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RELATIONSHIPS AMONG MOVEMENT PATTERNS, PERFORMANCE SCORES AND
EXPRESSED MOVEMENT SATISFACTION OF CHILDREN IN THE ELEMENTARY
SCHOOL

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the
Degree Doctor of Philosophy in the Graduate School
of The Ohio State University

By

Catherine Elizabeth Bennett, B.S. in Education, M.A.

The Ohio State University
1971

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CHAPTER 1
INTRODUCTION

"Where there is life, there is movement; when there are children, there is almost perpetual movement."\(^1\) For the child movement is life and very fundamental to his being in the world. As the child moves, he is constantly pushing, tugging, and expanding his environment, gaining in understanding and mastery. Moving becomes a way of learning for the child and eventually forms a firm basis for future learning experiences. Moving is the means of self discovery about himself and the world, eventually leading to a more complete understanding of how to cope with, to control, to expand, and to change the environment. Moving affects the child's total being becoming a personal expression for him.

As these movement experiences become more frequent, the child begins to attach some meaning to what is happening to him. He can gradually ascertain that he learns through movement and about movement. Thus, meaning can be attached to the movement itself; for example, he enjoys moving his arms rapidly in a circle or he enjoys hanging on a lamp post swinging around and around. Or, the movement provides the locomotion to go somewhere. Moving can be the vehicle of movement expression or the very expression itself.

Because some movements are more important or provide satisfaction and/or joy, they tend to be repeated often; perhaps these movement experiences become the basis for selecting future movement choices. Likewise, other movements may be distasteful resulting in avoidance. These feelings are personal and different for each child. The importance, satisfaction or joy attached to the movement experience may affect movement patterns in the next and future experiences.

Movement becomes characteristic of the child as he selects and repeats sequences which have some meaning for him.

Gesell suggests that the child's physical and practical self is muscular:

All told he has over 600 distinguishable muscles. Most of them are firmly attached in symmetrical pairs to the skeleton with its elaborate apparatus of joints and levers... The complexity of the muscular system is beyond imagination, because a child has some 40,000,000 muscle fibers, each which, in turn, is made up of an immense number of microscopic fibrils which receive impulses via a veritable jungle of nerve cells in the brain and spinal cord. Thus moving is the very core of the child's existence.²

It takes years to organize this system; however, the most organization occurs during the first ten years.

The first 5 years of life generally are regarded as a period during which the fundamental motor patterns emerge as the child deals with problems of locomotion and as he manipulates the various objects encountered in his environment.³

The repeated and varied use of this muscular system is important in the above organization as the child begins to acquire control of his body in physical activities. The physical activities in turn contribute to the organization process.


³Wickstrom, Fundamental Motor Patterns, p. 9
During these early years and later, he often uses movement in physical activities to reach a goal. For example, he jumps as high as he can or jumps to touch a mark on the wall, or he tries to throw an object to hit a spot on the fence.

The results of the effective organization of the body as it moves becomes apparent as the child seeks the above goals. Thus, we are apt to find the six year old child pursuing physical activities utilizing fundamental motor skills including locomotor, non-locomotor and manipulative. These fundamental skills require the child to move in space using both general and personal space. This space utilization may be a reflection of cultural influence, personal preference, previous and present movement experiences and the maturational level of the child.

The importance of effective space utilization becomes apparent when the child selects the movement patterns which seem to answer the specific purpose of the movement. These movement patterns, in turn, reflect the effective organization of the body. This effective use of space often reflects a cultural learning. Certainly the particular culture the child grows and matures in affects the selection of movement patterns which seem acceptable to him and the adults around him. He is also affected by the impact of the environment as it affects him. He may mime the movement patterns of others as one way of learning what acceptable patterns are, utilizing fundamental motor skills reflecting many and varied previous movement experiences. Other learning may occur when the child selects movement pattern which have meaning for him and repeats and varies them because they are satisfying.
The cultural impact on the fundamental motor skills the child acquires and uses is very much related to the effective utilization of these skills. Halverson\(^4\) suggests that many children limited in movement possibilities because of their background experiences may never attain the mature patterns needed in performing physical skills in future experiences, which may be related to the decision of the adult to remain active throughout his life.

Because movement is such a personal mode of expression, we need to discover what causes children to move and enjoy this experience and to find, if possible, ways of predicting the future use of movement experiences.

We live in an environment full of movement. It is a manifestation of life itself and one way in which we can understand the world through our own senses of touch and movement . . . In human beings we observe an even greater range of movement possibilities than in other life forms.\(^5\)

The study of the moving child is appropriate. Moreover, the study of the child performing fundamental patterns of movement is equally appropriate for the first grade child.

Moving is the child. The child is moving.


STATEMENT OF PROBLEM

One aspect of the study was to have children perform fundamental motor skills which are a common part of elementary physical education programs and to measure the results of the performances. These performances of the standing broad jump, tennis ball throw for distance, and a kick for accuracy were reasonable tasks for six year old children having their motor basis early in the life of the child. Multiple image photographs were taken during the actual motor skill performances permitting an investigation into the amount of horizontal and vertical space utilized by the child during his performances. This analysis permitted an investigation of the relationships which might exist between actual performance scores and space utilization during performances.

Each performer was given the Movement Satisfaction test which resulted in a numerical score reflecting the expressed satisfaction of moving. Thus, three scores were derived from each performer: (1) Movement Satisfaction Scale score, (2) performance scores for the three skills, and (3) space utilization scores from the skill performances. It was the purpose of the study to see if any relationships existed among these three kinds of scores for six year old children used in the study. A further problem was to see if the boys or girls might differ as a group in any of the relationships.

Hypothesis:

It is expected that there will be no significant differences in the amount of expressed satisfaction as the use of space in the
skill performances increases and/or the actual performance scores increase. Further, there will be no significant differences in the space utilization scores as the performance scores increase and/or the amount of expressed satisfaction increases. There will be no significant differences between the boys or the girls when these groups are compared.
NEED FOR THE STUDY

The benefit of physical activity to the human race is recognized by many professions concerned with the well-being of man. Certainly the physical education profession is concerned with the benefits derived from activity for children and adults. It is, then, of the utmost importance to find what motivates the human being to be active and to remain active throughout the life span. Children are active, but frequently the amount of activity decreases as age increases. Investigation into the possible causes of cessation of activity is appropriate.

Satisfaction derived from physical activity may be one motivating factor in encouraging participation and providing enjoyment of activity through the years.

Motor skills learned in childhood or youth provide the tools which encourage participation and provide enjoyment in vigorous activity in the adult years.6

Because these tools are developed in the early years of the child, feelings of satisfaction or dissatisfaction may be developed with the use and practice of these tools. The Movement Satisfaction Scale was developed to try to measure the satisfaction the individual child attaches to these basic skills of moving.

Success in performing the basic skills may be related to the satisfaction attached to the performance. One might expect to find children, who are highly skilled in the fundamental motor patterns expressing a higher satisfaction score. It is important to determine at what age children begin to discriminate between patterns of movement which are more satisfying. Perhaps this occurs when the child

6Anna S. Espenschade and Helen Eckert, Motor Development. (Columbus, Ohio: Charles E. Merrill Books, Inc., 1967) p. 252
becomes cognizant of his ability in relation to that of his peer group. Thus, if the child attaches significance to being successful in performance with satisfaction, then the higher skilled children will express a more positive movement satisfaction.

There has been no research done on the utilization of space in the pursuit of movement tasks and how this relates to the expressed movement satisfaction of the individual. This aspect of the study will hopefully provide more information as to the reasons why man will remain active or will cease being active during his life span.

Moving is one of the child's primary means of investigating and learning about himself and the environment. Some motor skills are frequently repeated while others are discarded. Perhaps some fundamental motor skills are more satisfying than others and tend to be repeated more often. The mover then begins to discriminate at some age and rule out the activities which seem to have a less positive meaning for him. Little, if any, research has been done to find out why and when children begin to express satisfaction and dissatisfaction with certain movement patterns. If this occurs at an early age, it certainly will affect the content and methods utilized in elementary physical education programs.
Assumptions

This study was based on the following assumptions which needed to be accepted before the study could begin:

1. Space is utilized in all movement situations and is important in the successful performance of the three fundamental motor skills used in this study.

2. The three fundamental motor skills are appropriate tasks for first grade boys and girls having their basis early in life.

3. Tanner's movement satisfaction test is an accurate measure of expressed movement satisfaction for first grade children. The test is designed to elicit discriminating answers on a five-point scale.

Limitations

1. Espenschade indicates there is evidence to show that a positive relationship exists between body size and level of performance.7 The body size of the children was not measured in this study; therefore, some performance scores may be influenced by the body size of the child.

2. All children do not mature at the same rate; therefore, there may be different levels of maturation in the two classes selected.

3. There is evidence to indicate that success (greater distance jumped) in the standing long jump is related to leg strength. Jumping has been considered a predictor of body strength, with boys tending to have greater leg strength.8 Strength of the legs was not measured in this study.

7Ibid. p. 148
8Ibid. pp. 134, 139, 159
4. "It is quite obvious that boys tend to be greatly superior to girls in the distance throw at all age levels and that this difference becomes increasingly great with increases in age." This may be due to greater forearm length and girth resulting in more leverage. Sweeney found that boys scored higher than girls at all age levels in the elementary school in the overhand throw task. This higher scoring of the boys may be reflected in the performance scores for the boys in the tennis ball throw for distance.

5. Sweeney found that boys scored higher than the girls in the soccerball kick for accuracy.

6. Two classrooms from one school were used. All the children were used. There was no attempt to account for differences in months between the age of the children.

7. Not all of these children had physical education in kindergarten. Therefore, previous experience in the use of the three fundamental skills may influence the performance scores.

8. Children knew they were being used in a study.

9. Each child was seen only on one day, so it is impossible to know if performance from day to day is consistent.

10. The height of the ceiling in the testing room may have affected the results of the overhand throw.

9Ibid. pp. 134,135,162


11Ibid.
11. Photography was done at different times during different days; however, no testing was done just prior to or just after physical education periods because it was felt that a positive or negative experience in physical education class would influence the response of the children.

12. Movement in the film is seen from only one place. (anterio-posterior movement from a lateral view).

13. No photography was done or performance scores taken during the trial periods so no record of these practices exists.

The above factors may at times have an influence on the performance scores, space scores, and the Movement Satisfaction score.

The children selected for the study comprised two complete classrooms in one school.
Definition of Terms

Fundamental Motor Skills - these skills are performed with a goal in view. Included are locomotor, non-locomotor and manipulative movements and combinations of these. These skills form the basis of more advanced sport skills such as the running long jump, throwing in baseball, and guarding in basketball.

Movement Patterns - series of movements organized in a time-space pattern. These movements range from the very simple to the very complex. These patterns occur in space and can be partially described by this space pattern. Examples: run and jump, batting a softball, kick a ball, etc.

Form - the method or way of accomplishing the goal of a motor task. Form is involved in all movement patterns utilizing fundamental motor skills. Because the form is the way to the task, hopefully it will allow the performer to accomplish the task with the best resulting performance. The form used in the performance of movement patterns may reflect the developmental stage of the young child.

Movement Satisfaction Scale - a test to elicit a response to questions about the child's own liking or satisfaction with his movement. The amount of liking or satisfaction can be expressed on a five-point scale ranging from very sad to very happy.

Space Utilization - The amount of space used by a body part in the performance of a movement. In this particular study the body was viewed from the side and the anterioposterior space was analyzed for body parts during the performance of fundamental motor skills in a vertical and horizontal direction.
CHAPTER I

REVIEW OF RELATED LITERATURE

Motion has been identified as a fundamental dimension of human behavior and is visible everywhere. It is through and by movement that man explores the environment around him and indeed begins to manipulate and control it. This manipulation and control is essential in play and sport. Movement is constant in man's existence appearing in ceremonies and rituals, at work and play, and in communication such as dance and mime.

Movement in itself is a language in which man's highest and most fundamental inspirations are expressed. We have forgotten not only how to speak this language but also how to listen to it. Movement fills our whole working time, no matter in what kind of work we are engaged.12

Laban13 is one author who describes movement and space. Movement implies the moving of the total body or parts of the body from one point in space to another. One can identify and partially explain movement as a result of these spatial changes. Wherever the body stands or moves it is surrounded by space of two kinds; personal space which immediately surrounds the body and can be covered by extending the body or body parts without moving the base of support and general space which can be reached by locomotion. Personal space follows the individual in his movement. Thus, one aspect of any

12Rudolf Laban and F.C. Lawrence, Effort. (London: MacDonald & Evans, Ltd., 1947) p.65

13Rudolf Laban, Modern Educational Dance (London: MacDonald & Evans, Ltd., 1963) p.85
movement pattern is the path in space covered by the total body or parts of the body. Other aspects of movement are weight, time, and flow of the movement.

CHILDREN AND MOVEMENT

Children may utilize movement pathways in their environment to find the new and different, to control what they have already discovered and used and to enjoy the sensation. Because of this, their understanding of self and control over the environment is expanded. These movement patterns form the basis for the development of future sport skills. Performances of movement patterns such as running, throwing, kicking and jumping develop in the early years mainly as a result of maturation. However, this maturation process may be influenced by the amount of freedom allowed the child to experiment, experience, and utilize movement.

A general assumption of many educators and parents is that in due time normal children will use all or most of the fundamental movement patterns of which they are capable. While it is true that normal children eventually do develop a rudimentary form of fundamental movement patterns, many do not experience the use of these patterns at varying speeds, levels, or tensions, or under varying circumstances. Many do not experiment on their own with new combinations of fundamental activities. And, most important, many do not attain a mature form of these skills even by the age of eight or nine. In fact, many adults never achieve the mature form of fundamental skills, remaining at a very primitive stage of motor development.

Because of a lack of varied experiences in the use of the fundamental patterns of movement, the learning of future sport patterns may be inhibited which may affect the visible movement patterns utilized in their performances.

14Lolas E. Halverson, "Development of Motor Patterns in Young Children," Quest. (May, 1966) p. 45
DEVELOPMENT PATTERNS OF MOVEMENT

Gesell points out that each new pattern of movement grows out of the old and yet it retains a connection with the old. At about 15 months there are short bursts of locomotion and crude throwing actions known as casting. Out of these crude patterns emerge the basic locomotor skills and the manipulative skills of throwing and kicking. None of these patterns are refined but are only crude forms of the patterns that will eventually grow with maturity and practice. As the skill increases in complexity of form, experience in using and repeating the skill becomes increasingly important.

When these basic patterns of movement are utilized by the child with some specific goal in mind they can be called a minimal skill. Thus, when the child used a jump to carry him a specific distance away from a point of reference, he is utilizing a form of the skill of the standing broad jump. This goal oriented behavior becomes more important as the sport skills utilized in this particular society become meaningful and relevant to the child. With much practice and perhaps help from parents, teacher, coach and others, the mature form of the skill emerges and later the specific qualities are added which develop into the sport skill forms. These early movement patterns are essential for the skill performance of the six year old child used in this study.

LATER CHILDHOOD

Between the ages of 6 and 12 years (later childhood) the child's body is maturing and growing stronger with improved motor functioning.

and coordination. Growth is slow and constant; however, growth patterns do not occur at the same rate for each child. There is a difference between biological age and chronological age which is significant and individual in terms of motor development for the young child. Therefore, standards of performance vary widely. Nevertheless, typical patterns of movement can be identified within this age range. Wickstrom, Espenschade, Godfrey and Kephart and others\textsuperscript{16} have tried to identify the patterns of movement specific to the young elementary school child. These patterns can only be viewed as trends typical of many children of this age.

During this age range (from 6-12 years) the child exploits movement patterns to suit his needs - to expand his environment or to communicate. Little thought, if any, is given to the physiological or psychological needs for moving. Action occurs if the need arises but the needs are not necessarily understood. During these years the child needs to have the freedom to explore and practice and vary movement sequences thoroughly to be able at a later age to select those sequences that are appropriate to the chosen task.

THE SIX YEAR OLD

Gesell\textsuperscript{17} relates that the 6 year old child is very active; indeed at times in almost constant motion. These bursts of activity are short and frequently followed by periods of rest. Activity for this child is sometimes clumsy and often he may fall down because of


\textsuperscript{17}Gesell, \textit{The Child}. 
going beyond his capacity to coordinate the patterns. He enjoys active games and singing or skipping to music. He often wrestles, tumbles, and crawls. Ball skills of throwing, catching, striking and kicking are beginning to emerge. He enjoys challenging his own skill. He has experimented with jumping and throwing skills, and kicking objects. For most children in this age group these skills are not the mature form. However, this is the period during which fundamental motor skills emerge and can be varied as the need arises. These fundamental motor patterns are essentially built on a few learning experiences which occur very early in life.

The simple integration of movements into useful patterns may continually progress. Each succeeding skill is made up of, and built on the base of such simple skills as the individual already possesses, providing they can be used appropriately. Lawther points out that some highly skilled sport actions depend a great deal on controlling voluntarily actions which were essentially not controlled previously. The elementary school years find the utilization of old patterns and the perfection and stabilization of these old patterns rather than the emergence of new skills.

Cratty says:

Movement behavior in childhood (ages 5-10) becomes stable as growth decelerates. More exact movement patterns become possible and the child from 5-10 seems to enjoy the acquisition of skill for its own sake and to experience joy in movement much as a young animal.


The child improves in skill by imitation, trial and error and with the freedom to explore, exploit, and repeat the movement or movement sequences. Such skills are responses to the stimuli which the child recognizes. "What we need to know is that new movements may be learned and/or individuated from what was previously a gross action response." Thus, the gross actions of the young child form the foundation for future movement patterns and future sport forms. These patterns may develop as a result of the maturational level of the child and/or with the background movement experiences which the child has been allowed to experience.

INDIVIDUALITY OF MOVEMENT EXPRESSION

Ahrens has identified movement as being a characteristic, expressive and identifiable aspect of one's personality. It can be expected that all children will not necessarily perform any one skill in an identical way. "Long before birth the future infant is already stamped with individuality." "Just as an individual differs in the nature and extent of his abilities, the manner in which he executes various motor patterns will probably be dissimilar to another's style."

20Lawther, The Learning of Physical Skills, p.7


22Gesell, The Child, p. 10

This motor pattern dissimilarity may be the result of:

1. skill ability or development of the child
2. personality
3. age
4. maturation level
5. physical characteristics (height, weight, strength, body build, etc.)
6. nature of the activity
7. background experiences
8. nature of the activity

Form uniqueness becomes more observable when the act becomes more detailed, when there are a series of events that constitute a skill, or when gross motor movements are involved in the act.24

In addition to the above factors which affect form in movement sequences, culture can affect the kinds of movement patterns an individual selects as well as the way they are performed. The child learns from others what the correct movement behavior pattern is for each situation.

There are reports in the literature of the consistencies with which individuals use their bodies in space in various tasks. Some variables which are reported to be consistent are:

1. task persistence
2. personal rhythm
3. preferred speed
4. spatial preference

24 Ibid, p.117
Certainly more work needs to be done in this area of consistency in the mode of moving within an individual.

As soon as we record a pattern of physical movement we have an expression of individual choice in the manner of carrying out the activity.\textsuperscript{25}

Cratty even goes further in this line of thinking to point out that: "Most performances in athletic skills represent a compromise between the maximum effort an individual can manifest versus what he prefers to do."\textsuperscript{26} He further suggests that recent evidence from several sources shows there is a given amount of space through which individuals prefer to move their bodies in relatively unstructured situations. However, consistencies in individual differences as the individual uses space in movement tasks has not been subjected to very much experimental investigation.

In summary, the individuality of movement expression may affect the way a child carries out a movement task. This preference of the individual may affect the result of the movement task.

\textbf{UTILIZATION OF SPACE IN MOVEMENT TASKS}

Because all moving is accomplished in space one can partially identify and attempt to explain movement from the spatial changes which occur in the pattern. Barsch\textsuperscript{27} has identified the terrain of movement as being space; the personal space being that which surrounds the individual and which he can extend into without moving his base of

\textsuperscript{25}Warren Lamb, \textit{Posture and Gesture} (London: Gerald Duckworth & Co., Ltd., 1965) P.10

\textsuperscript{26}Cratty, \textit{Movement Behavior}, p.197

\textsuperscript{27}Ray H. Barsch, \textit{Achieving Perceptual-Motor Efficiency}. (Seattle: Special Child Publications, 1967)
support; general space that which is reached by locomotion. Space
has been identified as an abstraction that is derived from the rel-
ative intervals between and among objects requiring always a referent
and a terminal point.

Spatially coordinated behavior is construed as the development
and maintenance of a repertoire of response patterns which
are moulded and conditioned by the spatial characteristics
of the body and of the physical world in such a way that objec-
tives may be rapidly and accurately achieved.28

Thus, the way the body moves through space in the accomplishment of
a task can be viewed as one measure of the effectiveness of the move-
ment in its spatial pattern. This space usage in performance of
movement tasks has several identifying parts when the performance
is goal oriented toward effective utilization.

1. use of directness in movement with the elimination of
   excess motion which does not contribute to the success
   of the movement task.

2. greater range of movement utilizing the total body over
   a larger period of time when necessary.

The effective utilization of space may be influenced by:

1. culture

2. personal preference for movement

3. maturation level of the performer

4. background experiences in movement tasks

5. the body build of the performer

6. the ability of the performer to coordinate his body in
   a movement task

There are a few reports of the consistency in individual utilization
of space from task to task.29 Ahrens found there was a general

28 I. P. Howard and W. B. Templeton, Human Spatial Orientation.

29 Ahrens, "Spatial Dimensions"
significant increase in the space used by the subjects in her study when successive trials were compared. Thus this study is designed so that three trials plus a practice effort may be used by the individual to accomplish the best effort to the movement task.

Any skilled movement is led along a definite path in space. Deviations from this path hinder efficiency and make the effort to a greater or lesser degree inappropriate to the task.\textsuperscript{30}

Barsch\textsuperscript{31} has identified movement efficiency as being made up of the following four items:

1. muscular strength - basic - every movement influences the whole system - produce force - resist

2. dynamic balance - state of stability

3. body awareness - "who am I"

4. spatial awareness - develop within self a reference system of up-down, left-right, and front-back.

In addition, the mover utilizes four space zones in the accomplishment of the task:

1. near space zone - boundary 2 feet from corporate midline - area of manipulation

2. mid space zone - 2-16 feet requires locomotion or projection (essential for the standing broad jump)

3. far space zone 17-30 feet requires security and freedom - zone of extension (essential for the ball kick)

4. remote space zone - 30 feet to infinity (essential for the ball throw)

In order for the performer to be successful in accomplishing the goal of the movement task, the child needed to use all four of the above space zones.

\textsuperscript{30}Laban, \textit{Effort}, p.10

\textsuperscript{31}Barsch, \textit{Achieving Perceptual-Motor Efficiency}
By the time a child enters school, he has developed a characteristic movement behavior or pattern of movement. A 'movement pattern' comprises a manner of moving the characteristic quality of movement, as well as the specific skill used and its combination and variations.\(^\text{32}\)

This movement pattern can be partially explained by its spatial qualities. These qualities may involve such things as using space directly or indirectly or using a wide range of motion in the movement pattern thus covering more space. These qualities can be measured by photography which results in a permanent image of the movement.

It is possible to identify certain movement patterns which are characteristic of children at certain ages and to compare these movement patterns with the numerical scores of the goal oriented responses. These movement patterns are affected by the maturation of the child. For this study it was important to find patterns of movement that all children could perform. Thus, a general pattern of movement for all three skills selected for this study could be studied.

The effectiveness of the three fundamental skills selected for this study can be measured by the amount of space utilized in the task and by a number indicative of the goal achieved. "The displayed form may not be aesthetic, but effectiveness of the movement can be measured by the results."\(^\text{33}\) Thus, the effectiveness

\(^{32}\)Lorena Porter, "Movement Patterns in the Young Child," *Theory Into Practice* (Vol. III, No. 3, June, 1964) p.87

\(^{33}\)Singer, *Motor Learning*, p.118
of the skill can be determined by looking at the pathway in space the movement pattern takes, and by measuring the end result.

In a project sponsored by the American Association for Health Physical Education and Recreation (AAHPER), a panel of judges noticed that the children in the study tended to move only that part of the body primarily responsible for the execution of the skill. In locomotor movement the children moved primarily with the feet and in manipulative skills, with the part of the body giving impetus to the object. It seems clear that a variety of movement patterns varying in space usage and performance results may emerge during the performance of movement tasks selected for this study.

MOVEMENT TASKS

Jumping

Jumping is a way of projecting the body off the ground using one or two feet and landing usually on two feet. Wickstrom shows the developmental jumping progression of the very young child.

1. Jump down one foot to the other
2. Jump up from two feet to land on two feet
3. Jump down from two feet and land on two feet
4. Run and jump one foot to the other
5. Jump forward two feet to land on two feet (standing broad jump)
6. Run and jump one foot to land on two feet
7. Jump over an object two feet to land on two feet
8. Hop from one foot to same foot (balance on landing)

Naomi Allenbaugh and Heidie C. Mitchell, "Skill Progressions, K-4" (Mimeographed Material, Kent State University, 1970.)

Wickstrom, Fundamental
Young children participate in jumping activities at a very young age and later use these patterns of movement in jumping ropes, playing hop scotch, basketball, track and field, and other activities. The jumping ability of the school age child has been frequently measured by the standing broad jump which is a jump for distance forward using a two-footed takeoff with parallel feet to a landing on 2 feet. There has been a change in terms used, however. The term long jump is currently in favor in track and field replacing the former term standing broad jump. In this study the activity will be referred to as broad jump because most sources will use this phrase.

By the time the child has developed the ability to run he has also acquired the physical abilities necessary to perform the jump. When the child propels himself forward and upward into flight with one foot and lands on the other while running, technically he has satisfied the basic requirement of a successful jump. However, jumping ordinarily is associated with more vigorous and extensive non-support movements and should be regarded as a more difficult skill. The child needs more than just enough strength to thrust his body into the air if he is to be prepared adequately for a successful assault on the awaiting array of jumping skills.36

Gesell37 reports that the three year old child stands on one foot momentarily, gallops, jumps, walks, runs and jumps on two feet. It would appear that the vertical jump and the standing broad jump rise from a common base.

The vertical jump and the standing broad jump seem to rise from a common origin. Both first appear as a vertical jump from two feet with a slightly forward take-off angle.38

Reports of form in the early years of the standing broad jump describe it more as a bipedal hop than a forward jump with the goal being

36Wickstrom, Fundamental Motor Patterns, p.45
37Gesell, The Child
38Wickstrom, Fundamental Motor Patterns, pp.55-56
distance forward. The child is, however, utilizing a take-off and landing even during these years.

The various jumping skills are utilized by children at the various pre-school ages with increasing difficulty and better performances during each successive year. This improvement is not necessarily to best someone but to prove his own growing prowess. However, the individual child has a tendency to remain in the same relationship to his peer group year after year during the early years and the elementary school years.

For the five and six year old child the standing broad jump would seem to be a very appropriate task. He has been experimenting, experiencing, and practicing various jumping skills for at least three years. He has come through various maturation levels and is able to function effectively with the standing broad jump; i.e., jumping forward for distance starting from two parallel feet in the take-off and landing on two feet.

One might expect to find few significant differences in the ability of performance between six year old boys and girls in the standing broad jump. Keogh, in a study cited by Wickstrom\(^3^9\), summarized in 1955 the results of eleven studies done over a 35 year period. He found there was a consistent linear improvement at successive age levels but no important differences in performance until about eight when the boys showed stronger performances. Espenshade\(^4^0\) sights a study done by Clayton in 1936 which showed

\(^3^9\) Wickstrom, Fundamental, p. 48

\(^4^0\) Espenshade, Motor Development
performances in jumping were found to improve with advancing age, the
degree of improvement being greater for boys than girls. There was
a great deal of age overlapping. Sweeney\textsuperscript{41} found neither instruction
nor practice projected significant changes in performances scores.

Studies have been done to determine the effective and efficient
skill pattern for the standing broad jump.

Skilled performers employ a greater range of movement in their
performances with a greater amount of hip and knee flexion
as legs are drawn under the body--greater amounts of hip,
 knee and ankle extension during the propulsive phase of the
jump.\textsuperscript{42}

In addition, the boys seemed to show greater thigh flexion at an
erlier age.

Characteristic likeness appeared in the general patterns of
movement of limbs and in proportion of time consumed by the
phases of the movement. Characteristic differences were found
in angles of take-off and of landing and in extend and duration
of specific joint actions. Greater extent of movement occurred
in the skilled performances.\textsuperscript{43}

The skilled performers spent more time in hip flexion and less time in
knee extension.

The three phases of the standing broad jump are:

1. application of force for take-off
   (feet in contact with ground just before flight)

2. flight - upward and forward

3. landing

\textsuperscript{41}Sweeney, "The Effects of Instruction."

\textsuperscript{42}Espenschade, \textit{Motor Development}, p.161

\textsuperscript{43}Helen M. Zimmerman, "Characteristic Likenesses and Differences Between Skilled and Non-Skilled Performance of Standing Broad Jump". \textit{Research Quarterly.} (27: 352-62, 1956) p.352
In summary Zimmermann's study showed the following:

1. Characteristic Likenesses: general patterns of movement in the jumps were alike for the two groups.

2. Characteristic Differences: knee extension of skilled occurred during shorter percentage of phase. The skilled group used greater amounts of ankle and hip and knee, knee and ankle extension just prior to take-off.

Wickstrom\textsuperscript{44} summarizes the analyses of broad jumping in this way:

1. Initial crouching - increases distance over which to apply force. This is only necessary for maximum force.

2. Arms should be swung in the direction of the jump.

3. Forward lean of the body carries the legs beyond the base of support. Gravity aids the forward direction of the body when distance is desired.

4. The arms come down on landing.

5. Two feet take-off is a part of the skill pattern and allows for greater force in the take off.

6. A 45-degree angle of take-off is important for gaining distance in the jump.

In addition, the extension at take-off should be followed by flexion of the legs during flight.

Halverson (1958) found that the inclination of the leg at take-off and at landing distinguished the good jumpers among a group of kindergarten children. The good performers had a more horizontal take-off angle and they had a more horizontal thigh position at landing. Range and speed of movement at the hip and the knee joints were also identified as distinguishing factors between the skill groups in her study.\textsuperscript{45}

This angle permits the child to cover more space during the flight phase.

\textsuperscript{44}Wickstrom, \textit{Fundamental Motor Patterns}, p. 49

\textsuperscript{45}Halverson, "Development of Motor Patterns", p. 47
Halverson also reported that goal setting for kindergargen children in the standing broad jump projected a more effective stimulus for eliciting a mature pattern of jumping than did demonstration or verbal cues.

Kicking.

Kicking is a unique form of striking a ball with the feet to give impetus to the ball. Similarities exist between kicking and striking patterns.

At 18 months the child "walks into" the ball rather than kicking it. From this period to the elementary school years, the child is experimenting with kicking a ball or other object. Early in the life of the child the kick is just a nudging of the ball preceded by somewhat of a backswing of the kicking leg. Later there is motion into the ball with the planting of the support leg becoming extremely important.

Kicking tests have long been used in the elementary physical education activity program as a measure of proficiency in certain fundamental skills. At this age, the ball is kicked from a stationary spot on the ground. Later the child is able to coordinate the kicking of a rolling ball while he is either stationary or moving. Gesell\textsuperscript{46} indicates that children are ready to kick shortly after they can run.

The basic kicking motion is acquired relatively early but the child has difficulty using it successfully in childhood games. When kicking a stationary ball, he is troubled by effective placement of his support feet and when punting he has difficulty controlling the drop of the ball. Both of these problems detract from the effectiveness of the basic kicking pattern.\textsuperscript{47}

\textsuperscript{46}Gesell, The Child

\textsuperscript{47}Wickstrom, Fundamental Motor Patterns, p.140.
Sweeney\textsuperscript{48} writes that instruction and practice do not significantly increase the performance over practice only when using the soccer ball kick for accuracy as an evaluation tool. In addition, Sweeney found the girls scored lower in kicking tests than the boys at all age levels in the elementary school. Seils\textsuperscript{49} suggests that the kicking of a stationary soccer ball is a reliable test; however, kicking a rolled ball proved too variable.

\textbf{Analysis of Kicking:}

In kicking any kind of ball, the movement of the knee joint should be added when the hip movement is at its fastest; the lower leg will therefore pick up movement of the upper leg plus that caused by the knee action, and it will move faster than the thigh.\textsuperscript{50}

A brief summary from Wickstrom\textsuperscript{51} will help with the basic movements for effective kicking:

1. A step forward to the support leg permits rotation of the pelvis and extension of kicking leg thigh.

2. A forward swing of the kicking leg with simultaneous flexion at the hip and knee joints.

3. Vigorous extension of knee of kicking leg when contact with ball is made.

4. Use of opposition in arm pattern for better balance.

5. Contacting object slightly below center.

\textsuperscript{48}Sweeney, "The Effects of Instruction."

\textsuperscript{49}Leroy G. Seils, "The Relationship Between Measures of Physical Growth and Gross Motor Performance of Primary Grade School Children." Research Quarterly. (Vol. 22, No. 2, May, 1951)


\textsuperscript{51}Wickstrom, \textit{Fundamental Motor Patterns}, p.128-9.
Dohrmann\textsuperscript{52} found that eight-year-old boys were superior in kicking ability when compared to girls of the same age. There is little evidence to support the idea that there is significant difference between boys and girls at earlier ages.

**Throwing**

There are three basic throwing patterns - underhand, sidearm, and overhand. The overhand pattern is the most effective for speed and distance when using a small ball such as a tennis ball or a softball. Wickstrom\textsuperscript{53} defined the overhand throwing pattern as a unilateral overarm motion in which the elbow swings ahead of the forearm and the forearm extends prior to release. Gesell\textsuperscript{54} reports that at 15 months children have a well-defined casting pattern while sitting on a chair. At 18 months this pattern will occur while the child is standing. This crude casting pattern is the beginning of a pattern of movement that is the basis of the overhand throwing pattern. At four years there is a definite stance for throwing but no use of opposition in the foot pattern and very little body rotation occur. At five years the opposition of foot to throwing arm begins to appear. There is a general trend of improvement in the ability to throw from these early beginnings through the childhood years. There seems to be an increase in the amount of distance thrown each year with the boys generally throwing consistently farther each year in relation to the girls.

\textsuperscript{52}Dohrmann, Paul, "Throwing and Kicking Ability of 8-Year-Old Boys and Girls," Research Quarterly. (35: 464-71, December, 1964)

\textsuperscript{53}Wickstrom, Fundamental, p.71

\textsuperscript{54}Gesell, The Child.
Throwing is one of several skills that seem to have common elements in a general overarm pattern. If the child becomes entrenched in a particular developmental stage in throwing, his subsequent development of other overarm patterns might be adversely affected. An illustration of this point is the persistence of a pushing motion in the throwing and striking patterns of many adults which can be related directly to certain aspects of immature throwing patterns.55

In a study done by Wild56 in 1938, there appears to be some evidence to indicate that boys tend to be superior in the ball throw at any age level because of their greater forearm length and girth which affords them more leverage. Gesell57 notes that boys throw farther and more accurately than girls. They appear more masculine in their style of throwing. Dohrman found that, "In throwing and kicking ability 8-year-old boys were found to be superior to 8-year-old girls."58 Sweeney59 shows that progressive educability can occur with instruction and practice with all elementary age groups. The instructed group progressed more than the group with no instruction. This was especially true at the upper elementary levels. The boys scored higher at all grade levels.

55Wickstrom, Fundamental Motor Patterns, p.81

56Monica R. Wild, "The Behavior Pattern of Throwing and Some Observations Concerning its Course of Development in Children." Research Quarterly. (9 (3) 20-24, 1938)

57Gesell, The Child, p.227

58Dohrman, "Throwing and Kicking". p.470

59Sweeney, "The Effects of Instruction"
Wild had observed that the cue, 'throw the ball as hard as you can way over to me' was sufficient to elicit a hard overarm throw pattern from preschool children as early as two years of age. In the current longitudinal study, a simple demonstration of the throw elicited a beginning, but far from mature, throw from each of the three year old children. Then the investigators added a distance goal of twenty feet coupled with a cue of 'Can you throw the ball hard?' All of the children observed increased their range of movement and speed of action, moving them closer to the mature stage of the throw. In general, without the distance goal, and a stress on throwing hard (fast), the response involved only the arm pattern.60

A panel of judges assembled by the American Association for Health Physical Education and Recreation in a study of fundamental skills used by children noted that many children in the study tended to move the throwing arm in the overhand throwing pattern with little use of hand and feet opposition, trunk rotation, or movement of the whole body in the direction of the force.61

Evelyn Schurr 62 briefly summarizes the overhand throwing pattern:

1. back swing
2. proper stance - width of base
3. body rotation
4. shifting of body weight forward to opposite foot. In a good throwing pattern the child's foot opposite the throwing arm is forward at the time of release. It usually comes forward slightly ahead of the arm.63

60 Halverson, "Development", p.47
61 Allenbaugh. "Skill Progressions"
Stepping forward with the leg on the same side of the body as the throwing arm is a part of an immature throwing position.  

5. follow through

6. run and hop, or walk prior to throw for additional momentum

Wild found in a study of poorly skilled college girls, the throwing stage was generally characteristic of the four or five year old child. There was no opposition of feet to throwing arm, little trunk rotation, arm action superimposed on a stiff trunk action. A very ineffective throwing pattern is the result.

A summary of throwing patterns indicative of age groups has been taken from Wickstrom:

**Pattern 1** primal pattern (age 2-3)

1. Primarily arm movement in front to back plane (anterior-posterior)

2. Forward and downward swing of arm with rapid extension of forearm

3. Feet together (feet don't move during the throw and there is no body rotation)

**Pattern 2** (age 3½ to 5)

1. Rotary movement in horizontal plane

2. Armswing forward in flat plane

3. Trunk Rotation

4. Feet together but don't move during the throw

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64 Wickstrom, **Fundamental Motor Patterns**. p.11

65 Wild, "The Behavior Pattern"

66 Wickstrom, **Fundamental Motor Patterns**. pp.75-83
Pattern 3 (age 5-6)

1. Addition of forward step during throw on same side of body

2. Feet together and they remain stationary while trunk rotates to right

3. Arm is swung sideward, upward and backward to a position with the forearm flexed.

4. Forward step with the right foot initiates the throwing motion (same foot as throwing arm)

Pattern 4: (mature or skilled from common among boys 6½ years and older)

1. Weight shifts to right foot as trunk rotates right and right arm is swung backwards and upward

2. Forward step to opposite foot followed by rotation of hips and trunk

3. Elbow swings horizontally forward first and is followed by an extension of the forearm with a snap of the wrist

4. Follow through

Meaning of Activity

... sports and dance are meaningful to man in the same way that all man-made forms of behavior are meaningful.67

Why a child likes some ways of moving and dislikes others or associates other feelings about moving may not be known; however, it certainly is now the same for all children. How meaning develops or becomes significant is difficult to ascertain.

67 Eleanor Metheny, Connotations of Movement in Sport and Dance (Dubuque, Iowa: Wm. C. Brown Company Publishers, 1965) p.21
The search for the meaning and significance of human events, of one type or another, has a long history, but there is relatively little in psychiatric and other writings on motivations in play, games and sports. Of course, something tremendous is not at stake in every human action, but there is some meaning in the great part of human action, and every action like every object can be viewed from various perspectives.68

People participate in physical activity for their own reasons. Thus the same activity can have different meanings for different people. Perhaps this is why activity is popular.

MOVEMENT SATISFACTION MEASUREMENT

Tanner69 has developed a movement satisfaction scale for first and second grade children designed to get a written expression of a liking or dislike for the concept of moving. This movement concept may be one component of self actualization as described by Maslow and others. Previously a movement cathexis scale was developed for 15-21 year old students. But this was inappropriate for young children. Tanner developed the movement satisfaction scale which gives a score based on the responses by the child to the five-point "Snoopy Scale".

The score received on the movement satisfaction scale is a measure of the degree of satisfaction or liking expressed by the child for his movement. The test had a reliability score of .875 when used initially for Tanner's dissertation.

The 30 test items have been designed for first and second grade children with answers coming on a 5 point "Snoopy Scale".


69 Tanner, "The Relationship"
(The scale can be found in Appendix A) A very unhappy answer rates 1 while a very happy answer rates 5. Some definitions taken from Tanner might be helpful:

- **Cathexis** - measure aspects of individual's image of himself. It is an attempt to determine how the individual perceived himself.

- **Body Image** - a term which refers to the body as a psychological experience and focuses on the individual's feelings and attitudes toward his body.

- **Movement Concept** - the individual cognitive, conative and affective attitudes towards movement and his movement ability.

- **Self Actualization** - the individual's maximum fulfillment of his potentialities. It is the process of becoming a fully functioning individual.

**MEASURING MOVEMENT PATTERNS**

The analysis of effective and/or efficient movement patterns has been the concern of many professions through the years. Human movement patterns have been studied by psychologists, physiologists, anthropologists, social scientists, educationalists, industrialists and dancers. Efficient movement patterns are identified as skill patterns.

In constructing a movement model Barsch in his book *Achieving Perceptual-Motor Efficiency* identified movement efficiency as a basic principle underlying the design of the human organism. The human body is built to move efficiently but this efficiency may not automatically appear.

70 Tanner, Ibid.
Any inappropriate use of movement is just a waste of effort. The only advantage is that the intelligent person using for a time the inappropriate movement will, in time, learn by trial and error more or less accurately the movements appropriate to the job.71

The lack of the sense of the right proportion of weight, space, time and control of flow is the way to ineffective movement patterns.

With the coming of the "industrial revolution" there was increased interest on the part of some individuals to do research into movement patterns which would be required to fit the new needs of industry. With the new patterns of movement came a desire for increased efficiency for the purpose of better production as well as a concern for the well-being of the worker. This new industrial movement efficiency cause brought two names to the front. Frederick W. Taylor has been given credit for the initiation of the so-called "scientific management" programs. The husband and wife team of Frank and Lillian Gilbreth wrote extensively concerning the elimination of waste.

Our duty is to study the motions and to reduce them as rapidly as possible to standard sets of lease in number, least in fatigue, yet most effective in motion.72

Dr. Lillian Gilbreth has carried this idea into the field of home economics using the theme of efficient movement in the home management tasks facing every homemaker. For this analysis she used film to record the movement and for later study. Frank Gilbreth has identified effective motion as that which will produce the desired effect.

The determination of the path which will result in the greatest economy of motion and the greatest increase of output is a subject for the closest investigation and the most scientific determination.73

71 Laban, Effort. p. 37

72 Frank B. Gilbreth and L.M. Gilbreth, Motion Study (New York: D. Van Nostrand Company, 1911) p.2

73 Ibid, p.82
Some of the techniques used by the Gilbreths in the study of motion are still being used today. The stop watch was used to time motion; observations were made of "first class" workers. Flow charts of movement were developed for use in the industrial setting. Films were made of the workers and the placement of materials. Micromotion studies were done of even the smallest movements of the fingers and the chronocyclograph method was used to study movement. This method involved putting tiny lights on different body parts and filming the pathway of these parts. This was a way of tracing the motion of different body parts as they pursued their motion in space.

Rudolf Laban set up centers in Europe for artisans to come and seek advice on their working problems and on the strains and stresses common to their occupation. He later evolved an effort graph as a way of recording the kinetic quality of performance. It recorded exertion dealing with weight, exertion dealing with space, exertion dealing with time and the control of the flow of the movement.

Any handling of things and the bodily functions engaged in it, is an art demanding not only knowledge but also skill. The rules of skill, which are in essence applied science, have been most clearly developed in recreational activities such as sports, games, gymnastics, the dance, music and the theatrical arts.74

Laban hoped to apply this movement science to other areas of movement.

Efficiency of movement of the human body has been a concern of physical educators for a number of years. This concern is far reaching - extending into all of the various movement tasks of the individual's day.

74Laban, Effort, p.3
However, special emphasis has been put in efficient movement as it relates to the accomplishment of some sport or play task seeking better performances for each individual. The task of the physical educator has been summed up by Marion Broer with the following statement:

With this variety of human tasks, the problem is to determine how, in a relatively short period of time, each individual can gain skill - not only in a few isolated motor activities (most of which are recreational), but also efficiency in movement in general. 75

From these early beginnings of movement analzyation photography has played a role. Geometric Chronophotography was described and used by Marey in 1883.

Marey, who took his pictures in full sunlight, dressed his subjects in a hooded black velvet suit on which a pattern has been marked in white tape or polished metal. As the subject moved, his image was interrupted at regular intervals by a sectored disk or "Marey Wheel" revolving in front of the camera, who shutter was left open throughout the movement. 76

In their attempts to analyze motion, Frank Jones and John Hanson at Tufts University used color coding of stroboscopic multiple-image photographs. In studying the time it took subjects to stand up from a sitting position they found that the subjects who used a simpler more direct path reached the goal in a shorter time. These subjects were the same ones previously classified by the physical education department as being "well skilled". This study is another indication that movement is fundamental to living - the individual who used the most effective way of moving in one aspect of his life may utilize similar effective movement patterns in other aspects of life. Perhaps,

75 Marion R. Broer, Efficiency of Human Movement (Philadelphia: W.B. Saunders Company, 1966) p.4

the same child who utilizes effective patterns of movement will be the one who produces consistently better results in performance.

Consideration was given for the previously described type of photography to be used in this study. However, it was thought that the flashing of the strobe would be disturbing to small children as they performed movement tasks.

Stroboscopic pictures have been made famous by Edgerton and Killian in their work with golf swings and other skills. The stroboscopic picture is a composite picture of the whole body in action. It records several instantaneous pictures of body positions on one negative of a still camera with an open shutter for the duration of the movement. The number of images is controlled by the frequency of the setting of the flashing light. There are no wires attached; however, a dark room is required. One of the problems is the overlapping of images when the body remains in one place. The motion picture camera is very useful in obtaining movement data. Indoor photography requires a flood light or lights and there must be a frame by frame analysis.

Spinning a disc on an electric motor in front of a camera with an open shutter results in a multiple image photograph. The effect of the spinning disc creates an exterior shutter. The result is a picture of time-space utilization in one plane of movement (looking at anterioposterior movement of the subject from a lateral view) and a picture of the pattern of movement. Color film can be used. The color pattern of the movement sequences appear on the film because the child is marked with colored tape and dressed in dark blue or black. There are no flashes to disturb the child during performance.

Available light in the room can eliminate the need for much of the flood lights.

Summary

Because motion is fundamental to the behavior of children, three fundamental skills, appropriate tasks for first graders, were chosen as skills to be filmed and analyzed as to amount of space used by the child. The distance or score achieved by the child was recorded in addition to the score achieved on the movement satisfaction test.

Physical activities in play and sport situations are engaged in frequently by young children. During the performance of these activities the child utilizes movement patterns which have their basis early in life. These skills are utilized and altered to meet the needs of the situation. When the needs of the situation demand distance or accuracy the child has an exterior objective in the performance and creates the need for more effective movement.

These movement patterns utilize space as they are performed. The space pathway gives the clue to the effectiveness of the pattern of movement. The directness of the movement and the range of the movement may have a direct relation to the effective utilization of the movement pattern to meet the need of the situation. Effective use of the pattern relates to the success in the actual movement result. A skill performed with the elimination of excess motion allows the performer to put the most into what he is trying to do; perhaps resulting in:

(1) better performance measures

(2) less fatigue allowing the performer to perform longer
The question comes then, does the child who gets better results in movement patterns utilize greater amounts of space as he performs, and does he gain more satisfaction in the movement situation. As the child performs he attaches meaning to what is happening. Satisfaction or dissatisfaction with his own movement may be a possible result of the movement pattern. It would seem that satisfaction in a movement situation might result in repetition of the pattern or in the utilization of similar movement patterns. It is important to begin to investigate why these patterns become satisfying and hopefully help elementary programs help children find success and satisfaction early in school. Hopefully, these feelings will extend throughout the child's life. Thus, meaning is found in activity and that meaning will motivate the person to remain active throughout his life span.
CHAPTER III

PROCEDURES

Children in the first grade were photographed during the performance of the three fundamental motor skills of the standing broad jump, tennis ball throw for distance, and soccer ball kick for accuracy. The performance scores were recorded. An analysis of the films revealed the space score of each child's performance of the three skills. Each child was given the Movement Satisfaction test and as a result received a score.

It was important to this study to select tests which would be appropriate tasks for first grade children. This chapter includes the description of the subjects used, the kinds of tests chosen as appropriate for the subjects, and the way in which the data was collected.

In addition, it was important to find an administrator and school system that would accept the study as being important enough to involve school time of the children. Mr. Wulber, the principal of the Montrose Elementary School, was very interested in the study and helped with the filming and testing procedures. He was most cooperative in securing the room for the testing and in permitting the investigator to leave the basic equipment needed for the filming in one place during the three testing days. He was also instrumental in securing permission from the parents to have the children involved in such a study.
SELECTION OF SUBJECTS

Forty first grade children (21 girls, 19 boys) from the Montrose Elementary School in Bexley, Ohio, were selected as subjects for the study. All of the children in two classroom sections were used in the study.

There were three purposes of the study: (1) measure the space utilization during the performances of three fundamental motor skills, (2) measure the performance of the same fundamental motor skills, and (3) elicit an expression of liking or disliking for these particular movement activities. The objective of the study is to relate motor skill performances to space utilization and/or satisfaction.

Most of the children in these two classes had attended the same school during their kindergarten year and the first half of their first grade year. During this period their physical education program met twice a week for a total of 60 minutes. The curriculum was based in part under the supervision of a physical education specialist using and developing fundamental motor skills including kicking, throwing, and jumping. These fundamental motor skills have their basis early in the life of the child, therefore, they are appropriate movement activities for children of this age.

SELECTION OF TESTS

Three fundamental motor skills were chosen as appropriate tasks for first grade boys and girls:

1. **Standing broad jump for distance.** This skill has its beginnings early in the life of the child when he used two feet to project the body slightly forward in a take-off to one of leaving from two feet and landing on two feet.
2. **Tennis ball throw for distance.** This skill has its crude beginning in a casting pattern which develops finally into an efficient throw. The tennis ball was used for throwing because Seils\textsuperscript{78} found that a tennis ball was a better size than a 12" softball or a baseball for children of this age group.

3. **Soccerball Kick for Accuracy.** The soccerball kick for accuracy has been used in several studies with children of this age group (see Johnson\textsuperscript{79} and Sweeney\textsuperscript{80}). It has been used as an appropriate test to measure proficiency in selected fundamental skills that children normally use in the elementary school physical education program.

**Movement Satisfaction Scale.**

The score on this scale represents each subject's degree of liking (satisfaction) for his own movement. The test designed for first and second grade subjects based on the assumption that body image and movement concept are related to self image. The scale is based on 30 items relating to the child in movement situations. The child selects from a five point Snoopy Scale (five different emotions ranging from very happy to very sad) depending on his liking for that particular movement situation. In this study the degree of satisfaction expressed by each child was compared to actual results achieved by the performance of the fundamental motor skill and the actual use of space by specific body parts during the performance of the motor skill.

\textsuperscript{78}Seils, "The Relationship"

\textsuperscript{79}Johnson, "Measure of Achievement"

\textsuperscript{80}Sweeney, "The Effects of Instruction"
COLLECTION OF DATA

Figure I

Photographic Set Up

Top view

Back drape

62" CENTER MARK

Toe line

12'

Disk

Camera

Lamp

4' HT.

Front view

9' x 15' →

Back drape

Center mark (12" x 12")

with subject number

Motor on tripod

Camera on tripod

Toe line

62"
Figure 2

Marking of the Subjects
A 35mm slide was made from the film transparencies which was projected on the wall at a distance of three feet. Acetate was attached to the wall. Colored felt tip pens were used to mark pathways on the acetate, then these pathways were transferred to graph paper. In the analysis stage the number of blocks covered in a horizontal and vertical plane yielded the results.

Each skill was started from a standing position with arms at the sides. The child moved after the word "ready". The camera shutter was left open until the movement was completed. Occasionally, a "retake" was necessary because the child started too soon. One practice chance was given before each movement. Two children at a time were in the filming room--one performed while the other assisted.

Movement Satisfaction Scale

The group test was administered in the cafeteria with two teachers, Mr. Wulber and myself present. Each child had marked his answer before going on to the next question. The questions were read by the investigator.*

This test was given on a day when the children would not have physical education so they would not be influenced by their immediate physical education experiences when they answered the questions.

*81 taped questions were sent by Tanner but the children had difficulty understanding the questions. The investigator read the questions for the children.
STANDING BROAD JUMP

The child started on a mat that had an adhesive tape starting line. White tape marks were used every six inches for motivation and ease in measuring. The child was shown how to put his feet in relation to the jumping line and challenged by "How far can you jump starting with both of your feet on the line?" Each child was allowed a practice jump which was followed by three jumps that were filmed and measured. The jump was started from a standing position with the arms at the side of the body.

The distance of the jump was measured from the take-off line to the point of landing of the body part which was closest to the take-off line. All of the children landed on their feet so the heel was the landing point for the measurement.

The elbow was selected as the body part to be used for space usage. The head and legs travel with the body in the jump; however, the elbow is a part of the body that could vary in the amount of space used that was not directly related to the distance traveled.

The space usage of the elbow was measured by counting the horizontal and vertical blocks on graph paper (five blocks to the inch) that was recorded on the film. Figures 3 and 4 show two standing broad jump performances and the space graph analysis.
Figure 3

Standing Broad Jump
Figure 4

Standing Broad Jump Analysis
OVERHAND TENNIS BALL THROW FOR DISTANCE

The tennis ball was selected because it is of a better size than a softball or baseball for children of this age. The child was directed to "Throw the ball as hard and far as you can."

The throw was measured from the starting point to the initial landing of the ball. In this study the distance of the throw was rounded off to the nearest six inch mark. Thus, 20'4" became 20.5 feet, the range for 20 feet extending from 19'9" to 20'3".

Each child was given a practice throw and then filmed and measured three times in his performance. The starting position was upright with the arms down at the side of the body. The partner of the thrower retrieved the balls.

The throw which traveled the greatest distance was chosen for space utilization analysis. The criteria for this analysis was:

- Feet together - very little body action 1 point
- Same foot forward as throwing arm 2 points
- Opposite foot forward to throwing arm 3 points
- Step forward onto opposite foot 4 points

Because the foot patterns affect the amount of rotation permitted in the body these patterns become essential to the distance achieved. Figure 5 shows examples of the ball throw for distance.

The ceiling in the filming room was low and it is possible it may have affected the distance achieved by some of the children.
Figure 5

Tennis Ball Throw for Distance
Figure 6

Tennis Ball Throw for Distance Analysis

No. 2

GREEN - THIGH
BLUE - KNEE
RED - LOWER LEG
GREEN - FOOT
BLACK - OPPOSITE FOOT
**KICK FOR ACCURACY (Soccerball)**

The child was asked to place a soccerball on the kicking line which was 20 feet away from the target. He was shown the wall target which was five feet high and ten feet wide. Five equal rectangles placed perpendicular to the floor were marked with \( \frac{1}{2} \) inch tape. See Figure 7 for target.

The children were told which target scored the highest. It was then explained they were to score as many points as possible in three kicks. A trial kick was given and then three kicks were scored and filmed. If the ball hit two target areas at the same time, the higher point value was awarded. The child partner of the kicker retrieved the balls.

The highest point value kick was chosen for film analysis because it showed the greatest amount of accuracy. If two kicks scored the same high value, the first highest was chosen.

The foot was selected as the body part to measure for space usage because it is the body part that has the best potential for traveling during the performance of the skill and it is the most essential to the kick. The results were transferred to graph paper. Figure 8 shows examples of the kick for accuracy.
Figure 7

Kick for Accuracy Target

10 ft. wide

5 ft. high

1 3 5 3 1

ground level

_________ kicking line 20 ft.
Figure 8

Kick for Accuracy
Figure 9

Kick for Accuracy Analysis

BLACK - THIGH
BLUE - KNEE
RED - LOWER LEG
BLACK - FOOT
GREEN - OPPOSITE FOOT
ANALYSIS OF DATA

The data for the 40 subjects were programmed for the following two tests to determine if significant relationships existed:

1. T-tests using boys as a group and girls as a group
2. Correlation Matrix (boys - girls)
CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

All data was processed at The Ohio State University Computer Center.

The study was designed to determine the relationship, if any, among these scores: (1) Movement Satisfaction Scale scores taken from the results of a paper-pencil test by adding up the scores, (2) performance scores obtained during the performance of the fundamental motor skills chosen for the study, and (3) space utilization scores obtained by a photographic technique during the performances of fundamental motor skills chosen for this study. Performances were measured on the nine variables found in Figure 10. Appendix B contains the raw data on the movement satisfaction scores and performance scores showing the range and frequency of scores.

It was decided that the Null Hypothesis of no relationship among these variables would be rejected at the .05 level of confidence.

A modified t-test as shown in Table 1 was administered to determine if significant variations in the means between the boys and girls and the nine variables existed. The means of the boys were higher in seven of the variables. The only means in which the boys scored lower than the girls were:

1. Kick for Accuracy - Foot - Vertical Space
2. Standing Broad Jump - Elbow - Vertical Space
Figure 10

Performance Variables

SCORES

1. Movement Satisfaction Scale

2. Performance Scores
   - Standing Broad Jump for Distance
   - Tennis Ball Throw for Distance
   - Kick for Accuracy

3. Space Scores
   - Standing Broad Jump - Elbow - Horizontal Space
   - Standing Broad Jump - Elbow - Vertical Space
   - Kick for Accuracy - Feet - Horizontal Space
   - Kick For Accuracy - Feet - Vertical Space
   - Tennis Ball Throw - Feet Patterns
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<td>Performance</td>
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<td>Tennis Ball Throw</td>
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<td>Tennis Ball Throw</td>
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<td>Foot Patterns</td>
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</table>

* Significant at the .05 Level of Confidence - t = 2.03

N - Boys - 19
N - Girls - 21
9 Variables
As shown on Table 1, two significant variables distinguished the boys from the girls. These two variables (tennis ball throw performance and tennis ball throw foot patterns) were significant at the .05 level of confidence for the boys. The other seven variables when compared for sex were not significant.

A correlation matrix was used to determine any significant differences among the nine variables. Because of the sex differences found in the t-test it was necessary to treat the boys and girls separately in the correlation matrix. There were twenty-one subjects in the girls group and nineteen subjects in the boys group. Table 2 and 3 show the correlation matrix as administered using the boys and the girls as separate groups.

Figure 11 is a summary of the correlations that were significant at the .05 level of confidence.
Figure 11

Significant Correlations for Boys:

1. Standing Broad Jump Performance - Standing Broad Jump Elbow Horizontal
2. Standing Broad Jump Performance - Standing Broad Jump Elbow Vertical
3. Standing Broad Jump Elbow Horizontal - Standing Broad Jump Elbow Vertical
4. Standing Broad Jump Elbow Horizontal - Tennis Ball Throw Foot Pattern
5. Standing Broad Jump Elbow Vertical - Kick for Accuracy Foot Vertical
6. Kick for Accuracy Foot Horizontal - Tennis Ball Throw Foot Pattern

Significant Correlations for Girls:

1. Standing Broad Jump Performance - Standing Broad Jump Elbow Horizontal
2. Kick for Accuracy Performance - Standing Broad Jump Elbow Vertical
3. Standing Broad Jump Elbow Horizontal - Standing Broad Jump Elbow Vertical
4. Kick for Accuracy Foot Horizontal - Kick for Accuracy Foot Vertical
5. Kick for Accuracy Foot Vertical - Tennis Ball Throw Foot Patterns
### TABLE 2

Correlation Coefficients for Boys Using Nine Variables

<table>
<thead>
<tr>
<th>Movement Satisfaction</th>
<th>Broad Jump Performance</th>
<th>Tennis Ball Throw Performance</th>
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<th>Broad Jump Horizontal</th>
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</table>

* Significant at the .05 Level of Confidence

N = 19  Nine Variables

r = .378 for .05 Level of Confidence

Program: Correlation with Transgeneration - Revised January 29, 1970  Health Sciences Computing Facility, UCLA.
### TABLE 3
Correlation Coefficients for Girls Using Nine Variables

<table>
<thead>
<tr>
<th>Movement Satisfaction</th>
<th>Broad Jump Performance</th>
<th>Tennis Ball Throw Performance</th>
<th>Kick Accuracy Performance</th>
<th>Broad Jump Horizontal</th>
<th>Broad Jump Vertical</th>
<th>Kick Horizontal</th>
<th>Kick Vertical</th>
<th>Throw Foot Patterns</th>
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* Significant at the .05 Level of Confidence

N=21    Nine Variables

r = .360 for .05 Level of Confidence

Program: Correlation with Transgeneration - Revised January 29, 1970 Health Sciences Computing Facility, UCLA.
The three categories measured in this study are discussed in the following paragraphs. The significant correlations for the boys, the girls, and both groups are shown. The three categories (Movement Satisfaction Scores, Performance Scores, and Space Scores) contained nine variables which were correlated for the boys and for the girls.

Movement Satisfaction Scores

In the t-test there were no significant differences between the boys and the girls in the written expression of movement satisfaction. For the children in this study this expressed satisfaction does not appear to differentiate between boys scores and girls scores.

Results of the correlated data show that no relationship at the .05 level of confidence exists between fundamental motor skill achievement in the three selected motor skills and the expressed movement satisfaction by children in the first grade. It was also apparent that a significant relationship does not exist between expressed movement satisfaction scores and the use of space in the performance of fundamental motor skill patterns.

Performance Scores

Standing Broad Jump Performance:
The elbow was selected as the body part which could show some variation in space utilization. Other parts of the body such as the head and legs are committed to the body as it is in flight.

Boys: The boys showed significant correlations between performance in the broad jump and the horizontal and vertical use of the elbow. Thus, those boys who traveled longer distances in the jump used more horizontal and vertical space in the elbow pathway.
There was very little relationship between performance scores in the standing broad jump and the kick for accuracy for the boys.

Girls: The performance scores in the standing broad jump were significantly correlated to the horizontal use of space by the elbow. The significant relationship between performance in the jump and the vertical use of the elbow did not appear for the girls as was the case for the boys.

Both groups: The relationship between the space pathway of the elbow during the performance of the standing broad jump is very much related to the distance achieved for boys and girls.

**Tennis Ball Throw for Distance Performance:**
The foot pattern used during the performance was selected as the significant part of the throw pattern to be studied. Because the foot pattern affects the amount of rotation permitted in the body, these foot patterns are essential to the distance achieved in the throw.

Boys: The t-test revealed the means of the boys were significantly higher than those of the girls.

Girls: No significant data.

Both Groups: There were no significant correlations of the tennis ball throw for distance and any of the other nine variables for either group.

**Kick for Accuracy Performance:**
The foot was selected as the body part measured in this test. The foot has the most potential for traveling during the performance of this fundamental motor skill and it is the most essential body part.
Boys: No significant data.

Girls: The kick for accuracy performance was highly correlated to the horizontal space used by the elbow in the standing broad jump.

**Space Scores**

**Standing Broad Jump Elbow Vertical and Horizontal Distance**

Boys: As reported in the performance section, the boys performance scores were significantly correlated with the vertical and horizontal use of elbow pathway. The horizontal and vertical use of the elbow pathway was significantly correlated. In addition, the boys study revealed a significant correlation between the vertical distance of the elbow pathway in the jump and the foot pattern utilized in the performance of the tennis ball throw. The horizontal elbow pathway was significantly correlated with the horizontal distance traveled by the foot in the kick for accuracy. This might indicate some consistency in the boys to use more space in their movement patterns.

Girls: There were significant correlations between the horizontal use of the elbow pathway and performance scores and between horizontal use of the elbow pathway and the vertical use of the elbow pathway.

Both Groups: Because of the significant correlations between performance scores and use of the elbow during performance and the correlations between horizontal and vertical use of the elbow during performance might lead to the conclusion that the child who is
utilizing a longer backswing in the preparatory stage and is not restricting the flight of the elbow during the flight and the follow through stage is getting more distance.

Kick for Accuracy Foot Vertical and Horizontal Distance

Boys: A significant correlation existed between the horizontal space utilized by the foot during the kick and the tennis ball throw foot patterns utilized during the performance of that test. The vertical space pattern used by the foot in the kick was significantly correlated to the use of the vertical use of the elbow during the jump.

Girls: The vertical and horizontal space used by the foot during the kick was significantly correlated. The vertical use of the foot in the kick was significantly correlated with the foot patterns in the tennis ball throw.

Both Groups: Significantly correlations for both groups appear in the space usage of the foot during the kick and the foot patterns utilized in the tennis ball throw.

Tennis Ball Throw Foot Patterns

Boys: The tennis ball foot patterns were significantly correlated with the horizontal use of space by the elbow in the jump and the horizontal use of space by the foot in the kick.

Girls: The foot patterns in the throw were significantly correlated with the vertical foot pattern in the kick.

Both Groups: Significant correlations appear in both groups in the foot patterns used in the throw and the foot space pattern during the kick.
Summary

For this study and its population, there was not any significant relationship between performance scores and movement satisfaction scores. Tanner\textsuperscript{81} found no significant relationship between highly skilled first and second grade children and the expression of movement satisfaction. This study seems to confirm that lack of relationship. It becomes increasingly apparent that early elementary school children do not equate movement satisfaction with a level of performance. This is important to those who work with children. Children are moving for other reasons and/or enjoy this moving even though the result may not be the best when measured in feet and inches. No other studies have used skill and the Movement Satisfaction Scale.

There was no significant relationship between the use of space during the performance of fundamental motor skills and movement satisfaction. One might expect that these children who were well skilled and utilized a great deal of space during performance, would express a high movement satisfaction score. However, such was not the case.

For the boys there seems to be better performances in the throw for distance and in the foot patterns selected for the throw. The boys tended to use more mature foot patterns during the performance and their results were better. This is consistent with findings by other investigators.

\textsuperscript{81}Tanner, "The Relationships." p.59
There were no significant correlations among any of the three fundamental motor skills patterns (standing broad jump, tennis ball throw for distance, and kick for accuracy). These skill patterns are commonly used for testing children in the early elementary years and often form the basis of elementary physical education programs. These results did not seem to find a common ability to perform at consistent levels within the three skills.

In each significant correlation one of the items was a spatial use variable. In four cases the spatial variable is correlated with a performance variable. In the seven other instances, a spatial variable is correlated significantly with another spatial variable. In three instances the horizontal and vertical use of space is significantly correlated with the performance score. For example: the horizontal and vertical use of the elbow in the standing broad jump in significantly related to the performance of the standing broad jump. In the other four cases a spatial variable of one skill is highly correlated with a spatial variable of a different skill.

It was expected that there would be no significant differences in the amount of expressed satisfaction as the use of space in the performances increased and/or the actual performance scores increased. Further, there would be no significant differences in the space utilization scores as the performance scores increased and/or the amount of expressed satisfaction increased. There would be no significant differences between the boys and the girls when these groups are compared. Because of the results of the data coded and analyzed, the Null Hypothesis can be rejected at the .05 level of confidence.
CHAPTER V

SUMMARY AND CONCLUSIONS

Activity is essential for the human body. For the child it serves as the vehicle for his developmental stages and also as a source of pleasure and/or satisfaction. Why the child is partially active and what causes him to become less active as he matures may be explained in terms of what he has experienced during critical childhood years. Because activity is important to the adult in the maintenance of fitness, it becomes important to discover what causes activity habits to develop and be used in later life. The satisfaction derived from activity may be one key to the development of activity habits and their inclusion in later life.

The Movement Satisfaction Scale used in this study was designed to elicit responses from first and second grade children concerning their degree of liking or satisfaction for their own movement skills. The assumption was made that as the performance in fundamental motor skills increased, the amount of satisfaction would not increase for the child. It was further thought that the amount of space utilized in the performance of skills would not affect the performance attained and would not affect the amount of satisfaction derived from the movement situation.

Fundamental motor skills are the basis for future sport skills. Investigation and study of the child as these fundamental motor skills are utilized in movement situations contributes to the development of future elementary physical education curriculums. These funda-
mental motor skills have their early beginnings in the developmental stages of the child.

This study was designed to look for possible relationships among movement satisfaction scores, performance scores (standing broad jump, tennis ball throw, and kick for accuracy) and space scores. As each motor skill was performed, a film was made of the child in motion. These filmed results were transferred to acetate for study and analysis. Three selected body parts (elbow in standing broad jump, foot in the kick for accuracy, and foot patterns in tennis ball throw) were analyzed for use of horizontal and vertical space. In the foot patterns for the throw, four possible patterns were selected and given a number value according to their contribution to throwing effectiveness.

The data were coded and computerized. A t-test compared the means of the nine variables. Because of a significant difference between boys and girls in two of the nine variables, a correlation matrix was administered for the boys and a separate one for the girls. The correlation matrix was administered to determine possible relationships among the nine variables. The following relationships proved significant at the .05 level of confidence:

Boys:
1. Standing broad jump performance - Standing broad jump elbow horizontal
2. Standing broad jump performance - Standing broad jump elbow vertical
3. Standing broad jump elbow vertical - Standing broad jump elbow horizontal
4. Kick for accuracy foot vertical - Standing broad jump elbow vertical
5. Tennis ball throw foot patterns - Standing broad jump elbow horizontal
6. Tennis ball throw foot patterns - Kick for Accuracy foot horizontal
Girls:
1. Standing broad jump performance - Standing broad jump elbow horizontal
2. Standing broad jump elbow horizontal - standing broad jump elbow vertical
3. Standing broad jump elbow vertical - Kick for accuracy performance
4. Kick for accuracy foot vertical - Kick for accuracy foot horizontal
5. Tennis ball throw foot patterns - Kick for accuracy foot vertical

Conclusions

The following conclusions seem justified based on the data which was collected and analyzed for this study:

For this age group there were no significant differences in the expressed movement satisfaction between the boys and the girls. The scores from the Movement Satisfaction Scale were not significantly related to the performance of fundamental motor skills or to the amount of space utilized in the performance of the fundamental motor skills. It becomes clear that children of this early elementary years do not relate the satisfaction they derive from a movement situation to what they achieve on a motor skill task. Perhaps the satisfaction of moving comes from within and is not affected by how far they jump when measured in feet and inches.

There were significant differences in the mean scores of the boys and the girls in two variables. The boys scored higher in the tennis ball throw for distance and the foot patterns used in the throw. With the increased use of the body in the throw better results were attained. The foot pattern affects the amount of rotation and range of movement possible in the body and is one factor in throwing a longer
Because of these differences found in the t-test, separate correlations were done for the boys and girls.

The relationship between the space used by the elbow in the standing broad jump is very much related to the distance achieved in the jump for both groups. Better scores in the jump were achieved by children who used more space in swinging the arms.

Both groups had significant correlations between the use of space by the foot during the kick and foot patterns used in the tennis ball throw. This increased use of space by body parts during motion was related to the score achieved.

In each significant correlation for both groups, one of the variables was a space variable. In four cases the spatial variable was correlated with a performance variable. In seven cases the spatial variable was correlated with another spatial variable. These findings may point the way to investigation of the consistent use of space by an individual as it relates to the performance in fundamental motor skills. In addition, it confirms the idea that the increased use of space by a child during the performance of fundamental motor skills is related to producing better results. This idea has been confirmed in studies using children, especially studies using the standing broad jump. However, even at first grade level this idea appears to become important in helping children acquire movement patterns.

There were no significant correlations among performance scores in the fundamental motor skills for either group. These results did not find a common ability to perform at a consistent level in all three skills.
Recommendations

1. We have assumed that children and adults at some point begin to associate movement satisfaction with success in motor skill performance scores. More investigation needs to be done in looking at the basic idea and then to determine at what point, if ever, this relationship appears.

2. This study needs to be repeated with older elementary school children as subjects. As the fundamental motor skills become more important in the development of sport skills it may influence the amount of satisfaction derived from the movement situation.

3. It is important to look at motor performance in relation to the amount of space used in the performance and the movement satisfaction score when the object of the performance is not for a numerical score. For example "kick as hard as you can" would elicit a motor response on the part of the child which would not require a measurement but would be a total movement response on the part of the performer. This space use could be compared with the kick for accuracy to determine what changes, if any, occurred on the part of the performer.

4. Further investigation is needed in the area of spatial preferences of the individual in the performance of motor tasks. If we are more comfortable with one spatial organization it may affect the kinds of activities chosen voluntarily by the individual. For example, a large use of space in performance may be uncomfortable for an individual. It would be important to look at the consistency in the use of space which occurs in different movement tasks with the same individual.
APPENDIX A
**Movement Satisfaction Scale Items**

1. How do you feel about bouncing a ball many times without stopping?
2. How do you feel about jumping very high?
3. How do you feel about picking very big things up and carrying them?
4. How do you feel about moving and stopping very suddenly?
5. How do you feel about climbing on very high things?
6. How do you feel about tagging games?
7. How do you feel about playing hard and using lots of energy?
8. How do you feel about stretching your body as far as you can?
9. How do you feel about balancing on one leg?
10. How do you feel about running very fast?
11. How do you feel about jumping over something about as high as your knee?
12. How do you feel about rolling over and over and over?
13. How do you feel about moving in a big space?
14. How do you feel about moving quickly around chairs, tables or people when you have to?
15. How do you feel about kicking a ball a long way?
16. How do you feel about having to move slowly all the time?
17. How do you feel about running for a very long time?
18. How do you feel about moving to music?
19. How do you feel about running backwards?
20. How do you feel about bouncing a ball quickly lots of times?

21. How do you feel about hanging from things?

22. How do you feel about throwing a ball for someone else to catch?

23. How do you feel about moving when your friends are watching you?

24. How do you feel about playing very hard and fast?

25. How do you feel about jumping on to something about as high as your knee?

26. How do you feel about moving very heavy things?

27. How do you feel about throwing and catching a ball?

28. How do you feel about moving sideways?

29. How do you feel about changing directions quickly when you are moving?

30. How do you feel about jumping a long way, when you get to run before you jump?
Directions for Movement Satisfaction Scale Test

An enlarged series of five emotional Snoopys are pinned on the wall in front of the children.

Do you recognize these pictures? (Response from children.) Yes, of course you do; our friend Snoopy. Do you notice anything about Snoopy in these drawings? Yes, in some he is very happy, and in some he is sad; either looking as though he feels good about things, or badly about them. How does he look here? (Point to the first drawing.) Yes, very happy indeed doesn't he; and here? (Point to the second drawing.) Yes, still happy, but not very happy like the last one. In this one? (Point to the last drawing). Oh yes, he is very unhappy isn't he, very sad looking; and here? (Point to last but one) Mmmm-he is still sad, his ears are still drooping down aren't they? Is he as unhappy as the one before? No, he isn't, is he? Now look at this drawing in the middle. (Point to the middle one.) He's not happy or sad, is he? In fact he looks as though he is not quite sure how he feels about things. His ears are half up and half down, aren't they? He really doesn't know how to feel about it all.

Can you really tell how Snoopy feels by these pictures? Yes, I think so too - so now you are going to use them in a fun way; you are going to use them to show me how you feel about some of the things that you do.

You see the papers in front of you; they have Snoopys drawn on them just like these on the board. I am going to ask you some questions about things that you do, and you are to color the Snoopy who best shows how you feel about doing them.

Let's have a little practice with one or two questions before you start coloring on your paper.

If I ask you "How do you feel about eating ice-cream?", which one would you color? Yes, nearly all of you would color the very happy one; some might not feel quite so pleased about it, he might color just the happy one, but I don't suppose anyone would color the very sad one.

Let's try another; "How do you feel about playing the piano?" Some of you may never have had the chance to try this and so you have no idea how you would feel about it. If that is the case, which one would you color? Yes, this one in the middle, the one who is not really sure what to think about how he feels.
One more: "How do you feel about having to sit down all day long?" Mmmmm—most of you feel very unhappy when you have to sit still for a long time, don't you?

I think you know how to do this now, don't you? Good. Just remember, you don't have to try to please anyone by your answer; there is no right or wrong answer; you are just showing how you feel about the question.

Write your name at the top of your paper. Put your marker under number one, and listen -- (start tape) -- now color the Snoopy who best shows how you feel about that.

Put your marker under two -- (etc.)
MOVEMENT SATISFACTION SCALE SCORES

RANGE OF SCORES
TENNIS BALL THROW PERFORMANCE

Frequency

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RANGE OF SCORES IN FEET

STANDING BROAD JUMP PERFORMANCE

Frequency

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RANGE OF SCORES IN INCHES
KICK FOR ACCURACY PERFORMANCE

RANGE OF ACCURACY SCORES
BOOKS


ARTICLES


