A SURVEY OF SELECTED KINDERGARTEN PROGRAMS FOR THE
DEVELOPMENT OF LARGE MUSCLE SKILLS
AND ACTIVITIES

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The problem of this study was to survey the general programs of ten selected kindergartens. The purpose of the study was to survey the general programs and to report through the analysis of gathered data what percentage of the school day was devoted to the various activities which constituted the kindergarten curriculum.

Data were gathered in four ways: teacher interview, teacher's self-report questionnaire, observational checklist, and motion picture filming. Through the analysis of the data gathered, answers were sought to the following research questions which were generated at the onset of this study:

What kinds of equipment and materials are available for the physical activities?

What kinds of equipment and materials are used?

What specific large muscle equipment is provided on the playgrounds?

What is the range and types of physical activities provided?

What kind of program planning and implementation by the teacher exists?
Chapter II contains a review of literature and research related to the development of large muscle skills and activities. The areas include research related to the role of play, muscle development, motor development, motor behavior and skill development, and physical education programs.

Chapter III is a review of literature related to certain critical questions concerning the programs for large muscle development in kindergarten. This literature deals with the kinds of equipment needed in kindergarten programs to foster physical development, the needed outdoor playground equipment and apparatus, the needed specific physical activities which are based on the developmental characteristics of the five-year-old to aid in the development of motor skills. Research related to a well-balanced kindergarten day and the necessity for planning a kindergarten program for large muscle development based on the developmental level of the individual and the class is included also.

Summary of Findings

Equipment and materials available were used.

Playgrounds were poorly equipped.

There was an acute shortage of equipment such as wheeled toys, jump ropes, balls, and hoops.

Teachers did not plan programs or try to teach large muscle skills.
Teachers' professional qualifications were generally adequate but evidences of program planning and record keeping were lacking.

Based upon the results of this study, the following recommendations are made:

More equipment and materials are needed in Texas kindergartens.

Cooperative work and planning would insure some better equipped playgrounds.

Playgrounds should be provided with more than the traditionally supplied stationary apparatus.

Major portions of each day should be devoted to aid in the development of large muscle skills and activities.

During a part of the outdoor playtime, skills should be taught.

Programs for large muscle and skill development must be carefully planned and carried out regularly.

Studies and/or evaluations need to be made of all educational programs for young children in Texas to determine the depth, scope, and the degree to which physical activities programs are provided for children.

A study should be made to develop standards by which evaluations can be made of programs for the development of physical-motor skills for young children.

Studies should be made which would result in the development of instructional guides for programs of physical-motor skills.
A SURVEY OF SELECTED KINDERGARTEN PROGRAMS FOR THE
DEVELOPMENT OF LARGE MUSCLE SKILLS
AND ACTIVITIES

DISSERTATION

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CHAPTER I

INTRODUCTION

A new cornerstone in the foundation of Texas public school education became a reality when the Sixty-first Legislature passed House Bill No. 240. Under the provisions of H.B. 240, each local district was obliged to begin a Minimum Foundation School Program for kindergarten-aged children in the 1970-1971 school year.

Obviously, much planning and groundwork went into the formulation of H.B. 240. It was a first step toward a system of free, public kindergarten for all five-year-old children of Texas. Attendance will be on a voluntary rather than a mandatory basis, and not until the 1977-78 school year will all five-year-old children be eligible to enroll. The first three years, 1970 through 1973, are designed to admit only "educationally handicapped children."

With the beginning of any totally new program, there will be a deep concern about the program--its implementation, methods, outcomes, and evaluation. This study was not intended to be an evaluation of programs, facilities and equipment, or teachers. Instead, it was to be a survey of the total general programs of the kindergartens investigated. Particular attention was directed not toward the academic
program but rather toward the program for the development of large muscle, physical motor skills.

In general, the teachers who began teaching kindergarten in the 1970-71 school year probably had limited training and/or experience in working with the kindergarten-aged child. If this statement is true, they may not fully understand the implications and importance of a thorough, well-planned, and well-administered program for the development of large muscle, physical motor skills.

Landreth (5, pp. 171-175) pointed out that there is a positive relationship between motor and language development, motor and mental development, motor and social behavior, motor and emotional behavior and personality characteristics, and motor characteristics and learning problems. Many of the above relationships can best be observed while the young child is engaged in play.

Play is a natural activity of young children, and one in which they are eager to participate. The values of play have been recognized by many educators for many years. Anderson, Elliot, and La Berge (1) pointed out that the general purpose of play is child development through activity. Play also has specific purposes. These purposes include, among others, the development of social skills, the development of a good self-concept, and the development of lasting health practices and recreational skills. Play also helps the child learn to move efficiently and to develop his motor skills.
The development of the young child's muscles and muscular skill is a complex, important, and interrelated phase of his general growth and development. The development of muscle control and its interrelatedness with other body functions and systems provides the body with strength, power, agility, and general control of all body movements (4).

Gardner pointed out that even from the beginning of life, a child's motor behavior is playing a part in his perception and awareness of his world. Through the motor activity of the eyes, hands, and whole body, the child can begin to manipulate and make major changes in his environment (4, p. 148).

Since motor development is of such great importance and since the early childhood years are a natural time of almost continuous gross motor activity, it should be evident that positive guidance of motor development should not be left to chance. The teacher has an obligation to plan his program carefully.

In planning any program of physical activities, it is most important that the teacher know and understand the basic characteristics of growth and development. He should be aware of the stage of bodily maturity as well as of the level of personality development of the child (6). Only then will he be able to plan effectively a well-rounded program that will meet the needs of the child. And, in order to truly meet the child's needs, the teacher will need to plan some
movement skill activities for children on an individualized as well as a group basis.

The importance of an individualized program can be inferred from Frost and Rowland. They have pointed out that there is a positive relationship between physical fitness and social, emotional, and mental factors of development and that this positive relationship should lend support to the demand for comprehensive physical education programs for all levels of our schools (3, p. 428).

Therefore, this study endeavors to establish the justification and necessity for a strong physical motor skills program while revealing the actual programs of some selected schools. According to a bulletin published by the Association for Childhood Education International,

When physical education is viewed as a means through which educational objectives can be attained, when plans are designed for a progression of activities leading beyond today, when specific skills relating to the characteristics of children are planned and taught, then, and only then, will each child be educated to his fullest capacity (2, p. 21).

Statement of the Problem

The problem of this investigation is to survey the total programs of selected kindergartens. Major emphasis on the program for the development of large muscle skills and activities will be carried out in the analysis.
Purpose

The purpose of this study is to survey the general program of selected kindergartens and to report the extent to which the programs are being carried out in terms of (1) the equipment and materials available, (2) the equipment and materials used, (3) the kinds of activities provided, (4) the evidence of program planning and implementation by the teacher, (5) the evidence of teacher understanding of importance and implications of a structured motor skill activities program, and (6) the teacher's training and experience.

In order to carry out the purposes of this study, the following research questions related to these purposes have been formulated. These questions will be answered in Chapter IV according to criteria formulated through authoritative literature and research.

Research Questions

I. What kinds of equipment and materials are available for the physical activities?

II. What kinds of equipment and materials are used?

III. What specific large-muscle equipment is provided on the playgrounds?

IV. What is the range and type of physical activities provided?

    A. What percentage of the activities provided are for physical development?
B. What percentage of the physical activities provided are specifically for the development of large muscles?

C. What percentage of the physical activities observed are free play and free work?

D. What percentage of the large-muscle activities are teacher initiated? What percentage of the large-muscle activities are student initiated?

E. What percentage of the kindergarten day is spent in the following kinds of activities?

1. large-muscle activities,
2. small-muscle activities,
3. general arts (dramatics, puppets, art activities),
4. music and rhythms,
5. readiness games and activities,
6. language development (stories, poems, show and tell, etc.),
7. academic instruction,
8. lunch and/or snack,
9. rest and/or nap,
10. standing in line.

V. What kind of program planning and implementation by the teacher exists?

A. Are activities and instruction provided on an individualized basis?
B. Are audio-visual aids used in association with the activities of the program?

C. Are demonstrations utilized in the program?

D. Are written records regarding the physical-motor progress kept on each individual child?

E. Is an instructional guide provided for the teacher's use?

F. Are physical motor skills presented in a planned scope and sequence?

G. Does the environment become over-stimulating?

VI. In what ways does the teacher provide evidence that he knows and understands the importance and implications of a planned educational program?

VII. What are the teacher's qualifications?

A. Has he had experience or training in working with young children?

B. Has he had formal training or experience in early childhood education?

Basic Assumptions

The fundamental strength of this study lies in the basic assumption that there is a fundamental and intricate relationship between the development of the child's physical motor skills and his intellectual development.

It was generally assumed that sensory motor development is a precursor or concomitant of cognitive development.
It was assumed that the teachers of the selected samples were generally representative of other minimum foundation program kindergarten teachers in regard to professional credentials, training, types of experience, educational philosophy, and methods of instruction.

It was assumed that the teachers would answer honestly on the survey instrument and in the interview schedule.

It was assumed that the day(s) on which the data were gathered would be typical of the activities program that was generally followed.

Definition of Terms

**Academic instruction.**—For the purpose of this study, academic instruction refers to any occasion or situation, whether planned or incidental, in which the teacher is engaged in teaching a lesson or attempting to develop a concept through lecture, guided discussion, or the use of audio-visual aids.

**Physical motor skills.**—In this study, physical motor skills refers to any skill demonstrated by the child which is the result of learning through practice. Examples are dodging, balancing, and throwing.

**Large muscle activities.**—Large muscle activities are those activities which clearly demand the work and energy of the large muscles of the arms or legs and trunk. Examples are running, jumping, and climbing.
Large muscle equipment.—Large muscle equipment refers to any and all equipment designed specifically for or used incidentally for the purpose of large muscle activity. Examples are tricycles, balls, jump ropes, and jungle gyms.

Preschool.—In this study, preschool is used to refer to children from the ages of about three years old to about six years old or to those children more than three years old who have not started to school in the regular or public first grade.

Physical motor skills program.—The physical motor skills program refers to a carefully planned and executed physical activities program which is based on the developmental needs and abilities of the individual child or group and which is organized in scope and sequence so that the individual child can be able to participate successfully at all times at his own level of achievement.

Physical education program and physical activities program shall be synonymous.

Limitations

This study was limited to those programs which included only children definable as educationally handicapped because of either a lack of proficiency in the English language and/or minimum economic guidelines. This limitation was imposed because this year was the first year of operation of the minimum foundation kindergarten program in Texas.
This study was limited to ten classrooms. The ten classrooms were in fewer than ten schools and were within a radius of 200 miles of Denton, Texas.

Instruments

The data for this study were gathered through the use of four instruments. An observational grid chart (Appendix A) was constructed so that data could be gathered while observing and making checks (✓) in the appropriate spaces on the observation instrument. A new instrument was marked every ten minutes during the visit. A self-report questionnaire was constructed to gather personal and professional information from each teacher taking part in this study (Appendix B). This information was utilized in helping to answer the research questions which were formulated concerning teacher preparation and qualifications. A personal interview schedule (Appendix C) was constructed so that certain questions might be asked of each teacher. These questions and answers were recorded on magnetic tape for later analysis. Finally, data were gathered through the use of a super-eight movie camera.

Procedures for Collecting Data

The data for this study were collected from ten kindergarten classrooms. No attempt was made to select the schools or classrooms randomly, as these new minimum foundation kindergarten programs were required to begin in every
district which had children who meet the language and economic qualifications of the program. However, for this survey only schools were selected for which this was the first year of operation of the minimum foundation program.

All of the data for this study were gathered through direct observation, self-report questionnaire, tape-recorded interview, and filming. The teachers were scheduled in advance so that they would know which day they would have an observer in their classrooms. However, the teachers were not informed of the major purpose of this study.

There were several conditions concerning days on which data were to be gathered. The weather had to be pleasant enough to allow the teacher an opportunity to take his children outdoors if this activity was a normal part of his program. Data were not gathered on cold, windy, or wet days. The only exception to this rule was made when the school in which the survey had been scheduled had an indoor facility (gymnasium or playroom) which was ordinarily and regularly used by the kindergarten on days of inclement weather. This information was obtained from the teacher as the programs were scheduled for observation. In the event that an unexpected rain, storm, or other inclement weather condition arose during the day, after the data gathering had started, and if the condition hindered or contaminated the gathering of data, the process was stopped and started over from the beginning on the next attempt.
If an excessive number of children (more than 30 percent) were absent or if the regular teacher was not at school, data were not gathered. However, if the regular teacher was at school but had delegated his teaching duties to a student teacher or aide, the data were gathered on the assumption that the regular teacher was in charge and was fully responsible for the program as at least a co-planner and supervisor.

If the program for the day appeared to be atypical or "staged," the study would be stopped, and the data-gathering process would start again on another day. If this problem occurred during two attempts, that program was dropped and another was selected.

The gathering of the data took place according to the following procedure. An early arrival at school made it possible to be sure that all equipment was functioning properly and to be sure that all criteria for gathering data had been met. The name of the school was photographed and coded for the purpose of this survey. The names of the teachers and schools will not be revealed in this study. Next, the teacher's name, school, and date were recorded on the cassette tape which was used during the investigation. The filming of each sequence began by photographing a large numeral which identified the sequence. During the sequence, about five seconds or ninety frames in duration, the camera "panned" the entire spectrum of action. This procedure was
followed every ten minutes throughout the entire day. If the criteria for gathering the data had been met, the filming began within five minutes of the school beginning time. First, a checklist was checked point by point to indicate that the camera was on, that it was in proper focus, and that the sequence numeral had been photographed. Immediately following the photographing of the sequence, the sequence numeral was recorded on magnetic tape with an elaboration upon the kinds of activities that had been photographed. A written commentary for each sequence was made. Approximately ninety seconds after the recording, the observational checklist was marked. One observational checklist was marked during each ten minutes. At the end of the school day, the teacher responded to the questions on the Personal Interview Schedule, and the answers were recorded on magnetic tape for later analysis. The final procedure for collecting data was to give the teacher a copy of the Self-Report Questionnaire along with a stamped, self-addressed envelope. He was asked to return the questionnaire within a week.

Procedures for Analyzing Data

The data from the observational instrument and the self-report questionnaire were collected and quantified when appropriate and were reported by categories in tables. The data gathered through the recorded interviews were analyzed, and the answers were placed in these categories.
when applicable: yes, no, always, often, sometimes, seldom, never. These data are reported in the narrative of Chapter IV.

It was necessary to view each roll of film several times, using a regular super-eight movie projector and a large screen. Through this procedure it was possible to become thoroughly familiar with each film sequence before it was analyzed. The motion picture film was then analyzed frame by frame on an edi-viewer of the type used to edit home movies. (There were approximately 3,200 frames for each of the ten classes surveyed.) However, before the film was analyzed, a panel of three experts in the field of early childhood education was assembled. They were shown a sample of film (506 frames), first on the projector and then on the edi-viewer. While viewing the film frame by frame, the panel and the investigator sought to determine the degree of agreement when identifying each single frame and to credit it to one of the following categories: large muscle activities, small muscle activities, general arts (dramatics, puppets, art activities, etc.), music and rhythms, reading readiness games and activities, language development (stories, poems, show and tell, etc.), rest and nap, standing in line, or unintelligible frames. The final function of the panel was actually to count and record the number of frames per category. An agreement of 80 percent or better between the investigator and each other panel member in
accurately counting and identifying categories was considered sufficient to proceed with the study.

When the film was analyzed frame by frame, the following procedure was used: (1) the film was shown several times in slow motion on the projector while listening to the tape and checking the written list of sequential explanations, (2) the same procedure as above was employed except that an edi-viewer was used and hand-operated in order to study each frame individually, and (3) a tally of the number of frames devoted to each activity per day were recorded by two different people. In this way, the data were quantified and reported in the percentage of each day devoted to each activity.

The camera used photographed 18 frames per second. At the rate of a five-second burst every ten minutes, 540 frames would be taken per hour. Therefore, the formula for the number of frames per day equals 540 frames per hour multiplied by the number of hours in the school day. The formula for computing the percentage of the day devoted to the specific activity is:

\[ \% \text{ of day devoted to specific type of activity} = \frac{\text{no. of frames of that activity}}{\text{frames per day}} \times 100 \]

The above procedure was followed, and at the end of the filming the total number of frames per activity was determined and the percentage of the day devoted to each activity was computed.
The data for Research Question I were gathered by a direct inventory. The appropriate data were reported in a table according to categories of equipment and materials.

The data for Research Question II were gathered through the use of the observational checklist, the taking of motion picture films, and an interview. The results were then compiled and reported.

The data for Research Question III were gathered through a direct inventory of the equipment. The use of the equipment was recorded on the observational checklist and is reported.

The data for Research Questions IV-A, IV-B, IV-C, and IV-D were gathered through the use of film and the observational checklist. These data were then quantified and reported in a table.

The data for Research Question IV-E were gathered and analyzed exclusively through the use of film and were quantified and reported.

The data for Research Questions V-A, V-B, V-C, V-D, and V-E were gathered through observation and interview questions and were compiled and reported, comparing the ten programs observed.

The data for Research Question V-F were gathered through the interview only and were presented in a narrative form, comparing the ten programs based on the teacher's reply.
The data for Research Question V-G were gathered through analysis of filmed material and observation and were reported in a descriptive narrative form.

The data for Research Question VI were gathered through analysis of filmed materials, observation, and interview and were reported on an individual program basis in narrative form.

The data for Research Question VII-A and VII-B were gathered through use of the interview and self-report questionnaire. The results were analyzed, quantified, and reported.

The survey of programs for the development of large muscle, physical motor skills in the kindergartens studied were carried out as follows:

First, research and authoritative literature were consulted for recommendations as to the necessary elements in such a program.

Second, criteria were developed in relationship to both the quantitative and qualitative aspects of such programs.

Third, criteria developed were used in order to determine the extent to which the kindergartens studied provided for the development of physical motor skills.

Fourth, from this survey conclusions and recommendations were drawn.
CHAPTER BIBLIOGRAPHY


Free public kindergarten in Texas finally became a reality in 1971. Although at the present time enrollment is limited to a segment of the educationally handicapped, the proposed plans allow that all children who meet the age requirements may be enrolled in free, public kindergarten by the 1977-78 school year.

Those teachers in these newly developed kindergartens have observed that one characteristic of the five-year-old is his constant physical activity (17, pp. 135-136; 25, p. 90; 27, p. 12; 31, p. 20). His growing and maturing body demands much vigorous motor activity. The large as well as the small muscles seem to be in almost constant motion. It is through this necessary motion and movement that the child begins to gain control of his whole body. Control of the large muscles precedes control of the small muscles as well as of the whole body.

Kephart pointed out that in early childhood, mental and physical activities were closely related and that motor activities played a major role in intellectual development.
In fact, Kephart stated that to a large extent the so-called higher forms of behavior developed out of and had their roots in motor learning (29, p. 35).

Morrison and Perry (33, p. 560), Schurr (43, p. 6), and Jones, Morgan, and Stevens (27, p. 1) agreed that the chief goals of school were to help children reach their greatest social, emotional, intellectual, and physical potential. Therefore, many of the physical needs of the child are best met through a guided motor-activities program. Radler and Kephart (41, p. xv) also suggested that young children could get much more out of their initial school experience in learning and in pleasure if their basic physical skills were better developed.

In far too many instances, the young child is subjected to many pressures, methods, and instruction intended to help him excel academically. However, in many cases he lacks not only the ability but also the self-confidence and fundamental body control to be successful even in some "readiness skills." Kephart pointed out, then, that the teacher could spend his time more profitably "... by concentrating on pre-academic skills rather than by continued drilling on the academic activities from which the child had already demonstrated that he was not ready to profit" (29, p. viii).

Hymes (23, p. 3) believes that today's schools need sound programs that provide experiences in health and physical education. These programs would provide the child a
chance to improve his coordination, balance, speed, grace, vigor, strength, and health. Body control is an aspect of the child's development which is reflected in his total relationship with his world of people and things and which becomes a cornerstone of his personality development (17, p. 150).

The responsibility for providing the child with a variety of successful motor experiences while in school rests with the teacher, according to Moustakas and Berson (34, pp. 84-85). He must provide a wide variety of play material and equipment suited to the child's exploratory and developmental needs because well-chosen playthings can, among other things, help to develop the child's motor coordination (18, p. 7).

In order to emphasize thoroughly the necessity and importance of a well-planned kindergarten program for the development of large muscle skills and activities, a more detailed report will follow. Because of the age, interests, and developmental characteristics of kindergartners, the following areas will be discussed: role of play, movement education, muscle development, motor development and its significance and importance, motor behavior and skill development, and physical education programs.
Research Related to the Role of Play

Almost every authority on the education of young children has agreed that play has many values to the young child. Lady Allen stated that "... there is nothing new in our understanding of the great importance of play" (2, p. 140). But Cowell and Hazelton (10, p. 136) suggested that if the importance and value of play is appreciated and understood, it would be evidenced by the amount of time, space, equipment, supplies, facilities, and leadership [or guidance] given during the play time so that it would be a real means of valuable education.

Besides being physically stimulating for the child, the play period offers many opportunities for learning. Thurman (45, p. 207) reported that much of what is learned by a five-year-old takes place during or through play. One implication is that children do learn from each other. Espenschade agreed and added that "... common game skills are often taught to children by each other" (13, p. 14).

Many educators will further acknowledge a relationship between mental development and physical activity as one aspect of "play." Nash has said that "... physical education has a real contribution to make in connection with the intellectual development of the child ... he learns to think through the symbols which he acquires in his play life" (35, p. 35). Oberteuffer said essentially the same when he stated that "... physical education serves as a medium for
the total education of the being, intellectually, emotionally, developmentally, by the use of experiences having their center in movement" (36, p. 5).

Others have also pointed out the relationship of physical activity to intellectual development. Jersild (26) emphasized that in early childhood, mental and physical activities were closely related and, further, that motor activities played a major role in intellectual development. Kingsley and Garry further emphasized the relationship of mind and body when they said,

There is probably no learning activity that does not involve the muscles, for the action of muscles is an integral feature of the psychological activities. . . . The muscles also play an important, though less universally recognized part in perceiving, remembering, imagining, comprehending and thinking (30, pp. 181-182).

Davis (11) has stated that play is for the child what work is for the adult. Viewed in this light, some enjoyable intellectual activities such as drawing a picture, learning a poem, or lacing beads in a predetermined pattern might be play for a child. On the other hand, a play activity which is not enjoyed and is non-rewarding, such as an unsuccessful attempt to master the horizontal ladder, may be interpreted as work by some children.

Porter (39, p. 10) has asserted that the teachers of young children have long valued physical play as a medium for learning. They have provided large blocks of time for the needed physical activities of children, thereby
acknowledging the necessity and value of play. Other basic values of play listed by Lambert (31, p. 22) included its aid to physical development, its aid to muscle building, and its development of better motor coordination. She also pointed out the value of play in development of children's mental skills, and as a socializing force in the lives of young children. Lambert remarked that play allowed children to release pent-up emotions and acted as a safety valve to help children meet all of the demands of the school day. Jones, Morgan, and Stevens (27, p. 11) stated that "... play is life itself to the child." Children both love and need play. They need many opportunities for vigorous outdoor play (31). Headley (19), too, has emphasized that space, equipment, and play materials must give ample opportunity for using the large muscles of the torso as well as the complex muscles involved in body movement. Aaron and Winawer (1) offered that poor conditions of play may lead to juvenile delinquency, while ideal playing conditions may be an effective way of encouraging initiative and creativity.

Morrison and Perry warned that children who are not ready for cooperative play are also not ready for cooperative work. Further, they asserted that "... the child who is unable to pursue a play interest for any length of time is also unable to pursue a work activity for any length of time" (33, p. 19). Their implication seems to be that all teachers--especially kindergarten teachers--would learn much
by observing their children in play situations and by using their evaluation as a readiness criterion for beginning more academic types of work activities. Nevertheless, play is a natural and major form through which children work and learn such things as language arts and quantitative concepts (16, 23, 24).

In summary, play has many values to young children. Play is physically stimulating while offering many learning opportunities. It has been claimed that there is a relationship between mental development and physical activities. In addition, play aids in physical development, muscle building, motor coordination, socialization, and the release of pent-up emotions. The teacher who carefully observes children during play has the opportunity to evaluate them in terms of readiness for more sophisticated or academic experiences. Play is so natural and important in the life and education of the child that a survey of some of the newly established minimum foundation programs for young children in Texas should be made in order to find how much time and emphasis is devoted to vigorous play, both indoors and outdoors.

Research Related to Movement Education

It has long been recognized that most learning of young children is largely sensory-motor in nature (13, 39). The recent investigators in this field have stressed the importance of movement in neural development and in perceptual
formation (13). Porter stated, "The child development literature of the past thirty years supports the importance of sensory-motor experiences in child development and learning" (39, p. 10).

Movement is one of the universal languages of children as well as one of their most natural modes of expression. It is the basis of physical education from which physical activity skills emerge. Movement is synonymous with activity; it means getting into action and includes all the basic skills such as walking, running, hopping, jumping, swinging, pulling, pushing, twisting, bending, skipping, climbing, catching, and throwing. Movement indicates sensing and responding. It involves learning, motion, growth, and purposefulness (5).

As pointed out by Espenschade (13, p. 13), preschool-aged children are very active. They explore many ways of moving. They run, walk, climb, slide, balance, and experiment with many wheeled vehicles. It is possible that by the time the child enters first grade, his basic movement repertoire probably contains every movement of which the human body is capable. Brown and Cratty (8), as well as others (5), have indicated that movement education has been used with children at all age levels, but that it is particularly well suited to fit the characteristics of young children. Gardner (17, p. 135) emphasized that children find it fundamentally satisfying to use their physical bodies in the many
possible ways for movement, manipulation, and release of excess energy. In fact, children need opportunities daily for a variety of movement experiences. A part of each day should be planned around meaningful movement experiences because movement promotes optimum growth and development. Besides, as children find satisfaction and success in movement activities, they are reinforced for more mature academic work (5).

Schurr (43, p. 6) reported that elementary school children spend five-sixths of their day in developing intellectual skills. Therefore, she suggested that the remaining one-sixth be spent in letting the child learn about himself—how and why he moves as he does. It is up to the teacher to help him develop his skills and understanding of movement so that he can function satisfactorily for the major portion of the day.

In summary, most learning of young children is sensory-motor in nature. Through movement, young children have the opportunity to learn and practice the basic skills which are suited to their characteristics. Meaningful movement experiences need to be a part of the daily program in kindergartens. A survey of some of the newly established kindergarten programs is needed in order to ascertain whether or not the children are engaged in daily, planned programs for the development of basic skills through movement experiences.
Research Related to Muscle Development

The muscular development of young children is a complex and very important interrelated phase of their total general growth and development. Muscle control and its interrelatedness with other body functions and systems provides the body with strength, power, agility, and general control of all body movements.

Even before birth, the child's body contains muscle fibers. They are, however, relatively undeveloped, as may be noted in even casual observations of the infant's inability to control movement. The growth of muscle tissue is nearly proportional to the total increase in weight during the preschool period (22, p. 131). This is especially important in light of the fact that between one-fourth and one-third of the body weight of the preschool child is muscle (17, p. 131; 22, p. 132). His muscular system at this state of development is about three-fourths water and one-fourth solid materials. Since his muscles are not yet firmly attached structurally to the skeletal system, muscle fatigue is an important feature in the life and routine of the young child. Further, since he tires easily and often, it is extremely necessary that his teacher provide a program that adequately meets all of his needs for active and quiet periods as well as his needs concerning nutrition (31, p. 91; 48, pp. 17-20).

For the five-year-old, muscular action is good, satisfying, and necessary for its own sake (27, p. 12). His
large muscle coordination tends to proceed at a more rapid pace than that of his small muscle coordination (16, p. 33). Later, through the practice and development of many related motor skills and because of maturation, this action will become the basis for success in many other activities and endeavors which are necessary in physical, social, and emotional stability (15, p. 414).

In summary, the muscular development of young children is complex and important to their total general growth and development. Through muscular development will come strength, power, agility, and general control of all body movements (9, p. 94). A significant portion of the child's weight is muscle tissue and needs frequent periods of rest. For the young child, muscular action is satisfying and necessary; for it serves as a basis for success in many other activities.

Since young children are developmentally suited for large muscle development, a survey of the newly established programs is needed to see if the children in these selected kindergartens are engaged in planned programs for the development of large muscle skills. It also needs to be determined if the program of activities incorporates a wide range of large muscle skills and activities while also providing an adequate block of time set aside for rest.
Research Related to Motor Development:
Its Significance and Importance

A review of literature which dealt with motor development and physical activities revealed that, "The community, parents, schools, and teachers cooperating, are responsible for providing the kinds of physical education experiences vital to developing girls and boys" (5, p. 24). Jenkins, Schacter, and Bauer (25, p. 91) have agreed and suggested that both home and school should be aware of the five-year-old's developmental need for activity. Together they could better help in strengthening the large muscles, in aiding in the development of general body control, and in providing the child with acceptable and constructive channels for expression. Moustakas and Berson (34, p. 85) reminded, however, that young children need considerable freedom in their motor play; therefore, home and school must exercise a certain caution at all times. Freedom in motor play is encouraged through selection and placement of equipment in adequate indoor and outdoor facilities.

Milton (32, p. 15) pointed out that five-year-old children grow rapidly and have an acute need for gross body activity. She warned that when large muscle play is restrained, the results are "discomfort, irritation, and hindered physical development." Further, she stressed that inadequate space and poorly coordinated muscles tend to cause numerous collisions and other problems which hinder socialization.
The development of large muscle coordination during vigorous play leads to improved small muscle coordination. Good small muscle coordination is a requisite in learning to write, draw, cut, tie, or manipulate puzzles and other common equipment found in good kindergartens (20, p. 85).

An important part of motor development is the child's feelings of enjoyment in adult approval of his victory over the control of his muscles. His recognized success over body control serves as a reward to him and actually inspires him to work harder in the future for more success and finer body control.

Widmer (48, p. 162) suggested that learning is an active and dynamic process which is dependent upon a rich background of sensory and motor experiences. Hurlock (22, p. 200), on the other hand, pointed out that in many instances the motor development is delayed because of a lack of opportunity for practice. Therefore, the child who gets a poor start in the development of motor control often continues to lag behind his peers as he grows older.

Further study by Hurlock (22, p. 198) indicated that the child of superior health is more precocious in motor development than the child whose physical condition is poor. The child who is healthy is better able and more apt to exercise the body as a whole. This exercise, in turn, strengthens and helps to develop all of the body muscles.
Hurlock also stated (22, pp. 170-172) that the development of muscle control is dependent upon maturation of several components and body systems, and motor development cannot occur until maturation has laid the groundwork for it. Also, motor development follows a predictable pattern, (cephalocaudal and proximodistal) and there are predictable stages within the pattern of motor development as well as individual differences in the rate of motor development.

Since motor development can be controlled in most cases, it is important that each person sharing the responsibility for planning and guiding the child's experiences be alert to help him in every way possible. For "... it is essential to the child's happiness that his motor abilities be at least equivalent to those of other children with whom he is constantly associated" (22, p. 204).

Lambert (31, p. 198) reminded that most often it is the male who seems to be lacking the necessary motor coordination needed to handle the materials used in reading. She indicated that these deficiencies in motor coordination could be improved through games and activities that called first for the use of gross or large muscle movement and second for finer muscular coordination.

Morrison and Perry (33, pp. 13-15) warned that sitting still for any length of time means that the large muscles are inactive and that the young child is simply not physically capable of handling this situation. When young
children are forced into this situation, the results very frequently will be nervous-tension discipline problems. These authors go so far as to state, "... children in first grade should be expected to carry on only those activities which involve the use of large muscles" (33, p. 16). This statement seems to imply that kindergarten should definitely be involved primarily in large muscle activities.

In a study reported by Olson (37), primary school children who were deficient in behavior adjustment and poor in motor skills were benefited by a supplemental physical education program. However, Painter (38), Smith (44), and Blakley and Shadle (7) felt that good programs of activities would probably be beneficial for all normal children, not just the ones with special problems.

Espenschade (13, p. 12) reported that most gross motor performances were dependent to some degree upon strength and that other qualities such as balance, speed, coordination, and accuracy increased with age. She pointed out further that the learning process in the acquisition of motor skills is facilitated when children are given a good model or demonstration of what they are expected to do. The demonstration may be given by the teacher, a student, or an audio-visual aid.

Wallis and Logan have very explicitly stated, "... it should be remembered that the development of the child's physical growth and well-being depends upon sufficient
muscular activity. The development of strength, flexibility, and endurance can be achieved only by imposing sufficient exercise demands" (47, p. 65). Hunsicker (21, p. 26) stated that muscles grow stronger only when they are overloaded or used more intensely than normal. Not all of these exercises, however, need to be in the form of formal drills and calisthenics. Rather, many of them will be included in a well-planned program in which the children are guided to participate on a regular basis in the many usual activities which can aid in the development of motor skills.

Gardner (17, p. 135) stressed that the preschool child thrives on a steady diet of physical activity which naturally emphasizes large muscle action and gross body activities. These activities contribute to muscular development and coordination. He further believes that motor behavior and body control play a major role in the child's life and overall development. Gardner (17, p. 148), like Hurlock (22, p. 204), stressed the importance for the child to develop a level of body control at least equal to that of his peers or else suffer some form of personal maladjustment regarding his interests, attitudes, feelings of achievement and competence, and in general, for his self-concept. Still further credence is given to the idea by Jordan (28, p. 73), who stressed that when a child handles himself skillfully, he receives great satisfaction. She implied that every opportunity should be afforded the child in order that he might receive the
satisfaction, poise, and confidence that comes from good motor development.

For some time it has been recognized and admitted by educators and researchers that there is a positive relationship between health and learning. Recently it has been stated, "There is a direct relationship between the amount of activity a child gets and the benefit he receives from the activity" (5, p. 10). While this seems to be a common sense statement, it was made directly for the benefit of parents, teachers, or others who work directly with young children as evidenced by this later statement: "Few teachers have capitalized on the relationships of motor development to learning. It is becoming increasingly clear that physical activities hold one of the keys to learning" (5, p. 11). And it must also be pointed out that each child, even if he is in a group which has participated in a program carefully planned and based on a logical progression of activities, will still need individual instruction and participation in a variety of experiences to achieve maximum health and learning benefits (4, p. 450).

Motor behavior and body control both play major roles in the child's life as well as in his overall development. As has already been noted, motor action is important in its own right; but it also makes possible a wide variety of activities that ordinarily may not be thought of as being motor behavior. On the other hand, if a child fails to
achieve a reasonable level of body control in comparison to his peers, it can affect "the kind of personal adjustment he makes, for the kind of interests and attitudes he develops, for the feelings of achievement and competence he holds toward himself, and, in general, for the self-concept that he gradually organizes" (17, p. 148).

Gardner pointed out that even from the beginning of life, a child's motor behavior plays a part in his perception and awareness of his world. Through the motor activity of the eyes, hands, and whole body, the child can begin to manipulate and make major changes in his environment. Directly attributable to many of these changes and experiences is the process of concept building. Motor behavior is also essential for the development of speech since vocal activity itself is motor behavior.

Motor behavior is essential in any athletic activity, and the foundation for that success may very well be started in the early childhood years. Motor behavior is also essential in many aesthetic endeavors including arts, crafts, dancing, singing, and instrumental music.

It becomes obvious, then, that in the final analysis most forms of the world's work require high levels of mastery of one's body. This body mastery through motor behavior plays a significantly important role in the development of attitudes, self-confidence, and acceptance among one's peers. Gardner states, "The well coordinated child is,
other things being equal, more accepted, more sought after, more ready to assume leadership, and more likely to think well of himself during the early school years that lie ahead" (17, p. 149).

Since motor development is of such great importance and since the early childhood years are a natural time of incessant gross motor activity, it should be evident that positive guidance of motor development should not be left to chance.

The positive guidance of motor development includes attention to three major considerations: (1) equipment and materials available for motor activities, (2) experiences and instruction provided by adults, and (3) adult attitudes toward the child's motor action (17, p. 165).

It is, of course, necessary and desirable for the kindergarten teacher to be trained and skillful in knowing and recognizing the developmental level of his children. Also, it would be advantageous to keep individual written records on the progress and physical skills of each child. An example of this importance is revealed in the results of Gutteridge's study. Gutteridge (18, pp. 901-902) reported various skills and the ages at which children become proficient. She reported that by age five, 81 percent are skillful at jumping; by age four, 43 percent are practicing galloping; by age six and one-half, 92 percent are skillful at galloping; and from age five and one-half to six, 85 percent of young children are proficient at ball throwing.
When the kindergarten teacher knows this kind of information, he will be better prepared to plan more carefully his activities program in accordance with his children's levels and needs. He will be less inclined to frustrate himself and his children by expecting levels of competency in certain skills before the child is mature or able to be proficient.

Hurlock (22, p. 167) has explained several reasons for the importance of motor development. It motivates the child to engage in physical activities that serve as an "emotional catharsis" thus promoting good mental health while also enabling the child to entertain himself. Good motor development also provides the child opportunities for socialization as well as chances to achieve independence. Perhaps most important, good motor control helps build a healthy self-concept and leads to healthy personality adjustment.

It has been pointed out (40, p. 6) that the prospective teacher of young children should be encouraged to gain a thorough understanding of the total learning process and the role of motor development in this process because, "Motor development plays a key role in the total learning process" (40, p. 8). Every teacher, whether a physical education specialist or a general classroom teacher, needs to be aware of the developmental level and needs of each of his children in order to do his most effective job.
Gardner (17, p. 135) asserted that the vigorous activities in which the child is engaged aid in his muscle and motor development and, at the same time, aid in the development of the respiratory and circulatory systems. The benefits of healthy motor development are almost as broad as life itself.

The child will be benefited most as he receives thorough and continuing exercise as well as opportunity to practice activities that aid in motor development. Espenschade (12, p. 360), Hunsicker (21, p. 8), and Schurr (43, p. 7) have pointed out that if a program of activities is not followed regularly, then the level of fitness will degenerate. Therefore, it would seem that programs to promote fitness and all forms of development must be consistently and continually carried out at home and in the school in order to be most effective. Wallis and Logan (47) have reported that the young child's growing body is remarkably adaptable in situations of stress. It can adapt itself to accommodate the stresses imposed upon it by a new teacher or new program. In fact, they stated, "This progressive adaptation to the stress of muscular work results in an increased ability to perform subsequent muscular activity" (47, p. 1). In other words, each teacher should accept the responsibility of seeing to it that his students consistently receive the basic instructions, opportunities, and experiences in physical activities because each year's learned skills are the base
upon which next year's acquired skills must begin. "Where motor development is appreciably delayed, it is usually apparent at an early age. If remedial treatment is given as soon as the delay is recognized, retardation can, in most instances, be eliminated or minimized" (22, p. 197).

In summary, the responsibility for providing experiences that aid in motor development belongs to the community, parents, schools, and teachers. Experiences which foster large muscle coordination will, in the long run, help lead to small muscle control and hence to various "academic successes." Research has shown that supplemental activities programs do generally benefit children. Some writers think that all students but especially young children can and would benefit from daily activity programs that emphasize large muscle and gross body control. It appears that few teachers have capitalized on the relationship of motor development to learning and to overall development. For it is known that children who fail to achieve a reasonable level of success in comparison to his peers will suffer in attitude, interest, and self-concept.

Almost anything a child does or attempts to do in life requires a good mastery of his own body. Good motor development aids the child in physical, mental, social, and emotional well-being, while building the self-concept. A healthy self-concept in the young child becomes a broad base
for present and future successes and a shield to ward off serious blows to the ego brought about by physical limitations and poor motor development. Since motor development is so important to young children, a survey of newly established Texas kindergarten programs should be made to determine if regular, planned programs for motor development are understood and carried out.

**Research Related to Motor Behavior and Skill Development**

There are many implications and advantages for the child whose motor development has been smooth and successful. While it may not seem important to some kindergarten teachers, good motor development is essential in all activities associated with athletics. Good development is also essential to success in many aesthetic endeavors, hobbies, crafts, skills, and even in some fundamental vocational training and adjustments (17, p. 149). Hunsicker (21, p. 4) reported that a strong factor in the creation of President Eisenhower's Youth Fitness Council was a research study indicating a failure rate of approximately 58 percent by American children on a minimum muscular fitness test in contrast to 9 percent failure rate by Swiss, Austrian, and Italian children. This documented proof of the overwhelming "softness" of American youth has been responsible for many programs and attempts to "get on the road to fitness." It inspired many local school districts to begin hiring physical education "specialist teachers" to plan and carry out good programs.
A most important factor in successful motor development has been guided, purposeful practice (9, p. 94; 43; 17). Through practice and the mastery of playthings, equipment, and apparatus, children build skills which help them to gain poise, self-confidence, and "... the desire to share experiences with others, with partners, or with groups" (28, p. 73).

Good motor development and coordination are not brought about by exercises per se. Exercises can bring about an improvement in strength, endurance, and flexibility, which are the basic essentials upon which skills are built (47, p. 15). However, in order to develop skills, one needs to be involved daily in a program designed to aid in control over all body muscles.

Roth and Wagner (42) suggested that control over the large muscles is the beginning of control over the entire body. When a child has increased his skill in motor activity, he has also increased his independence and enhanced his physical well-being. Motor ability, then, gives the child a feeling of genuine achievement, thus enhancing his feeling of personal worth (34, p. 85).

Gardner best summarized the implications of motor development when he said, "... we may think of body control as an aspect of the child's development which will be reflected in his total relationships with his world of
people and things, and which becomes a cornerstone of his personality development" (17, p. 150).

The logic and importance of having an excellent activity program so that children can learn the motor skills while in the elementary grades is substantiated by these statistics given by John E. Anderson, former director of the Institute of Child Development and Welfare at the University of Minnesota. He said that by the time the child is twelve years old, he has 92 percent of his gross bodily coordination, 83 percent of his finer eye-hand coordination, and 86 percent of similar coordination as determined by the aiming test. Of the two speed factors, the twelve-year-old has 90 percent of his reaction time and 85 percent of his serial speed. Also, he has obtained from 30 to 50 percent of his potential physical strength (3, pp. 40-41). With so many significant skill-development factors dependent upon the kind of program being carried out in the elementary school, it would seem that every level, including kindergarten, had a serious obligation to make its contribution to the total development of each child's motor skills. According to Radler and Kephart (41, p. 11) the child develops "readiness" of many kinds by adding one simple skill to another. Each skill, then, is acquired by a combination of natural maturation and learning. Porter (39) added that the acquisition of specific skills depends also on environmental opportunity and guidance.
Espenschade (13, p. 15) reported that there are a large number of different skills to be learned and mastered, and research on motor skills indicates that most are highly specific in nature. The degree of skill which a child demonstrates throughout his school years has a bearing upon his self-concept (4, p. 449). As previously indicated, a child's degree of skill has influence upon his social position among his peers. Therefore, large and small muscle motor skills should be developed in schools for children under six (20, p. 147).

Motor skills will not be learned and perfected just because the child participates in spur-of-the-moment games and activities. The skills need to be broken down into their component parts and then presented in a logical, sequential order. In this manner, the learning of skills will not be left to chance. As a matter of fact, a highly individualized program would be most desirable (5, p. 11). Hunsicker (21, pp. 24-25) cautioned that because the young child is so active and so receptive to play activities, too often the actual teaching of the motor skills needed for participation in later physical education programs is neglected. He asserts that the mastery of motor skills will take place only through practice.

There are many developmental factors and characteristics which are related to different age groups and the sequential stages of development which are necessary before a child can
learn motor skills. Bayley and Espenschade (6) indicated that the development of motor ability is a function of maturation, and the acquisition of skill is influenced a great deal by the extent of practice. Hurlock (22, p. 180), however, reported that skills will not develop through maturation alone. Rather, skills must be learned; and there is ample evidence that when they are learned is as important as how they are learned. It may be said, then, that learning must be properly timed. Hurlock stated,

Because skills are built upon the foundations laid by the maturation of the basic motor coordinations, delay in maturation of muscle control will automatically result in delay in the development of skills. As a result, the child will be regarded as awkward, clumsy, or careless because he falls below the norms for his age (21, p. 197).

Therefore, the teacher must be able to recognize the level of development and the extent of physical maturation of each child in order to carefully plan the most meaningful learning experience in physical activities for each individual and for the group.

The atmosphere under which the skills are to be learned must be pleasant and rather informal. Since skills develop largely through trial and error, it must be expected that many errors will occur. The child should never be made to feel embarrassed because of his errors. He must learn through doing and by being actively involved. He cannot learn a skill simply by seeing a movie or by hearing how to
do a skill. He must do it himself (46, pp. 61-62). Vannier and Foster have also stated, "Neuromuscular skill, or total body coordination and habits, are developed only through activity. Body balance, accuracy, speed, coordination, rhythm, agility, sensory perception, and reaction time develop through guided experience" (46, p. 63).

Radler and Kephart (41) believed that normal young children would get much more pleasure and learning out of their initial school experience if programs were available to better develop their basic skills. Evans (14, p. 297), however, pointed out that programs for perceptual-motor development were frequently remedial in nature and, thus, were mainly for children who were academically slow. He reported that the research conducted on such programs had been limited and inconclusive. Perhaps all young children should have the opportunity to take part and have experiences in the total program. Widmer stated, "The control a child has over his body will determine the degree of his academic success" (48, p. 147). If all teachers knew, believed, and understood this principle, the activity programs for children would be much better planned and more individualized.

In summary, good motor development is essential to success in all activities and skills. The Youth Fitness Council was started in 1956 because test results had shown how inferior American children were in certain areas of skill development as compared to children from other countries.
It takes more than exercise and occasional practice to develop good motor skills. Success in the development of these skills gives the young child genuine feelings of personal worth and achievement. It is known that the early years are the most important for the young child in many ways. During his early years he is expected to master the basic skills. Skills must be taught so that they can be practiced and mastered. The teacher has the responsibility for planning and carrying out a physical activities program which will aid children in their motor and skill development. A survey of the newly established programs is needed to find out the extent to which physical activity programs for the development of large muscle motor skills are planned and carried out by kindergarten teachers in Texas.

Research Related to the Physical Education Program

In order for children to develop properly, they must engage in all types of physical activities say educators, pediatricians, and specialists in child development (5, p. 27). Physical education must be viewed, then, as a means through which educational objectives can be attained. These objectives can be attained when the physical activities programs are designed to introduce and teach a progression of skills based on the characteristics of children. Hunsicker (21) indicated that planned programs left nothing to chance. Bucher and Reade (9) seemed to agree and added that in order
for physical education to be educational, the program had to have planning and guidance.

Educators have many ideas as to the primary purpose of physical education. Some see physical education as an aid in developing good motor-skill patterns and in acquiring sports skills needed in later grades or in leisure-time activities. Others see it as time for children to explore basic movement skills with little structured learning. For others, the primary purpose is to promote physical fitness and good health; but many see it as a laboratory for development in the area of social and emotional growth. Most children view physical education as a time of play, fun, and games (43, p. 5). Jordan (28, p. 73) warned that if physical education were thought of as something apart from the main curriculum, then it would occupy a false position and could not make its proper contribution to the total education of the child.

Brown and Cratty (8, pp. 213-214) emphasized that for a variety of reasons, elementary physical education has not always been taken seriously by people inside or outside the profession. They added, though, that physical educators generally acknowledge that the early elementary school years are a crucial period for developing readiness for sports-skill instruction.

Sports-skill instruction is most important during the elementary school years. However, the activity program for
the young child must take into consideration his level of maturation as well as his developmental characteristics. Jones, Morgan, and Stevens (27, p. 12) pointed out that five- and six-year-old children are naturally active. Therefore, the activity program can provide the vigorous movement demanded for muscle development. It also provides the child with an acceptable outlet for his vibrant energy, while challenging him in an interesting and joyful way to be creative and self-expressive. Children will enjoy the physical activity program if it is well planned, if it has variety, if it challenges them, if it offers sufficient time for practicing new skills after instruction, and if the children are kept reasonably active (4, p. 13). Hurlock (22, p. 199) reported that because of the high prestige associated with athletic skills, boys are motivated to practice those skills until they become proficient in them.

In far too many cases, when curriculum or programs are mentioned, they are immediately assumed to be the responsibility of the school or teacher. However, Cowell and Hazelton (10, p. 13) have asserted that the actual physical activities program is initiated in the home or the nursery school with the preschool child. A part of the activities and ultimately the degree of interest and skill the child achieves will be due not only to his parents' attitudes but also to the equipment and encouragement given to him. If a child enters school and is already able to skip rope skillfully, it can
be assumed that he has reached a certain level of maturation and has been provided the equipment, encouragement, and instruction necessary to acquire the skills he has mastered.

Hildebrand (20, pp. 85, 95) reported that the outdoor time for self-selected activities should be at least thirty minutes long each day because vigorous activities stimulate all vital processes (circulation, respiration, and elimination). Often, eating habits may improve, and the rest time becomes more welcome. Espenschade (13, pp. 18-19) and Gardner (17, p. 135) were in general agreement that there should be a daily physical education period for elementary school pupils, as this period can also contribute to the emotional equilibrium of the pupils.

A planned program should have some form of evaluation procedure to be used from time to time. It is desirable to notice if the child's routine gives sufficient play opportunities for individual as well as group participation and for guided as well as free activity time. Gardner (17, p. 138) reminded, too, that the children should be having sufficient social contacts with peers and that it is possible for the environment to become overstimulating, leading to excessive and prolonged expenditure of energy which could bring about body fatigue (or total exhaustion).

Frost and Rowland pointed out that various studies have shown that low physical fitness is often associated with poor academic performance. They asserted, "The positive
relationship between physical fitness and social, emotional, and mental factors of development lend support to the demand for comprehensive physical education programs for all levels of our schools" (15, p. 428). It has been emphasized that if a time-motion study were done during the physical education periods, it would be found that most children spend the major portion of the period "standing," "watching," and "waiting" (5, p. 10). The biggest problem being identified now involves designing and administering a program that has been tested and proven to be of value to the greatest number of children (44).

According to a recent publication of the Association for Childhood Education International, there are several problems existing for teachers and administrators that will need to be dealt with before quality physical education programs become a common reality. These problems include a shortage of specially trained teachers; a lack of college programs to prepare teachers for this specialty; a lack of emphasis in preservice programs of the classroom teachers; a lack of attention to programs for the primary grades; a lack of facilities, supplies, and equipment; weak curriculum practices; and poor teaching methods. It was pointed out that most of these deficiencies may, in fact, be due to a lack of understanding of the contributions that a quality physical education program makes to children's total learning and development (5, p. 75).
In summary, if children are to develop properly, they must be engaged in all types of physical activities. These physical activities must be planned and presented in logical fashion and based on the developmental characteristics of children. The physical activities program must be thought of as a necessary and important area of the curriculum which can make a valuable contribution to the total development of the child. Naturally, the physical activities program will be most beneficial when the program is well planned and includes daily teaching of skills with time for children to practice the skills. The key to the success of such a program is the teacher, facility, and equipment. Until there is a better understanding of the importance of a good facility, adequately equipped and staffed with educators who know and understand the importance and implications of a well-planned program, then the physical activities period will not make the great contributions to the total development of the child that it is capable of making.

From the research in this chapter concerning the importance and implications of the role of play, of movement education, of muscle development, of motor and skill development, and of having a well-planned physical activity program, it becomes quite evident that a survey of the newly established minimum foundation kindergarten programs in Texas is needed. This survey is urgently needed to see if these new Texas kindergarten programs are adequately meeting the needs
of the young children involved by providing a good, balanced program for the development of large muscle motor skills.
CHAPTER BIBLIOGRAPHY


CHAPTER III

A REVIEW OF LITERATURE RELATED TO CERTAIN CRITICAL QUESTIONS CONCERNING THE PROGRAMS FOR LARGE MUSCLE DEVELOPMENT IN KINDERGARTEN

The critical questions dealt with in Chapter III were stated in Chapter I. In Chapter III the literature will be reviewed to answer these questions. The answers will serve as a basis for analyzing and reporting the data gathered in the survey of kindergarten programs, the focus of this study.

Research Related to the Kinds of Equipment Needed in Kindergarten Programs to Foster Physical Development

Research Questions I and II

I. What kinds of equipment and materials are available for the physical activities program?

II. What kinds of equipment and materials are used? (The second question will be answered in Chapter IV through the analysis of data gathered for this study.)

The kindergarten room and physical facility should be considered the learning laboratory of the five- and six-year-old child. It is the environment in which he is most likely to begin his formal school career. It may be small, plain, uninteresting, poorly and inadequately equipped, and therefore, may fail to offer stimulating challenges to children.
based on their levels of development. On the other hand, the kindergarten room may be large, skillfully planned and arranged, and supplied with adequate equipment and apparatus which will offer stimulating challenges to children at their own developmental levels. Kindergarten learning laboratories which are properly and adequately equipped will provide children with vigorous, appropriate experiences based on their needs for activity and skill development. If, of course, they have had a competent teacher, children from this environment will have a far greater chance for future school success than will those from the more barren environments.

Kindergarten children vary greatly—in rates of growth, in capacities, in achievements, in backgrounds, and in attitudes—therefore, their play needs are quite different. Materials and equipment must, then, be supplied in sufficient variety and quantity to provide for the differences while giving the children a chance to use their imaginations, to develop their motor coordination and control, to stimulate social interactions, and to practice and further develop the fundamental skills needed throughout the school years and all of life (4, p. 7; 31, p. 173).

Hurlock (26, p. 200) pointed out that some children are handicapped by their environment. They may get a poor start because of a lack of both play equipment and someone to teach them the skills. She suggested that when they do get a poor
start in the development of motor control, children usually lag behind their agemates as they grow older. An obvious implication is that a poor self-concept is developed. This self-concept may cause strained social situations in which the child cannot feel that he is a part of the group because he lacks the body control necessary to master some fundamental skills which are so important to him and his peers.

In order for the child to have an opportunity to develop his fundamental skills, he needs daily and regular opportunities to work with safe, sturdy, and developmentally appropriate equipment. Anderson, Elliot, and La BERGE (3, p. 459) suggested that the primary responsibility for the facilities and equipment lies with the principal. As the instructional leader of the school, he should know or should seek to find out what equipment will be needed for the kindergarten child. If he is not familiar enough with their needs regarding facilities and equipment, then he should ask a consultant, supervisor, or a representative of a state agency in the field of early childhood education.

Another method for receiving help would be to consult published materials for needed answers or suggestions. The primary interest of this study concerned a program for the development of large muscle skills and activities. Wills and Stegeman (59, p. 111) said the kindergarten play yard should be equipped with apparatus inviting large muscle play, because five-year-old children are active and their
bodies demand vigorous workouts. Besides, that type of equipment does more than promote muscle building and skill development: it also promotes social, emotional, and mental development. The playground and its equipment will be discussed at greater length in another part of this paper.

Todd (55) and Robison (43) ascertained that facilities, supplies, and equipment should be selected in terms of what one attempts to do for children. The development of large muscles is very important; therefore, a large area with adequate equipment and a variety of activities is needed both indoors and outdoors. Schmidt (49, p. 51) reminded that equipment should be selected with the individual child as well as the group in mind. She believes that blocks—both large and small, hollow blocks, unit blocks, and blocks of various geometrical shapes—are among the most useful and versatile equipment to be acquired because they give children so many opportunities for total development. Blocks aid in muscle development, motor control, coordination, perceptual development, eye-hand coordination, problem solving, spatial relationships, decision making, and language development. Certainly not all pieces of equipment are as versatile as blocks. However, various authors and professional publications have suggested other types of equipment, supplies, and apparatus deemed necessary and appropriate for kindergarten-aged children.
The following alphabetical list is not exhaustive but is intended as an example. No single resource listed all of the equipment, and there was some overlapping due to different labels used for similar pieces of equipment. The equipment listed has been drawn from basic as well as optional lists from the references cited at the end of this section. It would be almost impossible, and probably undesirable, for any one program to have all of the supplies here listed. It also should be noted that many of the pieces of equipment may be constructed in the local community.

- Auto parts
- Auto tires
- Auto tubes
- Balance beam
- Barrels
- Bean bags
- Benches
- Blocks (large and small)
- Boards
- Bouncing board
- Boxes
- Climbing apparatus
- Climbing rope
- Climbing platform or bridge
- Digging tools
- Easel, paints, brushes
- Hardtop surface
- Hollow blocks
- Hoops or rings
- Horizontal bars
- Horizontal ladder
- Jump ropes (long and short)
- Jumping pit
- Jungle gym
- Ladders
- Lincoln logs
- Mattress for tumbling, jumping, and wrestling
- Merry-go-round
- Monkey rings
- Packing boxes
- Parazontal bars
Planks  |  Slide  
---|---
Playhouse  |  Stairs with platform  
Playing field  |  Swings  
Pools  |  Tables and seats  
Pounding bench  |  Trampoline  
Pull toys  |  Trees  
Punching bag  |  Tree stumps  
Rafts  |  Tricycles  
Ramps  |  Tumbling mats  
Rhythm instruments  |  Turning bars  
Rocking board  |  Unit blocks  
Rocking boat  |  Utility balls (of each size)  
Sandbox  |  Wheelbarrow  
Saw horses  |  Wheeled toys  
See saws  |  Workshop tools  
Sewer pipes  |  

(3, pp. 497, 502; 4, p. 11; 5, pp. 12, 24-28; 8, p. 212; 12, pp. 13, 259; 18, p. 22; 24, p. 89; 30, pp. 32-35; 33; 34, p. 413; 39, pp. 7-8; 45, pp. 145-147; 48, pp. 298-299; 49, pp. 55-56; 54; 58, p. 124; 59, pp. 90, 112-114).  

In order to provide adequately for the physical development of children in the kindergarten, a variety of kinds of equipment should be available and used.
Research Related to Playgrounds and Outdoor Equipment for the Kindergarten Program

Research Question III

III. What specific large muscle equipment is provided on the playgrounds? The following review of literature will suggest answers to this question. This survey's results are presented in Chapter IV.

The first public playground in the United States was established in New York City's Central Park in about 1870. This public playground seemed to be the first official statement of need for a special place equipped to aid children's total development (1, p. 24). Sheehy (51, p. 56) has suggested that social development actually proceeds better outdoors because there is little or no pressure brought about by the noise produced by children engaged in the various activities.

The playground for young children at school should be separated from the playground space of upper-grade children. It should be joined to the classroom when possible and fenced for the sake of safety (31, p. 19; 5, p. 24). Further, supervision should be provided for the entire time that the children are on the playground (34, p. 322).

Some young children will have their first encounter with a playground, its equipment, and apparatus when they enter school. Therefore, it will be necessary that they be given encouragement by an understanding teacher in order to
build their confidence in their ability to use the equipment properly and safely (12, p. 145). Successful initial experiences do add to the self-concept and may also bring about some creative and experimental endeavors regarding the playground.

Experiences which are both creative and enjoyable are most likely to take place on carefully planned playgrounds. Loeffler (36) pointed out that the outdoor spaces should be as carefully planned as interior spaces. One of the main reasons for the careful planning is to create a playground that is safe from hazards in the play area. The kind of play that takes place on any playground will be affected by the available space (47). The best play yards for young children are usually planned for an individual skill development or with small groups of children in mind (36; 49, p. 51). When small groups of children occupy the playground, they are most likely to receive needed individual instruction and closer guidance and supervision.

Espenschade (18, p. 17) reported that the playground is the place where the child must face reality. She, like others, pointed out that the child's self-image is, to some extent, related to his body-to how it looks as well as to how it can perform in relation to peer performances.

Young children are more likely to be successful on playgrounds which have a variety of equipment and apparatus which will encourage each child to want to play vigorously.
on the outdoor equipment. The equipment provided should encourage the practice of different skills with different muscles. In fact, for a school to adequately carry out a beneficial program of physical activities, it must have a well-equipped playground. It should be stressed, however, that the equipment need not be commercially prepared.

There are several major concerns about playgrounds. These include their location, size, layout, equipment and apparatus, safety measures, and supervision.

Leeper and others (34, p. 317) have stated, "Children need playgrounds that are accessible, large enough, interesting, and safe." In 1954 the Association for Childhood Education International stated that research in this area was lacking but recommended a minimum of 75 to 100 square feet of play area per child. This outdoor space and play has many significant values to young children. Sherer (52, p. 17) reported that children need space to develop the muscular coordination and motor skills which are so important to the young. When the play area is of adequate size and has sufficient materials and equipment to keep the children occupied, there will be fewer "social collisions."

When facilities or equipment are less than adequate, problems are likely to develop. Aaron and Winawer (1) implied that many of the playground problems arose because of the "turn taking" equipment (swings, see-saws, slides). Lady Allen (2) agreed and further declared that supplying
playgrounds with equipment only from catalogs made them dull
and monotonous places. Dattner (15) also agreed and pointed
out that part of the trouble with the facilities is that
children do not get to help plan and design them. He further
stressed that playgrounds should be viewed as educational
rather than as athletic facilities. They should present a
series of challenges ranging from the simple tasks a toddler
can master to more complex tasks which will challenge older
children. Hole (25) reported, though, that young children
do prefer items such as swings, merry-go-rounds, and slides
rather than "architectural" items. Children spend only a
short time with each piece of equipment; therefore, she
suggested a minimum of six different items on each play-
ground. Anderson, Elliot, and La Borge stated, "A well-
planned playground and well-chosen equipment will promote
activity which is purposeful and enjoyable" (3, p. 493).

Children are better able to enjoy the playground when
the equipment is safe, flexible, versatile, and in good
repair. Children do not always want to play on fixed equip-
ment, and playgrounds which are equipped with only stationary
and stereotyped equipment do not offer enough opportunities
for imaginative play (5, p. 28). Wills and Stegeman advised
that there would be little need for organized games if the
playground contained "bars, jungle gym, walking boards, a
merry-go-round, large balls, tricycles, running space, sand
pile, hollow blocks, digging tools, and etc." (59, p. 90).
In other words, the child needs equipment which will give him an individual opportunity for purposeful and planned activity (24, p. 90).

A properly equipped playground represents quite a large investment. Lady Allen of Hortwood (2, p. 139) has suggested that local school and recreational park and facility planners work together in planning and equipping playgrounds so that costly overlapping of financial outlay is reduced. Planning of this type was found in one school district in which this investigation was conducted. One noticeable result was the fine quality and quantity of outdoor (as well as indoor in one case) equipment that was provided.

The need for large, well-planned, and adequately equipped playgrounds is best voiced by Aaron and Winawer's analogy: "As there is only a brief moment in the history of a kid's garment when it really fits him—he is either growing into it or growing out of it—so there may be only a few months at best in any child's life when ordinary playground designs and equipment suit his needs" (1, p. 9). Therefore, it is most important that all kindergartens have immediately and continuously available to them well-planned and well-equipped playgrounds. In fact, the condition of the playground is an indication of the philosophy of the school administration and staff concerning the components of a good kindergarten program.
Playgrounds and outdoor equipment require special attention in well-planned kindergarten programs.

Research Related to Specific Physical Activities Needed in Kindergarten which are Based on the Developmental Characteristics of the Five-Year-Old to Aid in the Development of Motor Skills

Research Questions IV, IV-A, IV-B, IV-C, and IV-D

IV. What is the range and type of physical activities provided?

IV-A. What percentage of the activities provided are for physical development?

IV-B. What percentage of the physical activities provided are specifically for the development of large muscles?

IV-C. What percentage of the physical activities observed are free play or free work?

IV-D. What percentage of the large muscle activities are teacher initiated? What percentage of the large muscle activities are student initiated?

The answers to the above questions were sought in this survey. The results are reported in Chapter IV. This section of related literature justifies the need for a strong physical activities program in the kindergarten.

Almost all children in a school situation participate in an activities program for some part of the day. However, Espenschade (18, p. 19) has pointed out that it would be
impossible to give children all the activity they need in one period of the day, as most children need from three to five hours of vigorous activity each day. This need has been stressed by the President's Council on Youth Fitness.

The kind of activities required to aid young children in total body development must be based on their physiological characteristics. Nagel and Moore (39, p. 7) have listed the physiological characteristics for children five to six years old along with their implications and have offered suggestions for related physical activities. Five-year-old children are experiencing physical growth, but their growth rates are uneven and their heights and weights vary. So, in planning various activities, individual differences must be recognized. These differences will explain the variations in the levels of accomplishment in basic skills. It should not be difficult for the teacher to find challenging activities, when there are so many activities from which to select. He must be careful, though, to evaluate first the student's physical aptitudes, limitations, and needs. This knowledge will suggest activities which are most appropriate. A five-year-old has fast growing muscles, but the growth rate is uneven. Therefore, the activities must be planned for purposeful and skillful use of the body and muscles. This period is a good time to teach the basic skills of locomotion as well as the fundamental ball skills. Specific activities to strengthen the large muscles include vigorous games and
rhythms with running, jumping, and ball throwing. It has also been pointed out (5, p. 54) that in all games it is important to use the body correctly. Some specific motor skills that need to be acquired are starting fast, running fast, stopping fast, changing directions while running, and falling correctly. Anderson, Elliot, and La BERGE (3, p. 462) suggested that locomotor and movement skills be perfected because children need to develop gross body coordination. A great amount of large muscle activity is needed for muscular and organic development. Individual activities should be provided so that children do not have to wait in line and so that they can progress at their own rate without fear of failure. These authors further suggested that movement skills be evaluated in group physical performance tests in order to identify children with a low level of muscular strength, agility, and flexibility. In this way, the teacher can plan a meaningful and appropriate program of instruction for the development of motor skills.

Before a teacher attempts to plan a program of physical activities, he should have a thorough knowledge and understanding of children. He should have an appreciation for each child's potential as well as an understanding and appreciation of the physical education program's contribution to the total development of the child (46, p. 5). Bucher and Reade have stated, "In planning, the teacher must keep in
mind individual differences. . . . In general, planning gives purpose and meaning to the program" (12, p. 156).

One of the primary objectives of the kindergarten physical activities program is to aid in the development of large muscles. Cowell and Hazelton (14, pp. 137-138) suggested specific activities for this purpose: running, jumping, swinging, rolling, climbing, pushing, pulling, and digging. After these skills have been mastered, more concentration can then be given to aiding the coordination of small muscles. In addition to the basic skills listed above, Lambert (31, p. 23) reported that children need to be engaged often in games involving throwing and catching. Besides aiding in the development of large muscle skills, they also help to develop visual tracking and eye-hand coordination, two recognized elements of academic "readiness." Widmer (58, p. 124), too, suggested that the outdoor play time is a particularly vigorous period and that abundant space should be available for large muscle activities. After giving the standard group of physical skills to be developed, she added that most young children enjoy these activities which are very beneficial to fast-growing youngsters.

Moustakas and Berson (38, pp. 84-85) have also named the common large muscle motor activities and have added pedaling, balancing, hitting, punching, supporting one's own body weight, kicking, hammering, pounding, constructing,
tumbling, and rhythmic experiences. They further reported that these activities allow for individual differences in performances, provide for differences in growth rate, and also encourage use of all muscle groups.

In attempting to answer the educational needs of five-year-olds, Headley (4) pointed out that these children are in the process of perfecting certain body skills. She warned that they need plenty of room for the already mentioned basic skills but added that hills were for running on and were great in helping to develop muscles and skills. Baker (7) has added that wheeled toys, climbing apparatus, and trees help to develop large muscles.

As has been established, much of the kindergarten day is spent by the children engaged in play activities. Espenschade (18, p. 15) warned that many children will not have an opportunity to learn regular game skills except at school. And since some children learn faster than others, it will be necessary to give individualized instruction and to supervise the practice of skills. Motivation to participate will rarely be a problem in the physical activities program if the tasks set are not too difficult. Espenschade has emphasized, "In physical activities as in all learning, progress is gradual and sequential, dependent both upon growth and development" (18, p. 16).

It is necessary for all teachers to understand and realize that learning progress is gradual and is based on
several physical factors. Further, whether educators like to admit it or not, there is presently a push to get more children into school at an earlier age so they can receive more experiences calculated to eventually help them achieve academic success. The point to be made here is that there is research available which tends to indicate that children do benefit physically, and perhaps academically in the long run, by being involved in activity programs.

The following two studies deal with "educationally handicapped" children of the type that have recently started their formal school experiences in Texas kindergartens. One of the purposes of Lietz's (35) study was to determine whether the perceptual-motor ability of advantaged kindergarten children differed significantly from that of children coming from economically disadvantaged homes. Leitz found no difference in the perceptual-motor abilities of boys and girls. He also found that, as a group, advantaged children scored significantly higher in each area tested (body balance and posture, body image and differentiation, perceptual-motor match, and form perception). The significant difference found in favor of the advantaged child indicated that the overall perceptual ability of the advantaged child is superior to that of the economically disadvantaged child. Leitz was unable to find a difference between the perceptual-motor ability of disadvantaged white and disadvantaged Negro children. From his study, Leitz concluded
that disadvantaged children make positive gains in the area of perceptual-motor abilities and that boys and girls gain equally from such a program. He also concluded that gains made were not due to ethnic heritage.

Turner and Fisher (56) did a study to determine the effect of a perceptual-motor training program upon the readiness and perceptual development of culturally disadvantaged kindergarten children. The planned program of perceptual-motor training exercises was derived from the Kephart developmental program. The exercises were used in the experimental group for half of each school day for seven months but produced no significant difference in intelligence scores from the pretests and posttests. The results indicated that the program was more effective at improving fine motor behaviors than gross motor behaviors. This result is important because fine motor behaviors correlate highly with successful reading and writing activities.

From the Turner and Fisher study it can be concluded that even though intelligence scores do not increase, the muscle activity involved in various activity programs can make an eventual difference in academic achievement. This statement is made on the assumption that after the large and small muscles are relatively well developed, the children will have gained the self-confidence necessary to begin academic work successfully.
The value of play, muscle and motor development, as well as the contributions made through gaining motor skills have already been documented. It would seem that all children, but especially "educationally handicapped" children would benefit to the greatest extent from a carefully planned program of specific activities based on the developmental level of each child for the development of motor skills.

Based on the developmental characteristics of the five-year-old child, the physical activities program should include particular activities that aid in the development of motor skills.

Research Related to a Well Balanced Kindergarten Day

Research Question IV-E

IV-E. What percentage of the kindergarten day is spent in the following kinds of activities? (1) Large muscle activities, (2) small muscle activities, (3) general arts (dramatics, puppets, art), (4) music and rhythms, (5) readiness games and activities, (6) language development (stories, poems, show and tell, etc.), (7) academic instruction, (8) lunch and snack, (9) rest and nap, and (10) standing in line. The answers to this research question have been sought in this survey and are reported in Chapter IV.

Many authors have noted that the broad, general goals of planned physical education and activities programs are
the same as the broad, general goals for all education. The goal of education is to aid children in their physical, mental, social, and emotional development (19, p. 414; 28, pp. 1, 3; 37, p. 6; 50, p. 6; 57, p. 5). Under the direction of competent teachers good curriculum coupled with good curricular practices will help children develop desirable habits, attitudes, skills, and abilities which will in turn bolster their self-image and help them successfully through school and life.

Perhaps Jones, Morgan, and Stevens summarized the idea well when they stated, "The physical education program, to be of value, must include those activities which meet the needs, satisfy the desires, challenge the interests, and foster physical, mental, social, and emotional growth of each pupil" (28, p. 3).

Upon being questioned, almost every educator would say that he has a responsibility to each child to help him in his total development. Most teachers will claim that they "accept the child where he is and attempt to move him forward." It would be interesting to know how many teachers actually try to accomplish this tremendously important task. This section of related literature is intended to point out how, through a well-planned physical activities program, the child will be on the path to "total development."

Espenschade (18, p. 5), a noted physical educator, has emphasized that the school must assist in guiding the physical
development of children by providing regular, vigorous physical activity programs. These programs should include the teaching of the basic skills necessary for individual and group participation. The child must develop both his knowledge and attitudes toward others as well as toward himself. Cowell and Hazelton (14, p. 142) suggested that these attitudes, social behavior, and mental hygiene might develop on the playground along with good skills and better health.

The question concerning the relationship of motor activities to intelligence is not a topic of this study. However, one brief statement will be included. In their book Brown and Cratty (11, p. 103) have stated, "Many neurologists and psychologists feel that motor activities play a major role in intellectual development." They further pointed out that Hebb (22), Piaget (42), and Kephart (29) each stressed the importance of muscular activities in the development of basic concepts, while Held (23) believed that the continued use of motor activities is essential to the maintenance of established perceptual judgments. There has been study and research done in this area, but more is needed.

A long-accepted fact is that children learn through doing: the amount learned and retained is proportional to the number of modalities used in the learning process. Widmer stated,
Informed, experienced early childhood teachers have always been aware of the importance of sensorimotor activities to the child's further intellectual, social, and emotional as well as physical growth. The current research in this area merely confirms the values of these activities in a well-planned program. It appears that later achievement in formal academic skills is enhanced by this early, strong base of sensorimotor activities with emphasis properly upon the process, the doing, and not the end product. The control a child has over his body will determine the degree of his academic success (58, p. 147).

Academic success is usually accompanied by adult and peer approval which, in turn, may lead to emotional stability. Moustakas and Berson stated, "Motor ability gives the child a feeling of achievement, thus enhancing his feeling of personal worth" (38, p. 85). A young child's personal worth or feelings of self-acceptance and self-confidence can, perhaps, best be boosted through planned learning experiences and the use of real materials and equipment. A first-grade teacher who observed in one kindergarten, stated that the self-confidence had been increased in at least two children through the use of materials and equipment. She noted that the use of large muscle equipment helped children overcome feelings of inadequacy by developing muscular coordination and balance (4, p. 21). Likewise, Hurlock warned that children would compare their skills and achievements with those of their peers. She then reported,

If he does as well as or slightly better than, they do, he will be happy and confident that he can hold his own in the group; if he falls below them in these skills, he will be upset
emotionally and will feel inadequate. . . .
Falling below the achievement level of his age-
mates in any activity is ego-deflating for a child; falling below in activities that are im-
portant to them and are used as the basis of social acceptance is a very serious blow to the child's self concept" (26, pp. 203-204).

So many of the skills that are important to the child must be learned and practiced on the playground. For that reason the children should be on the playground participat-
ing in a planned program of physical activities for a sig-
nificant part of the day. Gardner stated that the role of play should not be overlooked because "... its role is much broader than one of merely stimulating further muscular development" (20, p. 135). As children grow older, they use muscle action as a means to other ends. It creates for them opportunities to do projects of various kinds, to engage in artistic pursuits, and to excel in games and sports. For the young child, muscle action was good and satisfying in its own right; but for the older child, it means success and mastery of attempted and practiced tasks. It denotes a kind of growth that is more than just physical. When the self-
concept is boosted through physical prowess and accomplish-
ments or otherwise, it is ultimately of value to the social, emotional, and physical self (20, p. 136).

The ideal and well-balanced kindergarten day will be devoted to developing the child's emotional stability, his physical self, his language abilities, his aesthetic aware-
ness, his social self, his conceptual abilities, and his self-concept.
Research Related to the Necessity of Planning a Kindergarten Program for Large Muscle Development


V. What kind of program planning and implementation by the teacher exists?

V-A. Are activities and instruction provided on an individualized basis?

V-B. Are audio-visual aids used in association with the activities program?

V-C. Are demonstrations utilized in the program?

V-D. Are written records regarding the physical motor progress kept on each individual child?

V-E. Is an instructional guide provided for the teacher's use?

V-F. Are physical-motor skills presented in a planned scope and sequence?

V-G. Does the environment become over-stimulating?

These research questions are answered in Chapter IV through the analysis of the data. Authoritative literature has been consulted in Chapter III to establish the justification of a well-planned program for the development of large muscle skills and activities.

The physical activities period is expected to be another opportunity in which the child will learn. The physical activities program should provide systematic learning
experiences which have been adapted to the developmental level, needs, and interests of the pupils. Through a planned, sequential physical activities program, the major objectives of education can be realized (18, p. 19).

Moustakas and Berson (38, pp. 84-86) reported that it is the teacher's primary responsibility to provide opportunities for each child to have a variety of successful motor experiences. They further pointed out that the teacher needs an understanding of the individual child in order to provide the kind of physical environment which would encourage effort, thought, constructiveness, creativity, and imagination.

When the teacher does understand the individual child, he will plan the program so that a maximum number of children will participate. Thereby, they will be exposed to the values of each learning experience (5, p. 11).

Planning the program is so important that Bucher and Reade (12, p. 155) have stated, "... no teacher should attempt to teach physical education to elementary school children without plans." When a teacher does plan, he must keep in mind individual differences. Besides, the very fact that he is planning gives meaning and purpose to the program (12, p. 156). The teacher should be able to present the fundamental skills in a logical progression based on the child's developmental level. First, simple games requiring simple skills should be used. Later, using the knowledge
gained about this child or group, the teacher should introduce more difficult skills (12, p. 122; 39, p. 1). Schurr (50, p. 17) stressed that one important reason for careful planning and supervision of physical activities is that the early detection of errors in the performance of skills can be noted quickly. Consequently, the teacher can take the necessary steps to correct the situation without causing undue stress or frustration to the child involved.

Frost and Rowland (19, p. 416) asserted that the physical education program must be more than a periodic exercise period, and it must involve more than occasional participation in a game. In fact, other sources (5, p. 11; 43, p. 2; 59, p. 104) demanded that the physical activities program be a daily happening and that skills and appropriate large muscle activities be taught to all pupils. For it has been pointed out (12, p. 94; 39, p. 1) that needed skills are acquired faster and improve more through appropriate direction.

Espenschade reported that there need be no formal tests of performance in the primary grades. Rather, a satisfactory evaluation can be made through systematic observation guided by checklists, ratings, and/or written records of performance (18, p. 23). When written records are kept concerning a child's skills, abilities, or deficiencies, the program may be thought of as individualized to a certain extent. It may be thought of as highly individualized if specific
instructions in large muscle skills are given as a result of the written evaluations made.

Of course many research studies have been carried out in which various activities and skills programs have been used. Their authors claim neither 100 percent effectiveness nor ineffectiveness; however, the following studies and their results seemed pertinent to this investigation.

O'Connor's study (40, p. 4310-A) of the effects of physical activities upon motor ability, perceptual ability, and academic achievement of first graders used a Kephart-type gross motor activities program with the experimental group, while the control group was engaged in a traditional physical education program. She found that the experimental group made significant gains over the control groups in all measures of motor ability except group strength. However, in perceptual and academic measures the only significant difference was in favor of the experimental group in the area of internal awareness. O'Connor concluded that the change in gross motor ability as the result of the Kephart-type gross motor activities did not effect a change in the perceptual or academic ability of the average first grader.

Studies reported by Huntinger and Schoonover (17, p. 983) also revealed that, when engaged in physical activities programs with specific time devoted to improving strength and skill, young children (elementary school age) do make good gains in skill and strength development.
A study by Halverson (17, p. 903) revealed no significant differences for scores in the standing broad jump between kindergartners receiving instruction and practice and those receiving none. Therefore, the indication, as has been pointed out, is that maturation, physical development, logical progression of skills taught, as well as teacher understanding and presentation may make a great deal of difference in the results obtained from the study of some specific programs.

A study of kindergarten children by Lazro (32, p. 2609-A) determined that the inclusion of a systematic program of gross motor activities for one half hour per day over an eight-week period significantly improved the children's readiness for reading. He found that boys and girls as well as old and young children benefited similarly. The program improved the reading readiness of both high and low mental aged children, but the increase for higher mental aged subjects was significantly more. Emmons, however, concluded in her study of first-grade Negro children (16, p. 3442-A) that gross-motor training in the perceptual-motor skills is effective only for slow learners.

Much of the writing and so many of the studies concerning the effect of programs of motor development upon achievement have been carried out with children who were not "normal." In many instances the programs were started as remedial measures. However, it is believed by Painter (41),
Smith (53), and Blakely and Shadle (9) that good programs of activity would probably be beneficial for all normal children and not just for the ones with special problems.

It has become more readily recognizable that the program for large muscle development must be a thoughtfully and carefully planned program.

Research Related to the Teacher's Planning of a Kindergarten Program Based on the Developmental Level of His Class

Research Questions VI, VII, VII-A, and VII-B

VI. In what ways does the teacher provide evidence that he knows and understands the importance and implications of a planned educational program?

VII. What are the teacher's qualifications?

VII-A. Has he had experience or training in working with disadvantaged children?

VII-B. Has he had formal training in early childhood education?

The answer to the research questions above are answered in Chapter IV from the data gathered and analyzed in this study. The following review of literature emphasizes the fact that the well-trained and competent professional educator will plan carefully his kindergarten program based on the developmental characteristics of his children.

It has been pointed out previously that program planning is of paramount importance for large muscle development.
But planning is equally important for all areas of the kindergarten program. A truly professionally-trained teacher in early childhood education will realize the necessity of good planning based on the developmental level of his group. A publication prepared by the American Association for Health, Physical Education, and Recreation has made this statement regarding undergraduate professional preparation:

A thorough understanding of children is essential. Attention needs to be directed to the early childhood years, including preschool, nursery, and kindergarten ages. . . . An appreciation of all the aspects of the total development of the child is important, coupled with a special emphasis on physical motor development and its relationship to the development of a fully functioning human being" (46, p. 5).

The same idea was published in a bulletin of the Association for Childhood Education International (5, p. 21) reporting that a good physical education program is based on the developmental characteristics of children. It also stated that a knowledge and understanding of the general pattern or sequence of motor, emotional, social, and intellectual growth is necessary in designing programs in order that children might have joy while participating in the learning experiences of the physical education activities. This program planning must be started at the preschool and lower-elementary level. The necessary facilities, equipment, and materials must be available and under the guidance of well-qualified teachers. The bulletin further stated,
Current trends in elementary education indicate an increasing interest in providing a broad physical education program for all children, beginning in nursery school. Significant changes in curriculum are taking place for children where there is good leadership in elementary school physical education (5, p. 73).

Frost and Rowland (19, pp. 414-416) stressed that a planned program of activity is needed to insure the continued development of the individual through the appropriateness of the program available. They further pointed out that varied programs should be conducted daily for all children. However, they admit that the classroom teacher is rarely able to carry out a comprehensive physical education program because of a lack of training or experience in this particular field.

In some cases, especially in the realm of physical activities, the teacher's inexperience and inadequacy of training may involve a lack of knowledge of the correct materials and apparatus for the developmental level of his class. Therefore, he cannot plan a program based on the interests and abilities of his class. The likely result will be that the children will neither like nor enjoy the activities program. Consequently, there may be many disputes and problems to be settled (12, p. 16).

Espenschade (18, p. 20) emphasized that regardless of the training or experience the teacher has had, he still has the sole responsibility to recognize the individual differences among his pupils and to adapt his program to meet their
needs. Some children will need more instruction and individualized attention than others since they will be operating at various levels in their skill development. Further, some children will need a model to imitate so that they may practice until the skill is mastered, and every child will need the opportunity to practice and to make errors. Instruction can facilitate the learning if it is not too detailed and if the limits set are not too rigid. Of course the child will have a much better chance to succeed if the physical environment is stimulating and adequately supplied. Nevertheless, it will be the well-trained and dedicated teacher who will help each child reach his potential (44, p. 17).

In discussing some of the fundamental skills to be mastered in rhythm and dance activities, Kirchner (30, p. 159) as well as Vannier and Foster (57, pp. 60-61) said there are eight locomotor steps or skills. These locomotor skills are walking, running, jumping, hopping, sliding, skipping, galloping, and leaping. In addition there are six non-locomotor or axial movements that young children will need to master. These non-locomotor skills are swinging, swaying, bending and stretching, rising and falling, twisting and turning, striking and dodging, and pushing and pulling. Kirchner (30, pp. 151-181) has given a description of each of the skills mentioned, a picture, and the common faults observed for each skill. All teachers should be
familiar with these basic movement skills and should know when and how to teach them properly. For, as Leeper and others have stated, "The quality of education at any level depends on the competence of the teacher" (34, p. 103).

There are certain fundamentals concerning children's developmental levels and the skills to be mastered that must be understood by teachers before they can start teaching skills competently. Carlson and Ginglend (13, p. 201), even though writing about retarded children, have given some examples. They pointed out that it is easier for a child to roll a ball than to throw it; however, it is easier to throw a ball than to bounce one with accuracy. Likewise, it is easier to catch and toss a large, loosely stuffed beanbag than a ball. Also, beanbags stay put when they hit the floor or ground, saving the child the embarrassment of having to chase it. One further principle to keep in mind is that it is easier and more accurate to toss underhanded. When the teacher of young children puts knowledge of this type into his program planning, he, as well as his students, will be able to operate with fewer frustrations.

Skills should be introduced and taught in a proper and logical sequence which will most likely allow the vast majority of students to be successful in mastering them. It has been pointed out by Hurlock (26, p. 182) and Vannier and Foster (57, p. 9) that the teacher must carefully supervise and observe when the children are trying to master the
common skills, for if they make repeated errors that are not corrected, it will be most difficult to relearn the skill correctly. Vannier and Foster stated, "Speed, strength, timing, and increased movement range can be developed through practice under skilled directions of the teacher" (57, p. 9). The teacher is an important person. He must be ready to accept the challenge presented by teaching in the kindergarten.

The teacher's attitude is important. Hildebrand has stated, "The teacher's attitude toward the outdoors is quickly indicated by what he plans and what he permits children to do outdoors" (24, p. 86). She implied that if the teacher understands his own importance as a program initiator, he will enthusiastically plan outdoor as well as indoor activities. The outdoor activities will include various and purposeful use of outdoor facilities and equipment. A bulletin of the Association for Childhood Education International has emphasized that, "Teachers both by their personal attitude and the arrangement of equipment encourage children's participation" (6, p. 27). Nagel and Moore (39, p. 3) reminded that the young child's natural impulse is to be active. Thus, he will be active sometimes in a positive way and sometimes in a negative way. Through the child's activity he attains skills, knowledges, and attitudes.

Most children are eager to participate. Wills and Stegeman (59, p. 111) have suggested that when there is
enough large muscle equipment in both quantity and variety for all children to use without having to wait too long, then the need for planning organized games, plays, and mimetics for the entire group will be less frequent. On the other hand, when there is little equipment, the organized group activities should take a larger portion of the outdoor play time.

A teacher specially trained to teach physical activities will have had training in such areas as the physiology of exercise, growth and development, and skill progression (3, p. 458). Therefore, he would have a distinct advantage in planning a program geared to his students' developmental levels. However, a large measure of teaching success is brought about by careful planning. The regular classroom teacher can, through a well-planned physical education program, contribute to the child's total development. As the regular teacher, he does have an advantage in that he knows each child's abilities, strengths, weaknesses, and personality. Through competent guidance the objectives of good activity, logical progressions, and interesting challenges are achieved (3, p. 450).

Well-planned programs could be interpreted in several ways. It does not mean that free activities are never allowed or that the program is not flexible. Rather, one aspect of planned programs refers to the time spent by the teacher in selecting the activities in which the children are
developmentally ready to participate with a good chance for success. Well-planned programs grow out of careful observations and well-kept records on individual children's abilities, strengths, and weaknesses. Out of necessity, well-planned programs have elements of individualization. The program should be based on the developmental characteristics of each individual child. Therefore, a well-planned program is most likely the product of a highly trained, energetic, professional teacher whose main concern is to aid children in their physical, mental, social, and emotional development.

The effective kindergarten teacher is trained in planning and providing a kindergarten program in accordance with the developmental level of his pupils.
CHAPTER BIBLIOGRAPHY


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CHAPTER IV

PRESENTATION AND INTERPRETATION OF DATA

This chapter is concerned with the presentation and interpretation of data gathered in a survey of ten newly established Texas kindergarten programs. Data were gathered and reported relative to the total programs. However, the primary focus of the study is to determine the scope and depth of the programs for the development of large muscle skills and activities. The data were gathered by four instruments. A personal interview was held and the teacher's answers were recorded on magnetic tape and later analyzed and reported. The teacher filled out a self-report questionnaire concerning certain aspects of his program as well as supplying personal and professional data. An observational checklist was marked every ten minutes. Finally, data were gathered by taking motion picture films on a time-sample basis throughout the entire kindergarten day. The data are presented in the same sequence as the research questions in Chapter I and in Chapter III.

Analysis of Data

The data for Research Question I were gathered by taking a direct inventory of the equipment, materials, and apparatus that were in the kindergarten room or that were a part of
the facility or playground. The total inventory for each program surveyed is not presented. A representative list of equipment and materials available and used for large and small muscle development is listed in Table I. The outdoor equipment, facilities, and apparatus available and used are presented in Table II.

In order to meet the total needs of five-year-old children adequately in a stimulating, worthwhile, and challenging program, it is necessary that the program include a competent and understanding teacher. In addition, the physical plant, its supplies, equipment, and apparatus must meet minimum standards. However, it is easily understood that the best room containing a great supply of materials and equipment, even if it is suited to the children's developmental levels, will be of no benefit if it is not used. Therefore, it seems reasonable to report that a good kindergarten program will have at its disposal carefully selected and ample equipment and supplies which are not only available but which are also used.

Table I reveals that Programs E, F, H, and J are the best supplied and that their materials are used. The most commonly available and used equipment and materials included the home center and its accessories, unit blocks, books, record players and records, puzzles, readiness games, peg boards, and of course, crayons and paper.
<table>
<thead>
<tr>
<th>Equipment</th>
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**TABLE I--Continued**

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<td>A &amp; U</td>
<td>A &amp; U</td>
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*Excellent and abundant supplies, many of which are not listed here.

A = available; A & U = available and used.

Only 50 percent of the programs had indoor balance beams, and only one program made use of the balance beam. Sixty percent had bean bags, but they were not used once. Ninety percent of the programs had woodwork benches and tools, but only 60 percent used the workbenches, while seven of the nine programs with tools made use of them in some way.
The creative and manipulative supplies—materials which aid in the development of small muscles, e.g., paper, scissors, paste, crayons, chalk, peg boards, clay, and easel painting materials—were well used. Readiness games of many kinds and varieties were found in every program and were used with only one exception. All ten programs had a supply of puzzles, and they were used in seven of the programs. Sand tables were found in three programs and water tables in two other programs.

Finally, "Ditto materials" were found in five of the programs and were used in four of the programs. In one program, five "Ditto sheets" of materials were "worked," averaging about one hour of one school day.

In Chapter III it was pointed out that a significant part of each day should be spent outdoors because as children play they grow and develop in many ways. This growth and development is aided to a large extent by the variety of equipment and apparatus available and used on the playgrounds of the kindergarten programs. Table II presents the outdoor equipment, facilities, and apparatus which are available and used in the surveyed programs.

Table II indicates that the only large muscle apparatus found on every playground was a climbing device or structure commonly known as a jungle gym. The jungle gym was a popular piece of equipment used by the children in aiding in the development of large muscles in the arms, legs, and trunk.
TABLE II
OUTDOOR EQUIPMENT, FACILITIES AND APPARATUS AVAILABLE AND USED IN THE KINDERGARTEN PROGRAMS SURVEYED

<table>
<thead>
<tr>
<th>Equipment</th>
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<tbody>
<tr>
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<td>A</td>
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<tr>
<td>Gymnasium and/or playroom</td>
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<td>A&amp;U</td>
<td>A&amp;U</td>
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<td>A&amp;U</td>
<td>A&amp;U</td>
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<tr>
<td>Hardtop play area</td>
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<td>A</td>
<td>A&amp;U</td>
<td>A&amp;U</td>
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<td>A&amp;U</td>
<td>A&amp;U</td>
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<tr>
<td>Horizontal ladder</td>
<td>A&amp;U</td>
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<td>A</td>
<td>A</td>
<td>A&amp;U</td>
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<td>A&amp;U</td>
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A = available; A&U = available and used.

The children of Program E spent their outdoor period preparing and planting a garden. Therefore, the only piece of equipment they used on the day their program was surveyed was a balance beam.

Six of the programs visited had a gymnasium or indoor playroom available to them; four of the six did make use of that facility even though they did spend the major portion of their play time outdoors.
The large, stationary pieces of equipment—jungle gym, slides, swings, and seesaws—were most popular with the children. The one exception was the horizontal ladder. Even though it was found on six playgrounds, it was used in only one program. The horizontal ladders may be too high because in all instances the same playground apparatus is used by upper-grade children. It appeared that not one piece of special kindergarten-sized apparatus had been added to the playgrounds.

The number of outdoor wheeled toys was inadequate. Seventy percent of the programs had hard-surfaced areas available which could be used for wheeled toys. However, only three programs had wheeled toys; and in one program they were in such poor repair that they were unsafe. All other equipment seemed safe, sturdy, and in good repair.

The least expensive of the playground equipment was scarce. Few jump ropes, balls, and balancing boards and beams were available or used.

The kindergarten programs which provide adequate time for the physical development of the children involved imply an understanding of the growth and developmental patterns of young children. It is possible, through careful program planning, to guide young children through many learning experiences in which they are physically involved. In view of the focus of this study, large muscle skills and activities, it is interesting to observe how much of the kindergarten
day of the surveyed programs were spent in activities that aid primarily in physical development. The outdoor play activities are included in percentages shown by Table III.

TABLE III
PERCENTAGE OF THE KINDERGARTEN DAY SPENT IN ACTIVITIES FOR PHYSICAL DEVELOPMENT

<table>
<thead>
<tr>
<th>Activity</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Muscle</td>
<td>33%</td>
<td>11%</td>
<td>22%</td>
<td>23%</td>
<td>20%</td>
<td>29%</td>
<td>24%</td>
<td>23%</td>
<td>25%</td>
<td>9%</td>
<td>21.9</td>
</tr>
<tr>
<td>Small Muscle</td>
<td>8</td>
<td>4</td>
<td>4</td>
<td>7</td>
<td>8</td>
<td>10</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>11</td>
<td>7.3</td>
</tr>
<tr>
<td>Music &amp; Rhythms</td>
<td>11</td>
<td>11</td>
<td>18</td>
<td>8</td>
<td>11</td>
<td>8</td>
<td>0</td>
<td>5</td>
<td>11</td>
<td>5</td>
<td>8.8</td>
</tr>
<tr>
<td>Lunch/Snack</td>
<td>14</td>
<td>11</td>
<td>14</td>
<td>11</td>
<td>14</td>
<td>18</td>
<td>14</td>
<td>8</td>
<td>13</td>
<td>12.8</td>
<td></td>
</tr>
<tr>
<td>Rest/Nap</td>
<td>16</td>
<td>13</td>
<td>13</td>
<td>11</td>
<td>16</td>
<td>17</td>
<td>13</td>
<td>11</td>
<td>22</td>
<td>22</td>
<td>15.4</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
<td>50</td>
<td>68</td>
<td>63</td>
<td>66</td>
<td>78</td>
<td>61</td>
<td>60</td>
<td>74</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Average time devoted to physical development, all ten programs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>66.2</td>
<td></td>
</tr>
</tbody>
</table>

The children in Program A were involved in activities to aid in physical development for 82 percent of their school day. However, 30 percent of that time was spent in eating and sleeping. As shown in Table III, this survey indicates that the average for the ten programs surveyed was about 13 percent for eating and about 15 percent for rest and napping. Therefore, Program A seems near the average in the time devoted to eating and sleeping. However, the
average for the ten programs for time devoted to physical development is about 66 percent. Program A's additional time, as indicated in Table III, is spent in large muscle activities.

The children in Program B were involved in activities to aid in physical development for 50 percent of the day. The time devoted to large and small muscle activities were 11 percent and 4 percent respectively.

Programs C, D, E, G, H, and I deviated only from 1 to 7 percent from the 66 percent average time devoted to physical development. While Program F was slightly higher than the average, by only 12 percent, it is within the limits of the other programs surveyed. This program had one of the best balances of time devoted to large muscle, small muscle, and music activities. (It is noteworthy to interject at this time that the teacher of Program F was one of the two teachers holding an advanced degree in early childhood education. She also was one of the more experienced of the younger teachers and had had experience in the Head Start Program.)

Program J was only 3 percent below the average time devoted to physical development. However, Table III reveals an unbalanced portion of time spent, especially in large muscle activities and rest time. The rest period, on the day these data were gathered, was one hour and nineteen minutes in length. Program J devoted only 9 percent of the
day surveyed to large muscle development. The ten-program average percentage of the day used for large muscle physical development was 22 percent.

The primary focus of this study was to determine the extent to which kindergarten programs for the development of large muscle skills and activities were planned and carried out. The data were collected so that an accurate record, on a time-sample basis, was kept of each specific large muscle activity. The results are reported in Table IV.

**TABLE IV**

MINUTES OF A SIX-HOUR DAY SPENT FOR SPECIFIC SKILLS AND ACTIVITIES IN THE DEVELOPMENT OF LARGE MUSCLES AND THE AVERAGE MINUTES FOR THE KINDERGARTEN PROGRAMS SURVEYED

<table>
<thead>
<tr>
<th>Skills and Activities</th>
<th>Program</th>
<th>Avg. Min.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Jumping, kicking, throwing</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>catcher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merry-go-round</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>Climbing</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>Swinging</td>
<td>17</td>
<td>3</td>
</tr>
<tr>
<td>Sliding</td>
<td>17</td>
<td>4</td>
</tr>
<tr>
<td>Seesawing</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Running</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Skipping</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Balancing</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>52</td>
<td>12</td>
</tr>
<tr>
<td>large muscle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>119</td>
<td>40</td>
</tr>
</tbody>
</table>
All of the kindergarten programs surveyed were first-year Minimum Foundation Programs commonly known as "all day programs." The data are reported on the basis of the six-hour day. The percentage of time spent in each activity was computed first and then converted to minutes.

The line reporting miscellaneous large muscle activity includes the large muscle activities for which no specific category was set up. This category includes such indoor and outdoor activities as digging, riding on wheeled toys, large block building, pushing, carrying, scuffling and fighting, cleaning up the room, rolling tires, and brushing teeth. Data concerned with walking, the most common large muscle activity, were not kept. It should also be noted that other parts of the kindergarten day, such as music and rhythms and creative dramatics, do aid, in part at least, in the development of large muscles. The greatest majority of large muscle skills and activities observed in the ten programs surveyed took place outdoors.

From Table IV it can be seen that the maximum number of minutes spent developing large muscle skills and activities was 119, while the minimum was 32 minutes. Only two programs were significantly below the 79 minute average for the ten programs surveyed. Play on the outdoor stationary equipment accounted for the greatest number of minutes in any category other than miscellaneous.
Study of Table IV indicates that children do generally use the equipment and apparatus that are found on the playground. Only five of the programs surveyed had merry-go-rounds and six had seesaws. Just over three minutes were spent on the merry-go-rounds, and slightly less than three minutes were spent on the seesaws. It would appear that when playgrounds are to be equipped money would best be spent on equipment for climbing and swinging and other vigorous activities as well as for an abundance of such equipment as balls, ropes, hoops, balance beams and boards, and other equipment of tested and proven value.

It has been established from the literature in Chapters II and III and from the present survey that program planning and guidance are necessary to a well-balanced program. In a well-balanced program, students should have an opportunity to grow and mature. Some of this needed growth and maturity may be observed in noting where and how the student spends his time. He will need the alert guidance of an informed and observant teacher whose program has built into it a flexibility that will allow the child to make choices and decisions as to the activities in which he will choose to participate. Table V points out the percentage of physical activities that were structured or set by the teacher and the percentage of the physical activities in which the child had an opportunity to select an activity that suited his desire or challenge of the moment.
Table V shows that the programs surveyed had a high proportion of their activities highly structured, with the exception of Programs F and G. Young children are capable of making many decisions concerning their participation in certain activities of the program. Through skilled guidance, children make decisions, gain confidence and have a better opportunity to develop independence. Young children, especially from disadvantaged homes, need limits and ground rules to follow as well as assistance in making and assuming responsibility for the decisions. They must learn this skill through practice. Perhaps the average of the ten programs, about 68 percent structured and 32 percent for choices, would allow both pupils and teachers an opportunity for total growth and learning.

The teacher has a great responsibility to plan and carry out the program that will be of most value to his children. Since the main emphasis of this study lies in the

<table>
<thead>
<tr>
<th>Program</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Play or Work</td>
<td>16</td>
<td>18</td>
<td>37</td>
<td>32</td>
<td>30</td>
<td>49</td>
<td>45</td>
<td>22</td>
<td>33</td>
<td>34</td>
<td>31.6</td>
</tr>
<tr>
<td>Structured</td>
<td>84</td>
<td>82</td>
<td>63</td>
<td>68</td>
<td>70</td>
<td>51</td>
<td>55</td>
<td>78</td>
<td>64</td>
<td>66</td>
<td>68.4</td>
</tr>
</tbody>
</table>

Table V

Percentages of the physical activities observed that were free play/work, structured, and the averages for the kindergarten programs surveyed.
importance of the program for large muscle development, it was noted in this survey what percentage of the large muscle activities are teacher or student initiated. The results are found in Table VI.

**TABLE VI**

**PERCENTAGES OF TEACHER INITIATED AND STUDENT INITIATED LARGE MUSCLE ACTIVITIES AND AVERAGES FOR THE KINDERGARTEN PROGRAMS SURVEYED**

<table>
<thead>
<tr>
<th>Initiator</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher</td>
<td>24</td>
<td>23</td>
<td>29</td>
<td>0</td>
<td>42</td>
<td>31</td>
<td>0</td>
<td>45</td>
<td>16</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>Student</td>
<td>76</td>
<td>77</td>
<td>71</td>
<td>100</td>
<td>58</td>
<td>69</td>
<td>100</td>
<td>55</td>
<td>84</td>
<td>100</td>
<td>79</td>
</tr>
</tbody>
</table>

An examination of Table VI shows that in three of the ten programs surveyed, the teachers did not initiate a single large muscle activity. The development of large muscle skills and activities are necessary and a developmental part of the kindergarten curriculum. Because the physically skillful child has so many advantages over the unskilled child, and since skills are learned, it seems necessary that every kindergarten teacher must devote a part of each day to teaching and to allowing time for the young child to develop poise, skills, and confidence as he masters the control of his body in a physiologically sound way—that is, large muscles and gross body coordination first, followed by small muscles and fine coordination.
In order to understand the young child and his school needs, it is necessary to look at his entire program, and then to decide what, if any, adjustments need to be made. Through the analysis of the filmed data gathered, it was possible to determine what part of the kindergarten day was spent in the various activities. Table VII presents this information.

**TABLE VII**

PERCENTAGES OF FILMED OBSERVATIONS ON WHICH DIFFERENT KINDS OF ACTIVITIES APPEARED TO BE IN PROGRESS FOR THE KINDERGARTEN PROGRAMS SURVEYED

<table>
<thead>
<tr>
<th>Area or Activity</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Arts</td>
<td>0%</td>
<td>7%</td>
<td>13%</td>
<td>6%</td>
<td>4%</td>
<td>11%</td>
<td>12%</td>
<td>5%</td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td>Academic Instruction</td>
<td>1</td>
<td>10</td>
<td>3</td>
<td>8</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Language Development</td>
<td>16</td>
<td>9</td>
<td>15</td>
<td>13</td>
<td>17</td>
<td>10</td>
<td>17</td>
<td>10</td>
<td>9</td>
<td>23</td>
</tr>
<tr>
<td>Readiness Games and Activities</td>
<td>8</td>
<td>17</td>
<td>2</td>
<td>6</td>
<td>9</td>
<td>8</td>
<td>7</td>
<td>8</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Lunch, Snacks</td>
<td>11</td>
<td>13</td>
<td>13</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>13</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Rest, Nap</td>
<td>11</td>
<td>13</td>
<td>13</td>
<td>11</td>
<td>17</td>
<td>13</td>
<td>11</td>
<td>22</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Music &amp; Rhythms</td>
<td>10</td>
<td>8</td>
<td>13</td>
<td>11</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>10</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Standing in line</td>
<td>2</td>
<td>13</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>8</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Small Muscle Activity</td>
<td>8</td>
<td>4</td>
<td>4</td>
<td>7</td>
<td>8</td>
<td>10</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>Large Muscle Activity</td>
<td>33</td>
<td>11</td>
<td>22</td>
<td>23</td>
<td>20</td>
<td>29</td>
<td>24</td>
<td>23</td>
<td>25</td>
<td>9</td>
</tr>
</tbody>
</table>

The overall program for Program A did not allow general art activities. There were no planned or creative art
activities nor were there any creative dramatics or play in the playhouse. Otherwise, Program A allowed some time for the various categories of activity. More than three minutes could have been spent in academic instruction.

Program B was definitely more academically oriented than any of the ten programs surveyed. These children were involved in structured academic instruction for 10 percent, or thirty-six minutes, of the day. In addition, readiness activities were initiated and carried out for a total of 17 percent, or sixty-one minutes, of the school day. The children in Program B spent 13 percent, or forty-seven minutes, of the day standing in line. (It is interesting to interject at this point that the teacher of Program B has a bachelor's as well as a master's degree in elementary education. She holds the Texas Education Agency Kindergarten Endorsement but has had no student-teaching experience in kindergarten.) Program B devoted only 4 percent, or fourteen minutes, to small muscle development and 11 percent, or forty minutes, of each day to activities that helped develop the five-year-old's large muscles and skills.

In Program C only 2 percent, or seven minutes, of the day were devoted to readiness games and activities. Program C also devoted only 4 percent, or fourteen minutes, of the day to small muscle activities.

Programs D, E, F, G, H, and I seem to be balanced programs in that some time was given to each category of
activity, and few extreme amounts were given. Programs F, G, and I gave no time to academic instruction. Next, Programs G and H have their children standing in line eighteen minutes and twenty-nine minutes respectively during one day. Probably most of this is wasted time.

The kindergarten day for Program J devoted no time to readiness games and activities. However, the teacher did spend 23 percent, or eighty-three minutes, in language development. Considering the fact that the teacher had a majority of Spanish-speaking children, this time was probably well spent. Nevertheless, it seems a little hard to justify 22 percent, or one hour and nineteen minutes, of rest time for both Programs I and J.

The answer to Research Question IV is given in narrative form, and the answers conform to the order of the instrument from which the answers were learned rather than from the order as stated in Chapter I.

The teachers in this study replied to nine questions (Appendix C) about their kindergarten program—its planning and implementation. Their replies were recorded on magnetic tape and analyzed; the results are reported below.

In answer to the first question, it was found that only two principals required their teachers to turn in lesson plans. Three teachers stated that they always made and used lesson plans, while three others stated they often made plans. The type of plans ranged from "daily, detailed plans"
to "notes jotted in the margins." Every teacher, though, emphasized that lesson plans could not be followed strictly since the program for kindergarten needed to be flexible.

The teachers were next asked if they were furnished an instructional guide. Four of the ten teachers were furnished an instruction guide. Of the four who received guides, one replied that she used her guide daily, one said often, and two replied sometimes. All of the teachers thought more and better guides should be issued to them.

The next question asked was an attempt to find out if the teachers presented some materials or activities in a planned sequence. Only one teacher presented a planned sequence always, and one did it frequently. Seven reported that they presented materials in a planned sequence sometimes. Mathematics and language skills were the examples given most often. One teacher reported that she seldom presented activities in a sequence.

Question five specifically asked if they had, or followed, a planned program for the development of physical-motor skills. Eight of the ten teachers did not have a planned program for the development of physical-motor skills. Two teachers reported that they often followed a planned program while one answered sometimes and one seldom. Three replied they never followed a planned program for the development of physical-motor skills.
Replies to question six, concerning the necessity to work with an individual child in the area of motor skills or muscle development, were evenly varied and covered each area of response. Two teachers reported that they always worked with individual children in the development of motor skills, while two teachers replied "often," two "sometimes," two "seldom," while two reported that they never worked with individual children in developing motor skills.

Do you give demonstrations on "how to do" some physical skills such as rope jumping, throwing, and skipping? was answered by two teachers with "always." Four teachers reported they often gave demonstrations. Further questioning revealed that four of these six gave demonstrations at the beginning of the year but not later in the year. Two teachers seldom gave demonstrations. One of these reported that she believed the children would learn better if they just tried the skills over and over. It was pointed out in Chapter II that most skills are learned through trial and error. However, it was further noted that these skills need to be taught daily, with appropriate demonstrations when needed and with sufficient time given to the children to practice the skills under the close supervision of the teacher in order to keep from learning incorrect ways of performing skills that would later need to be re-learned.

The teachers of the ten programs surveyed were asked if they kept a written record of each child's physical skill,
strengths, and weaknesses. Not one teacher kept a record such as that per se. However, two teachers did report that they kept anecdotal records and included some comments about the child's physical skill accomplishments.

These ten teachers were asked if they used audio-visual aids in association with their activities program. One half said they did, either often or sometimes, while the other half said they seldom used them. One reason given for not using the aid was that good materials did not seem to be available. Most teachers did say they used records for the music and rhythms activities. Three teachers had their classes watch "Sesame Street" on television. They did actively participate in the activities suggested by the program.

In the programs surveyed, some definite examples of planning were in evidence. In Program A, there were nine specific instances of program planning. These included such things as having a plan book with at least main ideas written down. Some educational objectives were stated. Other examples of easily recognizable planning were the fact that needed materials were ready and handy.

Six examples of planning were recorded for Program B, while Programs E, F, G, and H displayed four each. Programs C, D, and I exhibited three, and J only one, example of planning. Nevertheless, there were two programs in which children became "over-stimulated" and thus rowdy and seemed frustrated.
In addition to the planning which was observed, several questions were asked in regard to program planning and implications. Without an exception, the teachers were able to relate and to expound on the theory and practice of the importance of planning.

In addition to the already reported aspects of the surveyed kindergarten programs, some other information concerning the general program has been compiled and is reported in Table VIII.

**TABLE VIII**

PERCENTAGES OF CHECKLISTS ON WHICH DIFFERENT KINDS OF KINDERGARTEN ACTIVITIES APPEARED TO BE IN PROGRESS AND THE AVERAGES FOR THE KINDERGARTEN PROGRAMS SURVEYED

<table>
<thead>
<tr>
<th>Activity</th>
<th>Program</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indoors</td>
<td></td>
<td>84%</td>
<td>95%</td>
<td>82%</td>
<td>84%</td>
<td>86%</td>
<td>77%</td>
<td>76%</td>
<td>92%</td>
<td>89%</td>
<td>89%</td>
<td>85%</td>
</tr>
<tr>
<td>Outdoors</td>
<td></td>
<td>16</td>
<td>5</td>
<td>18</td>
<td>16</td>
<td>26</td>
<td>24</td>
<td>9</td>
<td>11</td>
<td>11</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Teacher Initiated</td>
<td></td>
<td>84</td>
<td>74</td>
<td>74</td>
<td>65</td>
<td>86</td>
<td>63</td>
<td>66</td>
<td>81</td>
<td>78</td>
<td>79</td>
<td>75</td>
</tr>
<tr>
<td>Student Initiated</td>
<td></td>
<td>16</td>
<td>26</td>
<td>26</td>
<td>35</td>
<td>14</td>
<td>37</td>
<td>34</td>
<td>19</td>
<td>22</td>
<td>21</td>
<td>25</td>
</tr>
<tr>
<td>Oral Instructions or Directions</td>
<td></td>
<td>41</td>
<td>24</td>
<td>34</td>
<td>14</td>
<td>30</td>
<td>29</td>
<td>37</td>
<td>25</td>
<td>50</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>Audio-Visual Aid or Demonstration</td>
<td></td>
<td>22</td>
<td>26</td>
<td>37</td>
<td>24</td>
<td>24</td>
<td>29</td>
<td>24</td>
<td>32</td>
<td>31</td>
<td>18</td>
<td>27</td>
</tr>
<tr>
<td>Individual Interaction Between Teacher and Student</td>
<td></td>
<td>35</td>
<td>26</td>
<td>18</td>
<td>22</td>
<td>57</td>
<td>49</td>
<td>47</td>
<td>51</td>
<td>58</td>
<td>32</td>
<td>40</td>
</tr>
</tbody>
</table>
Perusal of Table VIII shows the percentage of observational checklists on which various activities were occurring at the moment the checklist was marked. From Table VIII it can be seen that for the ten programs surveyed, they spent an average of 85 percent of the day indoors and 15 percent of the day outdoors. Throughout the entire day, the teacher is the initiator of the activity 75 percent of the time, while the student has a choice or selection between his participation in activity 25 percent of the time. For an average of 32 percent of the checklists marked, the teacher was giving oral instructions or directions and was using an audio-visual aid or giving a demonstration of some kind on 27 percent of the checklists. Finally, at the moment the checklists were marked, an average of 40 percent of the time the teacher was engaged in individual interaction of some type with a child or group of children. Sometimes the interaction was physical and at other times it was verbal.

The kindergarten teacher is the key figure in the program. He has the duty and the responsibility to organize, to plan, and to initiate efficiently and successfully and carry out the kindergarten program. In order to be successful, a certain basic background of experience and training is thought to be necessary.

A study of Table IX shows that the selected programs for study were staffed with relatively young teachers, 60 percent of them being twenty-eight years old or younger.
<table>
<thead>
<tr>
<th>Program</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>24</td>
<td>25</td>
<td>24</td>
<td>28</td>
<td>52</td>
<td>27</td>
<td>24</td>
<td>30</td>
<td>38</td>
<td>35</td>
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<tr>
<td>Years of Teaching Experience</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>15</td>
<td>5½</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Levels Taught</td>
<td>K,2</td>
<td>K,1</td>
<td>K,2</td>
<td>HS</td>
<td>K,1</td>
<td>HS</td>
<td>K,2</td>
<td>K,3</td>
<td>K,1-6</td>
<td>K,1</td>
</tr>
<tr>
<td></td>
<td>2,6</td>
<td>3</td>
<td>K,1</td>
<td>2,3</td>
<td>K,1</td>
<td>2,3</td>
<td>K,1</td>
<td>K,1</td>
<td>Music</td>
<td>7,8</td>
</tr>
<tr>
<td>Level Taught Last Year</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>X</td>
<td>Music</td>
<td>3-6</td>
<td></td>
</tr>
<tr>
<td>No. Years Teaching Kindergarten</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Professional Certificates Held</td>
<td>ET</td>
<td>ET</td>
<td>ET</td>
<td>ET</td>
<td>ET</td>
<td>0</td>
<td>ET</td>
<td>ET</td>
<td>ET</td>
<td>TKE</td>
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<tr>
<td>Working Toward Texas Kindergarten Endorsement</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Did Student Teaching in Kindergarten</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

HS = Head Start; ET = elementary teacher; TKE = Texas Kindergarten Endorsement; OS = out of state; 0 = none.

Their teaching experience ranged from two to five years for the younger teachers, while the most experience any teacher in the group had was fifteen years. Two of the teachers had experience in Head Start, while all of them had teaching experience in the primary grades before teaching a kindergarten.
class. Nine of the ten teachers hold elementary teaching certificates and five already have the Texas Kindergarten Endorsement. Three of the remaining five are currently working toward their endorsement. Only six of the teachers involved in this survey had done student teaching in a kindergarten prior to receiving their position as kindergarten teachers.

Table X furnishes further details concerning the professional preparation of the ten teachers who cooperated in this study.

Table X indicates that eight of the teachers hold bachelor's degrees in elementary education, while one has an all-level and the other a specialty in primary-kindergarten. Five of these teachers have earned master's degrees, with three of those in elementary education and two in early childhood education. Five teachers have earned college credit in early childhood education on the bachelor's level, while eight have received credit in early childhood education on the graduate level. Eight of these teachers have never had a course or attended a workshop which dealt specifically with a kindergarten physical education program or a program concerned with large muscle development.

In general, these teachers seem to be adequately prepared professionally to be teaching in the newly established Texas kindergarten programs. However, it has been shown through the data gathered and reported in this study that
**TABLE X**

TEACHERS' FORMAL TRAINING AND WORK IN EARLY CHILDHOOD EDUCATION

<table>
<thead>
<tr>
<th>Major: Bachelor's Degree</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Bachelor's Degree</td>
<td>EE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Major: Master's Degree</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Master's Degree</td>
<td>ECE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Have had courses in Early Childhood Education</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>A</td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Early Childhood Hours:</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor's level</td>
<td></td>
</tr>
<tr>
<td>Graduate level</td>
<td>9</td>
</tr>
<tr>
<td>Course or workshop in Kindergarten physical</td>
<td></td>
</tr>
<tr>
<td>education or large muscle development</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*EE = Elementary Education; ECE = Early Childhood Education; AL = Education, All Levels; P-K = Primary-Kindergarten.*
Immediate measures need to be initiated in surveying and evaluating the existing Texas kindergarten programs. In this way, steps may be taken now to insure that the kindergarten programs beginning in Texas will be based upon the developmental characteristics and needs of young children.
CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

The primary purpose of this study was to survey the total general programs of some of the newly established kindergartens in Texas. The primary focus was toward the program for the development of large muscle, physical motor skills rather than the academic program.

In order to carry out this study, ten kindergarten programs were selected. They were all first year, all day (approximately six hours) Minimum Foundation Programs established under House Bill No. 240. The survey included ten programs housed in seven schools from five local school districts within a two-hundred-mile radius of the greater Dallas-Fort Worth metropolitan area.

This survey was based upon research questions which were generated at the onset to give the study purpose and direction. The purpose of this study was to survey the general programs and to report the extent to which the programs were being carried out in terms of (1) the equipment and materials available and used, (2) the kinds of activities provided, (3) the evidence of program planning and implementation by the teacher, (4) the evidence of teacher understanding of the importance and implications of a structured
motor skill activities programs, and (6) the teacher's professional training and experience.

The data for this study were gathered through the use of four instruments: an observational checklist which was appropriately filled out and completed every ten minutes, a self-report questionnaire, a personal interview schedule, and movie filming on a time-sample basis for the entire six-hour duration of the day for each program surveyed.

The related literature and research was reviewed in order to substantiate the role of play, movement education, muscle development, motor development and behavior, skill development, and physical education programs. A brief synthesis follows.

Summary

Play has many established values to young children. It is physically stimulating and offers many learning opportunities, while at the same time allowing the child to release pent-up emotions. Play to young children is natural and satisfying while it aids in physical development, muscle building, motor coordination, and socialization.

In movement education, young children learn through sensory-motor experiences. They also have the opportunity to practice and master the basic skills which are so important and suited to their developmental level.
The muscular development of young children is complex and very important to their total growth and development. Through the development of muscles come strength, power, agility, and general overall body control.

Five-year-old children grow rapidly and have an acute need for gross body activity. As they gain large muscle gross motor coordination, they are preparing themselves to be able to gain small muscle coordination. Skillful control over small muscles is a prerequisite for academic success in school. In addition, the child who has good motor control is more likely to be happy, well-adjusted, confident, and admired in the eyes of his peers. The responsibility for providing experiences that aid in motor development belongs to the community, parents, schools, and teachers.

In order for the child to develop good motor skills, it will take more than exercise and occasional practice. The early years are most important to the child in mastering the basic skills. Skills are learned. Skills must be taught daily so that they can be practiced and mastered.

If children are to develop properly, they must be engaged in all types of physical activities that are planned and presented in a logical fashion based on the developmental characteristics of children. A well-planned program includes daily teaching of skills with time allowed for children to practice the skills.
Findings

A summary of the findings of this study is as follows:

1. The programs surveyed used between 46 percent and 76 percent of the equipment and apparatus available to them on the day surveyed.

2. The programs surveyed used the existing playgrounds, equipment and apparatus. There was an acute shortage of equipment and apparatus of the type normally found in kindergartens.

3. There was an acute shortage of non-stationary equipment such as wheeled toys, jump ropes, balls, and hoops.

4. A sufficient portion of the day, about 66 percent, was spent to aid in the physical development of the children. However, teacher planned and initiated activities designed specifically for the development of large muscle skills occurred, on the average, only 22 percent of the time spent in large muscle activities. Written records concerning the physical skill strengths and weaknesses of individual children were not kept.

5. There was little program planning of activities specifically for the development of large muscle skills by the teachers.

6. The teachers' professional qualifications were generally adequate for teaching in the newly established Texas kindergartens.
Conclusions

The following conclusions, based on the analysis of data, appear to be valid within the limitations of this study:

1. The programs made use of the equipment and materials that were available.

2. Special care should be given in the planning, selecting, and placing of outdoor equipment and apparatus.

3. Playgrounds that contain only stationary apparatus are not properly equipped.

4. An adequate percentage of the day was spent in the physical development of children. However, an insufficient percentage of the time was spent specifically for the development of large muscle skills and activities.

5. Although teachers seem to understand the theory and reasons for planning, meager evidence of program planning was observed, especially in the area of activities for the development of large muscle skills.

6. Generally speaking, the teachers of the kindergarten programs surveyed had adequate credentials for elementary school teachers. Coursework and laboratory type experiences for early childhood education were somewhat deficient.
Recommendations

Based upon the results of this study, the following recommendations are made:

1. A greater variety of equipment and materials should be available and used. The kindergarten teacher, with the assistance of the curriculum coordinator, parents, and/or other qualified persons from the school and community should carefully select and/or construct the additionally needed equipment and apparatus, based on the developmental needs and levels of his students.

2. The local school district, community, and parents should cooperate in the planning, the selecting, and the placing of safe, sturdy, quality equipment and apparatus designed for kindergarten-aged children.

3. Playgrounds need many more items than the traditionally placed stationary apparatus. Wheeled toys, jump ropes, balls, hoops, etc. should be supplied in adequate numbers so that young children will not have to spend excessive amounts of time waiting to use the equipment and apparatus.

4. Kindergarten programs should devote a major portion of each day to specific activities to aid in the development of large muscle skills and activities. Further, these activities should be the result of the teacher's evaluation of the developmental level of individual students. These activities should be initiated, supervised, and guided by
the teacher. Written records concerning the child's physical skill strength, weaknesses, and peculiarities should be kept.

5. Immediate measures need to be taken both by teacher-training institutions and also by local school districts to inform teachers of all children, but especially teachers of young children, of the benefits and the necessity of daily, as well as long-range planning of a well-balanced physical activities program designed to aid children in the development of large muscle skills and activities.

6. There is a definite need for carefully planning programs for the development of large muscle skills and activities.

7. Teachers working toward elementary certification in Texas should be required to take college credit in early childhood education, specifically in the growth and developmental characteristics of young children (age two to eight years), and a survey course to acquaint them with the philosophy, history, program, practices, and implications of early childhood education.

Recommendations for Further Study

The following recommendations for further study are made:

1. A study should be made to determine if the needed additional quantity of equipment and apparatus is being supplied in Texas kindergartens.
2. A study should be made to determine if the playground schedules have been arranged so that kindergarten children are not forced to share the facilities and equipment at the same time that the older children are using them.

3. A study should be made to determine if teacher training institutions are providing coursework specifically covering the developmental needs and characteristics of young children, their need to participate in large muscle activities, and the proper developmental order of presenting skills.

4. A study should be made to determine if other grade levels are teaching physical motor skills in a developmental sequence.

5. This study should be replicated, selecting kindergarten programs composed primarily of children from more affluent family backgrounds.

6. This study should be replicated, using a smaller number of programs but spending a longer period of time gathering the data for each program.

7. Studies should be made to develop standards by which evaluation can be made of programs for the development of physical-motor skills for young children.

8. A study should be made to develop an instructional guide for a program of physical motor skills.
### APPENDIX A

<table>
<thead>
<tr>
<th>Large Muscle Activity</th>
<th>Small Muscle Activity</th>
<th>General Arts</th>
<th>Music Rhythms</th>
<th>Readiness Games/act</th>
<th>Language Develop.</th>
<th>Academic Instruct</th>
<th>Lunch Snack</th>
<th>Rest/Nap</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># Children Involved</td>
<td>Indoors</td>
<td>Outdoors</td>
<td>Free Play (work)</td>
<td>Structured Activity</td>
<td>Large Muscle Arms and Trunk</td>
<td>Whole Body</td>
<td>Oral Inst. or Direct. Given</td>
<td>A-V aid or Demon</td>
<td></td>
</tr>
<tr>
<td>Teacher Kept W-Record</td>
<td>Teacher Initiated</td>
<td>Student Initiated</td>
<td>Individ. Interact with Teacher</td>
<td>Evidence of Program Planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Equipment and Materials Used**: Is the environment over-stimulating?
APPENDIX B

SELF-REPORT QUESTIONNAIRE

Name_______________________________________ Age__________

Number of years teaching experience__________ Sex________

Grade levels taught__________________________

What grade level did you teach in the 1969-70 school year? ____________________________

Date(s) of college or university degree(s)______________________

College Major: Bachelor's degree______________________

Master's degree_________________________________________

College Minor: Bachelor's degree______________________

Master's degree_________________________________________

List last year in which college work or courses were taken________________________

Have you had any courses in early childhood education? ____________________________

How many hours of early childhood courses on:

Bachelor's ___________________ Graduate____________________

How many years have you taught kindergarten?__________________________

Public kindergarten_______ Private kindergarten___________

In which state(s) have you taught kindergarten?__________________________

Have you had a course(s) or workshop specifically dealing with the physical education or large muscle program in kindergarten? Yes________ No________
Course(s)_________________________ Workshop(s)__________________________

Do you have a teacher's guide for the teaching of physical education or for large muscle development? Yes____ No____

Do you know if the T.E.A. requires a specific number of minutes per day or week in the kindergarten to be used in physical education or muscle development? Yes____ No____ I do not know________________

About what part of each day do your children spend engaged in activities particularly for the development of large muscles?

1/6_______, 1/5_______, 1/4_______, 1/3_______, 1/2_______

Do you use a planned sequence of large muscle activities? Yes____ No____ Sometimes_____. Explain.

What professional certificates do you now have?__________________________

Do you have the T.E.A. Kindergarten Endorsement?

Yes____ No____

Are you working toward the Kindergarten Endorsement?

Yes____ No____

If so, where?________________________________________________________

Did you do student teaching in kindergarten? Yes____ No____

In your own opinion what experiences have best prepared you for teaching kindergarten?

In your kindergarten teaching do you feel you have areas of strengths and weaknesses? Explain.
Which area of the curriculum do you consider to be most important and why? Explain briefly.

What do you consider to be your strongest teaching area?

What do you consider to be your weakest or most uncomfortable teaching area?
APPENDIX C

PERSONAL INTERVIEW QUESTIONS

1. Does your principal require you to turn in lesson plans?

2. Do you make and follow lesson plans?

3. Were you furnished an instructional guide? If so, do you use it?

4. Do you present some materials or activities in a planned sequence? Explain.

5. Do you follow a planned program for the development of physical motor skills?

6. Do you ever find it necessary to work with an individual child in the area of motor skills or muscle development? Explain.

7. Do you give demonstrations on "how to do" some physical skills such as rope jumping, throwing, and skipping? Explain.

8. Do you have, or keep, a written record of each child's physical skill strengths and weaknesses?

9. How often do you use audio-visual aids in association with your activities program? Explain.
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