitled "Kevin and Aaron". When the videotape showing ended, the participants were asked to write a description of what they saw in the provided observation guide sheets.

Three types of observation guide sheets were administered to the same group at one week time intervals between each test. Before starting another viewing session of the same videotape and the second type of observation, the previous type of observation was reinforced, general positive feedback was given and the criteria of scoring observations was provided.

A 30 minute time limit was set for writing up the first two observations, and 45 minutes for the third type. After completion of the observation guide sheets, all participants were asked to evaluate the observation guide sheets used during the
tests, and give reasons why they preferred the chosen type of observation form.

The observation guide sheets as well as the evaluation form as it was used in the present study is attached in Appendix B.

The following scoring system was established to score each individual test.

Class A. Describes particular observed behaviour, uses professional terminology, is specific, four examples or more are given. 120 or more on a maximum of 150.

Class B. Describes particular observed behaviour, 98 - 119 uses professional terminology, is less specific, gives two examples. out of 150.

Class C. Does not adequately describe particular observed behaviour, is a generalized statement, is vague, incorrect or no examples are given. 70 - 97 out of 150.

Each response sheet was scored by the researcher and another rater according to the scoring procedures established above. Interrater reliability for scored response sheets was .98.
CHAPTER IV

PRESENTATION AND DISCUSSION OF FINDINGS

This chapter presents the analysis of four videotapes and the results of analyses carried out in the pilot study.

V.1 When the videotape recordings were completed, a systematic observational plan was developed and a great amount of data resulted. This data told about the target children as follows:

Tape No. 1

Children's Name & Age: Kevin and Aaron, both 5 years old.

Setting: Child Study Centre, kindergarten classroom.

The observation is based on a 20 minute videotaped sequence in the kindergarten classroom on January 15, 1980.

The observation begins with a choice chart where Kevin and Aaron chose "small blocks".

Kevin is of average proportion, not particularly large boned, neither would he be described as small. He is slim, and his posture is straight and comfortable. He has short brown curly hair, creole skin, and dark eyes, generally clean appearance.

Aaron is a tall boy, well developed for his age, stands up firmly with easy balance. He has longish straight dark hair, creole skin and dark eyes.

Kevin and Aaron have good gross motor skills. Their gross motor activities were integrated with complex actions in the block building centre. Both boys easily move to rhythmic music, skip about 10 feet from choosing board to the small block centre, able to step over block structure without kicking it down. Both children are stretching, crawling on knees, standing, sitting.
They are moving in rhythm with music on the record player. Their head, shoulders, arms and legs are actively engaged. Kevin's balance seemed particularly excellent as evidenced by his leg on a chair and his foot sticking out the other side and standing in this position for more than 20 seconds. Kevin displays flexibility in his body, e.g. laying down, twisting, curling, bending his body, rolling on the floor during block building activity.

Also, Kevin shows good control of arm-eye-hand coordination when he is turning the crank handle in both directions. Kevin and Aaron demonstrate food fine muscle control and eye-hand coordination by placing together quickly and accurately square and unit blocks to make the walls of the house or by placing on the top of the "large switch" block a cone shaped block to form a rocket launch pad. Also, both boys demonstrated capability of fine motor skills by using pincer grasp when they picked up the thin twigs of the "pick-up set".

Kevin began a construction project, Aaron took it over, Kevin protected it and excluded other participants while Aaron was prepared to accept another player. In the beginning Kevin placed blocks alongside, while Aaron fitted blocks together. Though Kevin realized the "boat" part (gothic door shaped block) fit into the dock (large switch block) this fired his imagination and gave the whole construction a climate.

When Darren wanted to enter Kevin and Aaron's play, both are quick to let him know: "You can't put it in ours; you whack the tower" or "We always build things, you don't" and regardless
of Darren's feelings he is not accepted into their play.

At the beginning of Kevin and Aaron's building project, Amir eagerly supplies square and unit block which Aaron is quick to use, but he is not invited in to play. He began some play of his own next to Kevin and Aaron's project.

They are not concerned much about other children.

They are developing reliance and trust of each other as good friends. Kevin and Aaron were a unit of play within themselves singing and socially interacting throughout. They are engaged in a peer centered cooperative play.

A verbal argument occurred when Darren knocked down Kevin and Aaron's "town". This intrusion caused Kevin to react physically "throwing a block" and this terminated Kevin and Aaron's block building experience and they went to the choosing board to choose a new activity. Both boys are able to choose and work independently on a chosen activity, when an argument occurred they were able to solve it without teacher intervention.

Kevin started to choose small block building and Aaron followed him.

They were interested in the block building activity and they kept adding and modifying their structure, e.g. house, garage, dock, and rocket launch pad.

In a background of a record playing children's songs, Kevin and Aaron were alternatively singing and chatting with each other and choosing the appropriate materials for the block building.
Both boys are reorganizing and using not only basic square, rectangle, triangle shaped blocks, they are able to use more complex shapes as "large switch" for tunnel, and cones for the top of the launch pad. Aaron and Kevin note similarities and differences of size, shape and weight of the blocks. For example:

Aaron: "Too big, try this one."

"Here is one that might fit."

In another instance both boys are comparing the bottom of the cones to see if they will fit, and slightly weighing them with their hands.

Aaron's concentration seemed to have increased as the work and plan developed.

Kevin sometimes takes off and picks up a plastic binocular and looks through, then returns to playing with blocks.

Kevin and Aaron's manipulation of their own bodies and materials reflected excellent spatial awareness. They are placing symmetrically and balancing the blocks without knocking them over, also, when Kevin is playing with the toy crane, pulling it up and down, when it was down Aaron said: "Main is the bottom". When the rocket is taking off, Kevin said "psh" and is moving his hands with the cone straight up in the air.

Kevin and Aaron can recognize alphabet letters. They were able to read their own names, and place the name tags beside the activity they chose.

Kevin and Aaron's verbal and non-verbal languages appear to be appropriate for their age level. They are using language to
describe their experiences and to express their feelings. For example:

Aaron told Kevin: "Don't put it in there, that's not how it goes."
"You can't park there. That's where the boat comes out."

Kevin: "It carries blocks."

Aaron: "It doesn't carry blocks, it carries people."
(pushing a block along into the structure)

Kevin: "Is that your house?" (questioned)

Aaron: (gave information) "That's not how it goes."

Aaron's comment based on previous block play experience, e.g.:
"No, don't put it in there, it's hard to get out."

Kevin demonstrates well developed language when he confronts Darren, "You always break things", and continues to argue with reasoning as why he doesn't want him to join in.

Aaron's reaction was giving him a verbal reprimand.

"Look what you did!"

Darren: "No, I didn't."

Kevin: "Yes, you did! You were pressing down hard and it broke."

Darren: "I wasn't pressing that hard."

Kevin's face expressed anger and raising his voice he said to Darren: "You're not playing!" (in frustration, threw Darren's car on the floor)

Kevin and Aaron used words in proper context, e.g. build-
The boys are using appropriate language, speaking in sentences, and their speech is clear.

They use sentences when describing actions or giving directions and are using gestures to reinforce the verbal language.

At the beginning of the tape Kevin is standing in front of the choosing board undecided, watching with wide open eyes, and the moment when he saw Aaron, his face shows a happy sincere smile and with a cheerful voice he invites him, "Hey, you want to play with me?"

Both boys made good use of the materials available in the block building center, fantasizing and imagining things during the activity. Kevin and Aaron chose an activity in a couple of seconds and they are building with great interest for about 15 minutes. Afterwards they choose another activity and play with a pick-up set until the end of the sequence.

Tape No. 2

Child's Name & Age: Zev, 5 years old.

Setting: Child Study Center, kindergarten classroom.

The observation is based on a 20 minute videotaped sequence during free play activities on January 21, 1980.

Zev is a small slim boy, his posture and bodily orientation is controlless and tense. He has long brown hair, palid face, and blue eyes.

Zev's gross motor actions were limited during the obser-
ved period. He was hopping, jumping, stamping his feet, his movements were jerky and his fidgeting and constant bodily movements are quite disruptive.

Zev's motor activities were integrated with other actions. For example, Zev covers his mouth with a book, looks undecided around the room, chews his lips, aimlessly wanders around, leaves the book on a shelf and finally approaches the calendar on the wall next to the choosing board, watches the calendar balancing his body moving the weight from right to left foot. He chose to work on this week's theme "Dinosaurs". Zev is hopping back to the shelf where he left his drawing book, also, there were other books displayed about dinosaurs. He is stamping and rubbing his legs. Zev started to look in his drawing book, turning the pages, he is yawning and again his legs are constantly moving. The teacher directed him and helped to get him started in the activity. Zev chose to draw an alticamellus. He is working alone, nobody in his close proximity.

Zev is holding correctly the pencil with his right hand, follows the directions from the drawing book, draws circles, rectangles and ovals and confronting again what he did with the directions from the book.

Kevin is coming along and is asking Zev, "What dinosaur is this?"

Zev answers promptly, "Stegosaurus", and continues to draw.

Later Mark asks him, "Is this a brontosaurus?"
Zev answers, "Yup."

He continues to draw, and sometimes is easily distracted and looks at the other children around him.

Zev finished drawing and goes beside the teacher (leaning on the edge of the table) and telling her, "Carol, look what I draw. I copied from my dinosaur book."

It is an alticamellus.

The teacher helps him to spell alticamellus and she adds it is 18 feet tall.

Zev repeats, "Alticamellus. 18 feet tall." He spells along with the teacher the syllables of the word "al-ti-ca-mel-lus".

Zev's pronunciation of the above vowels and consonants is very clear and he shows an awareness how the sounds form the word.

Zev took his drawing and wanders around showing his alticamellus to children working near to him. Helen becomes interested in Zev's drawing and she decides to draw an alticamellus too. Zev is cooperative and shows his drawing book and gives her directions. For example, Helen is drawing a circle and Zev said, "Good. Then go with this." (Pointing from the book.) "After that, this and this. Now you do a rectangle." (Pointing again with his index finger, and his body or legs are fidgeting again. When Helen finished her drawing she went to another activity center, and Zev went to watch a group of children playing a guessing game. He wanted to join in saying, "I want to be the
guesser. I want to be the guesser." (jumping and hopping around with a bag full of rubber dinosaurs in his hands) but he wasn't accepted because it was not his turn.

Zev in the first part of observation was not talking. He was communicating through his gestures, timid facial expressions and jerky unsteady bodily movements making an impression of uncertainty and confusion. When Helen started to interact with Zev he started to verbalize his actions and express his thoughts. For example: draw, drew, copied, do, can. Words designating shapes: round, square, rectangle, oval. Animals: dinosaur, stegosaur, brontosaur, alticamellus.

Zev sometimes answered to children with a single word, steposaurus. Yup. When he was giving directions, he used the imperative sentence structure, e.g. "Now do this, then, that ... Zev is able to use complex sentences too, e.g. "Carol, look what I draw, I copied from my dinosaur book."

Zev did not use intensely the materials available around him. During the chosen activity he was using his dinosaur book and rubber collection, and a piece of paper and a pencil.

Tape No. 3
Child's Name & Age: Shawna, 5 years old.
Setting: Child Study Center, kindergarten classroom.
Shawna is tall, large boned, healthy looking girl. She stands straight and confidently with easy balance. She has short light coloured hair and skin, rosy cheeks and blue eyes. Shawna is neat and clean at the beginning of observation, and she remains
that way until the end.

At the beginning Shawna chose to work in the "paper center". She placed her name tag quickly on the choosing board (paper center) and she skipped without losing her balance about 15 feet to the center. Shawna sits beside Beth, Erica, Ann and Carla. She decided to make a dinosaur card. She took a piece of construction paper, folded it perfectly in two, and started to trace around a "big fat dinosaur". She holds the pencil in her right hand with good eye-hand coordination and with very steady hands she traces well the dinosaurs. She is talking to the girls around the table but her hands are busy again and on the opposite side of the paper she traces another skinny dinosaur.

Shawna's fine motor activities were frequently well integrated with more complex actions. For example, Shawna folded the paper and on the front of the card she drew a big "5" using a stencil and then she printed her first name, "Shawna", and started to sing, "Five little silly bugs ..." On the table was some cutting out papers from different magazines. She took one sheet and cut out a doll and pasted it on the right corner of her card.

When she finished, Shawna called the others attention to her skills, "Look what I cut out", and appears to feel that she should be good at things. She appeared to be surprised when Erica told her, "I don't care". Shawna often chooses art activities. She just finished her card and skips nicely to the choosing board and changes her name from paper center to drawing center. (Following the rules.) At the drawing table she wanted to
make screen paintings but the screens were busy. The teacher asked her to wash the dishes (which had been used by other children in the cooking center) and she promptly climbed up on a chair and she washed and rinsed the dishes. When she finished she called out, "I just did the dishes."

Shawna was wearing a painting smock and was anxiously waiting for her turn. She was watching Darren without disturbing him. Finally, it is her turn and with perfect technique she screen painted a dinosaur (using brown paint) and immediately wants to paint another dinosaur (a different shape, using green paint). When she finished, she printed her first name on the right corner of the paper and left her painting on the drying rack. There is still a little time left and Shawna moves to the painting easel. She draws three pine trees then she heard the clean-up signal (music). Her hands move faster in the upper left corner of the page and she draws a happy sun and then removes the page and puts it on the drying rack. Shawna forgot to sign her name on the painting. She took a pencil from the drawing table and kneels down beside the drying rack and signs her name. Shawna is very sociable. Her hands and attention are on the project, but her mouth is busy talking to playmates.

Shawna choses the right vocabulary to express her thoughts and her speech is very clear. Words used during the observation: mom, friend, card, donosaurus, dishes, big, fat, mini, orange, brown, and did, paint, like, cut.

Shawna used different sentence structures. For example:
"I used to think Beth is really cute."
"I used to very like her but now I don't."
"Look what I cut out."
"I just did the dishes."
"How do you spell 5 years old?" (question)
"Hang it up!" (imperative)

She was not heard to make errors with the use of single and plural nouns or verb forms.

The pronouns Shawna used included: I, my, her, he, you, they, it.

Shawna obviously has the concept of alphabet, and numbers. She printed several times her first name during the observation period and on the card made in the paper center she drew with stencils the number "5". Also, she has the knowledge of left to right orientation in the written language.

Shawna's gestures are clarifying the verbal message. For example: When she wrote five using her right hand, with the left she pointed 5.

Shawna is a very organized child. She has a plan in her mind, she follow the general rules in the classroom, makes good use of the materials available in the center and successfully completed five activities during the "free play time".

Tape No. 4
Child's Name & Age: Aaron, 5 years old.
Setting: Child Study Center, kindergarten classroom.
Aaron is the same boy who was presented in Tape No. 1.
This sequence was videotaped two weeks later.

Aaron is standing undecided in front of the choosing board. He is looking around, trying to find a partner. Aaron appears to put his name tag in the little block center, no he changed his mind. He is choosing language arts center. He changed his mind again and chose to play in the house center. Dafne came to the choosing board and Aaron asks her, "Dafne, where are you going?"

Dafne chose the paper center and placed her name tag beside Shawna’s and Carla’s. Aaron is thinking for a moment and after 4\(\frac{1}{2}\) minutes of hesitation and vacillating movements he decides to work in the "paper center" with Dafne. In the paper center, Aaron takes a piece of paper and folds it - it looks like he is making a pointed hat.

Dafne announced, "I will do a puppet." She asks Aaron, "Do you want to make a puppet?"

Aaron said, "No." (shaking his head). Aaron asked her again, "What kind?"

Dafne: "A bag puppet."

Aaron and Dafne continue their own project and are not interacting anymore till the end of the videotaped sequence. Aaron is folding and smoothing his paper and he is looking at Shawna and waiting to get the stapler.

Aaron asks Shawna: "Are you making what I am making?"

Shawna: "No, I am making a kite."

Aaron is stretching out for the stapler carelessly gaz-
ing at Shawna and telling her: "This is just gonna be a purse, is where you put stuff in it."

Shawna: "What?"

Aaron: "I said this just gonna be a purse."

Shawna is trying to grab the stapler in a movement of resistance. He smiles and lets her have the stapler.

The presence of the single stapler in the center created an interesting interaction between Aaron and Shawna. Aaron's facial expressions, eye contact reveal his feelings of this interchange.

Aaron takes another piece of paper and cuts it with "sharp scissors" and staples together with his "purse". He is pressing the stapler with both hands and his trunk and shoulders are leaning ahead. In this sequence Aaron participates in associative play. He does not show evidence of disruptive behaviour and he rather follows girls around him.

Discussion

The first impression gained from the videotapes is that the kindergarten classroom is a remarkably busy place and each child has unique and special qualities. All the children do not think identically, are not equally skilled nor are they interested in or concerned by identical problems. All the children are constantly behaving, behaviours are transitory, a child who played today cooperatively and was the natural leader of the play, the same child in another occasion could be a permissive follower.

Aaron is a tall agile boy, well developed physically.
Zev compared to Aaron is a small, skinny, palid child. Shawna is large boned, taller than Kevin.

Kevin, Aaron and Shawna's posture and bodily orientation are comfortable and relaxed, Zev's is controlless and tense. Kevin and Aaron showed well developed gross motor skills during block building activity. For Shawna and Zev were limited opportunities to observe gross motor skills.

All four target children showed evidence of well developed fine motor skills. Shawna impressed as being very independent, competent and capable in most areas. She approaches situations with great confidence and this proves an important personal asset. Shawna's repertoire for maintaining a dominant position is quite extensive, she was typically successful in getting others, even teachers, to accommodate her desires.

Zev is opposite. He is dependent in most situations, is easily distracted from his project, and is not aggressive nor brilliant.

Kevin and Aaron are peer oriented children. They were a unit of play within themselves, worked independently and when an argument occurred they were able to solve it without the teacher's intervention.

In Tape No. 4, when Kevin is absent from the kindergarten, Aaron appears to be lost and really misses him.

All the children have a well developed vocabulary for their age level, they love to talk, express their own feelings and listen.
All target children showed evidence of developing non-verbal communication skills. The non-verbal modalities found to be of prime importance in interaction with peers are gaze and distance. Aaron's appreciation of distance and gaze as cues to attraction and liking is well established. He plays in close proximity of Kevin and Shawna. Other children and adults are at a close distance with Shawna but at a far distance with Zev.

All target children showed different abilities and interests in using the space and materials.

In Tape No. 1, Kevin and Aaron started at the "choice chart" and worked in the small block center and small manipulative toys center. (No. 2 & 14 - for location of activity centers see Appendix A.) They made good use of the very large set of unit blocks, used a large variety of different shaped blocks, and correct use of pick-up set.

In Tape No. 2, Zev, in the beginning, was wandering around then he decided to work on the "Theme" (Center No. 11) for most of the time, and only at the end watched a group of children playing a guessing game in the library center (No. 13). Zev during his free play activity used a drawing book, one single sheet of paper, a pencil, and was holding a bag full of rubber dinosaurs.

In Tape No. 3, Shawna started at the "choice chart". She went to work in the paper center (No. 10). She used paper, coloured pencils, stencil, scissors, glue, and then she washed the dishes (plastic medium size dish, hand mixer, spoons, wooden
spoon). At the round drawing table (center No. 6) she used the screen, two pieces of paper, two different colours. Finally she moved to painting at the easel (center No. 9). She used five different colours, paint brushes and paper.

In Tape No. 4, Aaron hesitated for awhile around the "choice chart". Then he chose to work all the time in the paper center (No. 10). Aaron used two pieces of construction paper (different colours), stapler, scissors, one felt pen, and a piece of cardboard paper.

A striking difference between the children was in their ability to "choose an activity" and their use of free play "time".

Figure I

Amount of time spent on chosen activities by each child.

Tape No. 1  
Kevin & Aaron

- Organizing period (1 ½ min.)
- First activity (13 ½ min.)
- Second activity (5 min.)

Tape No. 2  
Zev

- Choosing and get started (4 ½ min.)
- First activity (12 ½ min.)
- Second activity (3 min.)
Children in tapes No. 1 and No. 3 chose an activity instantly, however, children in tape No. 2 and No. 4 find it very difficult.

The preceding comprehensive statements about Kevin, Aaron, Zev and Shawna are based on a relatively brief period of observations. It was done in only one setting, the target children's kindergarten classroom. Other information gaps are due to the absence of particular actions on the part of the observed children. Additional observations at diversified time periods, in other activity centers, outdoor playground or other settings (such as children's own homes) would be useful to determine whether their patterns of behaviour are significantly influenced by context or time, changes in behaviour over time will indicate growth or lack of progress in various areas of development.
The following results of analysis were obtained for the pilot study:

Table I summarizes the scores obtained on each type of observation guide and preferred types of forms.

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<th>Participant's I.D.</th>
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<th>Observation Type 2</th>
<th>Observation Type 3</th>
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Obtained Class

\[ A = 2 \quad A = 4 \quad A = 10 \]

\[ B = 10 \quad B = 12 \quad B = 8 \]

\[ C = 11 \quad C = 6 \quad C = 2 \]
Table II.

Summary of Frequency of Score Distributions

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N = 23  N = 22  N = 20
Table III summarizes the means and standard deviation of the tested observation guide sheets.

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<td>94.86</td>
<td>15.1</td>
</tr>
<tr>
<td>N = 23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type 2</td>
<td>107.59</td>
<td>13.88</td>
</tr>
<tr>
<td>N = 22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type 3</td>
<td>114.65</td>
<td>13.65</td>
</tr>
<tr>
<td>N = 20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 2%: Graphical Representation of Mean Scores.
Table IV summarizes the frequency of preferred types of observation guide sheets as stated in the evaluation forms.

<table>
<thead>
<tr>
<th>N = 20</th>
<th>Observation Type 1</th>
<th>Observation Type 2</th>
<th>Observation Type 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>6</td>
<td>10</td>
</tr>
</tbody>
</table>

Table V shows the participant's over-all evaluation of observation guide sheets.

<table>
<thead>
<tr>
<th>N = 20</th>
<th>Excellent</th>
<th>Good</th>
<th>Of Little Value</th>
<th>Useless</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>17</td>
<td>2</td>
<td>-</td>
</tr>
</tbody>
</table>

Table VI shows the participant's attitudes toward usefulness of observation guide sheets in direct observation of children in a classroom.

<table>
<thead>
<tr>
<th>N = 20</th>
<th>Very Useful</th>
<th>Useful</th>
<th>Somewhat Useful</th>
<th>Not Usable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>12</td>
<td>4</td>
<td>-</td>
</tr>
</tbody>
</table>
Discussion

The guide sheets were preferred for the following reasons:

Observation guide sheet Type 1 was preferred because it allowed freedom. It was found to be too general, too vague, and used with the videotape helped to give a general overview.

Observation guide sheet Type 2 was preferred because it directed the observation in the major areas of early childhood education, but still allowed some freedom.

Observation guide sheet Type 3 was preferred because it was specific, it helped to observe more accurately.

As stated by the participant's observation, Type 3 would be even more often preferred if a longer time limit would be allotted for writing up the observations.

From the test scores, shown in Table II, results for observation Type 1 are significant at "C" level.

For the observation Type 2, "C" level decreased significantly and increased levels "B" and "A". For observation Type 3, level "A" indicates a significant increase in scores. Two participants obtained scores under 90, because they did not follow the directions of the observation guide sheet and often "yes and no" answers were given.

The above results of test scores and the frequency of preferred types of observation guide sheets indicates that videotape recordings displaying children's different behaviours used with structured observational guidelines are effective ways to increase pre-service and inservice teachers observational skills.
CHAPTER V

SUMMARY AND CONCLUSIONS

This chapter is divided into two sections. The first section presents a brief review of the purposes of the study and research procedures. The second section presents conclusions and suggestions for further research.

**Purposes**

The first purpose of this study was to accumulate videotaped data about four target children who displayed different natural behaviours during chosen free play activities, and to develop a systematic observational plan for analysis of videotaped information.

The second purpose of this study was to test the effectiveness of videotaped records displaying children's different behaviour used in connection with structured observational guidelines in order to help pre-service and in-service teachers to be accurate observers of young children's natural behaviour.

Two basic procedures were used in this study.

1. To accumulate videotaped data about young children's behaviour, four target children were selected and videotaped. A 20 minute continuous free play activity was retained as a "record tape" for each target child.

For analysis of obtained videotaped records, a systematic observational plan was developed.
(2) To test the effectiveness of videotapes used in connection with structured observational guidelines, the following procedures were used:

Subjects of the study were 23 pre-service and in-service teachers enrolled in Curriculum and Instruction for Young Children class (Ed. 333).

Pre-service and in-service teachers were asked to observe without interruption a 15 minute segment of videotape No. 1 entitled "Kevin and Aaron". When the videotape showing ended, all the subjects were asked to write a description of what they saw in the provided guide sheets. Three types of observation guide sheets were administered to the same group at one week time intervals between each test. After completion of the observation guide sheets, all subjects were asked to evaluate the videotaped observations and guide sheets used during the test.

Conclusions

Videotape recordings helped to decode objective information about the natural behaviour of young children. There were three principal advantages of this method of data collection. First, comprehensive records of displayed behaviours could be preserved for subsequent and repeated examinations. Second, the fidelity of the system was good. The camera had no difficulty to record the behaviours in the kindergarten setting. Third, the playback control mechanism on the tape recorder permitted fast stopping and rewinding. As a consequence, sequences of behaviour could be viewed and re-viewed at will.

The systematic observational plan helped to focus the
observations. Several viewings of each tape were required in order to identify the behaviours and record them into categories of areas of development of young children.

From analysis of videotaped records, it may be concluded that the kindergarten classroom is a remarkably busy place and each child is unique and has special qualities, different abilities and needs.

Results of analysis carried out in the pilot study demonstrate a significant difference between test scores obtained on observation Type 1 and Type 3. This significance is confirmed and by the correlation between the means and frequency of preferred types of observation guide sheets. However, it is possible that the course (Ed. 333) had a positive influence on the students in terms of their ability to select and observe children's behaviour.

The use of videotapes and systematic observational guidelines was found to be an effective way to present common experiences for group observation. Since a student or a young inservice teacher cannot be expected to be expert observers, it is most important that they are guided in what to observe and, having seen, to make valid interpretations of displayed behaviours.

Videotapes displaying children's different behaviours used in connection with structured observational guidelines helped pre-service and inservice teachers to be accurate observers of young children's natural behaviour.

Videotaped observational methods are not without its problems. Limitations exist in all measurement systems, includ-
ing observational ones. Such limitations must be clearly recognized and reduced whenever possible. Overall, the direct use of videotapes in systematic observations provide great promise for exciting investigative adventures ahead for E.C.E. educators ready to accept the challenge.

Suggestions for Further Research

The following suggestions for further research are presented:

(1) Further studies might be carried out collecting at least three "record tapes" at diversified time periods for target children from different school district kindergartens or provinces. Such a data bank would provide pre-service and in-service teachers adequate information about local, regional or provincial differences, would help teachers to accept these differences, and prepare them to meet the different needs of young children.

(2) That another research study might be conducted using the materials of the present study, modifying the role of the researcher with an authoritarian instructor employing competitive instructional strategies instead of cooperation as it was used in the present study.

(3) That replication of this study can be carried out using a different design to check the validity of its findings. If valid, they suggest that training might be scheduled in a variety of ways to satisfy administrative
and personal requirements.

(4) Further studies, using the materials of this study, might be carried out with the following modifications: After several introductory observations, the participants would choose an area (e.g. social, cognitive ...) or problem (e.g. aggressiveness ...) and develop a "new plan" or extend the present one in order to gather more information about the chosen area or problem. Try out the "new plan" through observation in a classroom and share the revised observation plan with the group of pre-service or in-service teachers. In this way each participant would contribute to investigative activity in observation methods and would increase its scope and applicability to real-life conditions in early childhood education.
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APPENDIX A

Physical Layout and List of Materials Available in the Classroom
LAYOUT OF THE CLASSROOM

Scale 1" = 3'

X. Choice Chart
I. Large Group Center
2. Block Center
3. Science Center
4. Water Table
5. Sand Table
6. Drawing Table
7. Modelling Center
8. Cooking Center
9. Easel
10. Paper Center
II. Theme - Small group
12. Language Arts
13. Library Corner
14. Construction and manipulative toys
15. House Corner
16. Music Center
LIST OF MATERIALS

1. Block Building Materials
   - unit blocks - units, triangles, half circles, large and small switches, curves, ramps, arches.
   - accessories - miniature cars, trucks, family figures, animals, small coloured cubes.

2. Science Supplies - magnifying glasses, horseshoe magnets, thermometer, seeds ...

3. Water Table.

4. Sand Table.

5. Screens and different colours for painting.


7. Clay and plasticine - boards, wooden knives, rolling pins.

8. Cooking Supplies - pots and pans, egg beaters, measuring spoons, wooden spoons, saucepans, scoops.

9. Easel - easel paper, paint, long handled brushes for each paint container.

10. Paper Center - paper in different sizes and colours, stickers, threads, crayons, marker pens, pencils, scissors, hole punchers, glue, cellophane, tinfoil, feathers, beads ...

11. Theme - books, drawing books, miniature dinosaurs.

12. Language Arts - easy readers, flash cards, paper, pens, pencils, erasers.

13. Library Corner - about 50 books on different subjects, film strips, slides, hand puppets.

14. Manipulative Toys - picture Lotto games, puzzles, varying degrees of difficulty Lego, interlocking sets, pick-up sets, cards, pennies for beads for classification, flannel board and figures.
15. House Center - doll bed and bedding, dolls, doll clothing, stove, cupboard, sink, dishes and cooking utensils, ironing board, iron, child size table and chairs, telephones, brooms, 2 mirrors, full-length, dress-up clothes.

16. Music Center - piano, tambourines, bells, drums, xylophones.
APPENDIX B

Description of Observation Guide Sheets Type 1, 2, 3, and the Evaluation Form as it was used in this Study
OBSERVATION GUIDE SHEET TYPE 1

Observer: ____________________________ Date: ____________________________

Child's Name: ________________________ Time: from____ to______

Setting:

Directions: Observe all the behaviours displayed by the children during a 15 minute period in which they are engaged in the chosen activity/activities. First, observe the videotape and then write a description of what you have seen.

Description:
OBSERVATION GUIDE SHEET TYPE 2

Observer: ___________________________ Date: ___________________________
Child's Name: ___________________________ Time: from _______ to _______

Setting:

Directions: Observe the behaviours displayed by the children focusing on the following points:

GUIDELINES

1. LANGUAGE
   - Are the children communicating?

2. PHYSICAL DEVELOPMENT
   - Are the children happy and in good physical condition?
   - Are the children showing a developed muscular control?

3. AFFECTIVE AND SOCIAL DEVELOPMENT
   - Are the children sharing with others in work and play?
   - How are the children selecting activities - alone or with others?
   - What actions or activities are the children initiating or organizing?

4. INTELLECTUAL AND COGNITIVE DEVELOPMENT
   - Are the children choosing appropriate tools/materials?
   - Are the children showing an understanding of the alphabet, words, numbers ... ?
5. Describe and comment on any other relevant activity or activities of the children.

Description:
OBSERVATION GUIDE SHEET TYPE 3

Observer: ___________________________ Date: ___________________________

Child's Name: ___________________________ Time: from ____ to ____

Setting:

Directions: Observe all the behaviours displayed by the children focusing on more specific details in language, physical, affective, social and intellectual/cognitive areas of development.

GUIDELINES

1. LANGUAGE

1.1 How are the children using the spoken language? (vocabulary, sentence structure, syntactical forms ...)

1.2 Are the children communicating nonverbally? (gesture, facial expression, eye contact ...)

1.3 Are the children using appropriate language for their age level?

2. PHYSICAL DEVELOPMENT

2.1 How do you view the children's physical characteristics?

2.2 What are the children's abilities to use and control large muscles (legs, arms, body) and fine muscles (fingers, hands)?

3. AFFECTIVE AND SOCIAL DEVELOPMENT

3.1 Are the children expressing their own feelings?

3.2 Are the children developing independence?

3.3 Are they sensitive to other's feelings and views?

.../2
3.4 Are they helping other children?

3.5 What type of play activities are the children engaged in? Is it parallel, cooperative, solitary ... play?

3.6 What are their manners of controlling others? (leader, follower, clown ...)

3.7 Are the children showing evidence of disruptive behaviour?

3.8 Are they often involved in arguments or fights?

4. INTELLECTUAL AND COGNITIVE DEVELOPMENT

4.1 Are the children showing an interest in the project/activity?

4.2 Can they use materials in different or creative ways?

4.3 Are they assembling materials and manipulating equipment?

4.4 Are they showing evidence of knowledge of left-to-right orientation in the written language?

5. Describe and comment on any other relevant activity or activities of the children.

Description:
OBSERVATION GUIDE SHEET EVALUATION FORM

Evaluator: __________________________ Date: __________________________

1. Which type of observation guide sheet do you prefer?
   - observation guide sheet type 1
   - observation guide sheet type 2
   - observation guide sheet type 3
   (Place a checkmark in the blank space).

2. Give reasons why?
   -
   -
   -

3. What are the strong points of the observation guide sheet?
   - type 1?
   - type 2?
   - type 3?
   (Please comment).

4. What are the weak points of the observation guide sheet?
   - type 1?
   - type 2?
   - type 3?
   (Please comment).

5. What is your overall evaluation of the preferred observation guide sheet?
   Excellent __________________________ Or little value __________________________
   Good __________________________ Useless __________________________
6. Would the observation guide sheet be useful in observing live children in a classroom?

Very Useful Somewhat Not useful
useful usable

(Place a checkmark in the blank space).