

SEX AND GRADE LEVEL GROUP DIFFERENCES IN SEX-TYPING
OF VARIOUS MOTOR ACTIVITIES

by

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Chapter 1

INTRODUCTION

Males and females, during childhood and adulthood, exhibit behaviors that are related to the sex of the individual. These sex-role behaviors and behavior stereotypes have become so consistently demonstrated that evaluative and measurement tools have been devised to examine what these phenomena mean to our society (19). Through the work of various authors, different theories have evolved to help explain these phenomena. These theories deal with socialization processes that occur in our lives that cannot be explained only by biological and heredity circumstances. Observational, cognitive, imitative, identification, and sex-typing processes have been discussed as possible explanations for sex-role behaviors and stereotypes (23) (25) (31). The research in the area of sex-typing or sex-labeling of motor activities and games has been limited, but can help us better understand sex-role behaviors and stereotypes. Some suggest that the sex-labeling of games and motor activities by teachers, parents, and children is responsible, at least in part, for the phenomena of sex-role behaviors (46).

The terms "masculinity" and "femininity" have become widely used in describing the sexes and their behavior. In fact, sex-role expectations for what is masculine and what is feminine are apparently ever present in our socialization processes. An excellent illustration of these sex-role expectations is observed by Roger Brown:

In the United States a "real" boy climbs trees, disdains girls, dirties his knees, plays with soldiers, and takes blue for his favorite color. A "real" girl dresses dolls, jumps rope, plays hopscotch, and takes pink for her favorite color. When they go to school "real" girls like English and music and "auditorium;" "real" boys prefer manual training, gym, and arithmetic (3:161).

Also, a large body of research on children's games and toy preference indicates that boys choose objects related to sports, machines, aggression, speed and power roles, whereas girls select games and objects associated with the kitchen and house, babies, personal attractiveness, and fantasy roles (23).

Concerning physical activity, evidence seems to indicate that this domain is perceived to be a male domain (19). Sex-role expectations of the sexes seems to support this evidence. Herkowitz reports that strongly sex-typed activities were overwhelmingly perceived as boy activities (19:11). Further evidence of male dominance in physical activity is supplied by the research of Deaux and Enswiller (9). When the sex of the subject was compared to the sex of the task (sex-appropriateness), males were seen to do well on male or female tasks, while women may only do well on female tasks. Male roles were seen to be more active and powerful, suggesting that anything requiring big muscle or gross motor performance is perceived to be sex-appropriate for males.

The advent of Title IX in public schools and research of children's game preferences that points to increased participation by females in physical activity may indicate that a change in this male dominated domain may be forthcoming. Specifically, Title IX of the Education Amendments Act of 1972 prohibits sex discrimination in an activity in any school that receives federal funds. Each school must

comply with the equal opportunity mandate by July 15, 1978 (5).

Along with this provision is the evidence supported by Sutton-Smith and Rosenberg (44) and Montemayor (33) that demonstrates an increase in females' participation in physical activity as girls' game preferences have become more like the boys' game preferences. While the girls' game preferences have moved more toward the boys', the boys' preferences have become increasingly circumscribed (44).

Age differences have also been reported to help try and explain sex-role behavior regarding children's game preferences and motor activities (30) (38) (42). Some conclusions from this research are that preadolescent and adolescent girls show a decreased interest in masculine activities. However, Montemayor (33) and Herkowitz (19) provide evidence that both males and females over a wide age range demonstrate a strong tendency to perceive motor activities as appropriate for both sexes. Montemayor (33), however, notes that when asked to perform in an activity which is clearly labeled sex-appropriate or sex-inappropriate, both boys and girls perform consistent with their own sex. Herkowitz (19) found that disagreements between the sexes in typing occurred less frequently with increasing age. Therefore, Herkowitz (19:9) concludes that, as Mischel suggests (30), the longer a person is subject to socialization processes, the more the processes dominate his behavior.

The basic assumption seems to be that, "What is appropriate for males is not appropriate for females and vice versa." However, some researchers support the idea that women's roles are becoming more flexible and that females are becoming increasingly masculinized (2). If the female roles are changing, then socialization processes must be a major contributor to these changes. Sex-typing processes discussed by

Mischel (30) is a possible contributor to many changes in gender behavior. However, only a few studies have recorded the perceptions of both sexes in trying to determine how stereotyping occurs in motor activities and games (19).

STATEMENT OF THE PROBLEM

The purpose of this study was to determine if sex and age group differences existed when elementary school children classified or sex-typed three different motor activities: (a) fine motor activity, (b) fine-large motor activity, (c) large motor activity. More specifically, the objectives of this research were to:

1. Determine which of the three activities was typed as most important for girls to win in a competitive situation.
2. Determine which of the three activities was typed as most important for boys to win in a competitive situation.
3. Determine which of the three activities was typed as least important for girls to win in a competitive situation.
4. Determine which of the three activities was typed as least important for boys to win in a competitive situation.
5. Determine which of the three activities was perceived as most important for personal status by winning in a competitive situation.
6. Determine which of the three activities was perceived as most important for personal enjoyment in a competitive situation.
7. Determine which of the three activities was perceived as least important for personal enjoyment in a competitive situation.
8. Determine whether boys or girls were perceived to have the greater ability when competing in the fine-large motor activity.

9. Determine whether boys or girls were perceived to have the greater ability when competing in the fine motor activity.

10. Determine whether boys or girls were perceived to have the greater ability when competing in the large motor activity.

11. Determine interrelationships among perceived ability of sex groups, personal status choices, activity importance choices, and personal enjoyment choices.

DELIMITATIONS OF THE STUDY

The following delimitations help to define the boundaries of this study:

1. The subjects were fourth, fifth, and sixth grade elementary school children.

2. One parochial elementary school served as the source for subjects in the study.

LIMITATIONS OF THE STUDY

The following variables were controlled as much as possible in the study; however, they could be possible limitations of the study:

1. The subjects, although encouraged not to, may have shared information or results with one another.

2. Although the subjects were asked to concentrate on what they saw and heard in the film, they may not have seriously participated in the viewing of the film and in answering questions.

DEFINITION OF TERMS

The following terms are defined to prevent misunderstanding or

misinterpretation by the reader. In this paper, the following definitions will be referred to when the terms below are used.

Ability Status

This term refers to an individual's perceptions of his or her physical ability compared with others.

Fine Motor Activity

This term refers to any type of activity where eye-hand coordination and small, quick muscle contractions are critical for affective participation of the activity. For this study, the fine motor activity was a TV "Pong Game."

Fine-Large Motor Activity

This term refers to any type of activity where small, quick muscle contractions and large but not maximal muscle contractions are combined for affective participation of the activity. For this study, the fine-large motor activity was the "Balance Game."

Large Motor Activity

This term refers to any type of activity where large, powerful, maximal muscular contractions are critical for affective participation of the activity. For this study, the large motor activity was the "Bicycle Game."

Personal Enjoyment

This term refers to anything that gives an individual pleasure or satisfaction. In this study, an activity that the subjects perceived as fun to play or what they would most like to play was determined as important for personal enjoyment.

Personal Status

This term refers to anything that is held in high esteem or value to an individual. In this study, the game that the subjects perceived as most important for "you" or them personally was determined as most important for personal status.

Physical Activity

For the purposes of this study, physical activity or motor activity will refer to any game, sport, or sport skill requiring human movement.

Sex-Typed Behaviors

Those behaviors that are typically more expected and approved for one sex than for the other.

Sex-Typing

This is the process by which an individual acquires sex-typed behavior patterns.

Chapter 2

REVIEW OF LITERATURE

There is an overwhelming amount of research that has been completed over the years that tries to explain why and how males and females are different or alike. To help explain the data collected, this review of literature has been divided into five sections: sex differences, the development of sex differences, sex-role expectations, sex-typing of games and motor activities, and competition between the sexes.

SEX DIFFERENCES

There is little argument that men differ from women and boys differ from girls in a multitude of ways. The literature is filled with studies documenting these differences. The intent of this section is to inform the reader of what is reported in the literature and to demonstrate the variety of ways the sexes have been differentiated through research. This researcher is aware of possible pitfalls and problems associated with some of the research that has been done to differentiate the sexes. The purpose here is to merely report the research of sex differences, not to make judgments in validity of such research. The following will be a summary of some of the ways males are differentiated from females and vice versa.

One of the main ways that the sexes have been differentiated is in body structure. When considering body weight, boys tend to be slightly heavier than girls from birth to four years of age. From age

4 through 11, there is little or no difference in the weight of boys and girls. Between the years of 11 and 15, girls are generally heavier than boys, and after age 15 the trend reverses with boys becoming significantly heavier than girls on into adulthood (6) (18).

Children also grow in height at a relatively constant rate. Girls enter adolescence (approximately age 12) earlier than boys (approximately age 14) and therefore are temporarily taller, but as a group, girls do not reach the adult heights of boys (6) (18).

At all ages, girls have more subcutaneous limb and body fat than boys. Therefore, boys demonstrate a greater proportion of lean body mass than girls (18). Girls do not achieve the physical work capacity of boys at any age. Females have smaller hearts, less blood volume, lower hemoglobin levels, less available oxygen, and fewer red blood corpuscles than do males (10). At age 15 or 16, boys reach their peak in their maximum O_2 per unit of weight. Girls reach theirs between ages eight and nine and then begin to decline. Therefore, boys usually have a slightly larger O_2 consumption throughout the years, and this is markedly so after age 15 through adulthood (10).

There doesn't appear to be any physical or physiological differences that differentially affect motor development of five-to-ten year olds. However, pubertal changes distinguish males from females on a number of biological characteristics that provide adult males with very real advantages in motor performance potential compared to adult females (24:57).

Boy-girl differences on motor performance occur at most ages, but size and direction of differences vary with age and task (24:73). Boys as a group can jump further (standing broad jump) and higher

(vertical jump) than girls (8) (12) (18) (24). Sex differences in running show boys have slightly better performances at earlier ages with these differences increasing as late childhood is reached (8) (12) (18) (24). Boys perform markedly better than girls on throwing for distance and accuracy at any age (8) (12) (24). Also, boys possess more throwing speed (8). Boys are stronger than girls in the shoulder girdle, hip region, and in grip strength (8) (12) (18).

Girls often exceed the boys in tasks involving rhythmic and accurate locomotor activities, including alternate hopping tasks, agility tasks, hopscotch, and similar tasks (8) (24).

Physical fitness performance of boys increases gradually until around age 12. After that time, performance increases dramatically with age (7). Girls, on the other hand, increase in physical fitness performance up until age 10 or 11, then their performance begins to decline or level off. Also, girls cannot achieve the gross performance levels that can be accomplished by boys (this is only true after ages 10, 11, 12) (7:106).

A final area of research that is important in determining sex differences deals with psychological, achievement, and aptitude levels of children. There is some concern that the generalizations that have been drawn from this type of research are not always based on sound empirical evidence. However, the valid research has been able to demonstrate some general trends that help differentiate the sexes.

Females develop language earlier and retain verbal superiority over males (20) (36). Females appear to excel in manual dexterity, perceptual speed, and artistic and musical aptitudes (36). However, on virtually every measure, boys sooner or later do better (20:1015).

Males tend to surpass females in motor skills, mechanical aptitude, and spatial aptitude (36). Boys' spatial conceptualization skills are more developed than those of girls, especially during adolescence, (36) and spatial ability has been shown as being positively related to masculinity (41). There is a general trend for a higher male aptitude relating to mathematical testing and science ability (36).

The sexes differ in the way they think, perceive, aspire, experience anxiety, daydream, and play competitive games (20:1015). Evidence even indicates that women have less confidence than men in their ability to perform assigned tasks, they feel less in control of events that effect them, and they tend to define themselves more in social terms during adolescence (4) (36).

There should be no doubt that differences do exist between male and female homo sapiens. Two kinds of debate have surfaced when dealing with sex differences. The first is between biological and sociocultural explanations for sex differences and the second is between various socialization theories. The next section will examine these debates, especially with regard to the socialization theories.

THE DEVELOPMENT OF SEX DIFFERENCES

A close look at the literature has shown a multitude of differences that exist between the sexes. These differences between men and women or boys and girls ranged from those in the chromosomal make-up of each sex to each one's uniqueness in physiological structure. Also, it is known that differences exist in the hormonal, morphological, and psychological make-up of the sexes.

However, the psychological differences that may or may not exist

between each sex are not as easily recognized as those in other areas. Several socialization theories have been developed to help explain possible differences that appear between the sexes when biological solutions cannot fully explain such differences.

The masculine-feminine paradigm has dominated the idea of sex-role identity. A good deal of research has been done to find ways in which appropriate sex-identity is acquired. Three models, the parental identification, the social learning, and cognitive developmental, have been designed to seek out this answer (30). The most powerful model for masculine-feminine acquisition has been the parental model. However, the two others mentioned serve as alternatives to this paradigm.

The parental model often attempts to establish the influence of same-sex parental influence by studying the effects of father absence on boys (36). Also, much attention is given to cross-sex identity in males. The hypothesis in these cases is that the child's early identification with his mother makes him vulnerable to "unconscious" femininity. Problems arise from these two methods of research because much of each hypothesis is based on assumptions. One assumption is that males are more susceptible than females to cross-sex identification. However, Brown (2:234), in studying sex-role preference in children, gives evidence to suggest that boys at all ages show a strong preference for the masculine role, whereas girls from age six to nine show a strong preference for masculine in contrast to feminine things.

The cognitive developmental model proposes that socialization stimulates or retards basic male and female models of cognition, pretty much regardless of what parents do or say (25). This model has shown that cross-sex-typing occurs for both males and females when relating to

intelligence and cognitive abilities. Maccoby (25) cites research where analytic thinking, creativity, and high general intelligence are associated with cross-sex-typing, in that men and boys who score high are more feminine, and the women and girls more masculine, than their low-scoring same-sex counterparts.

Kagan and his associates (22) feel that through observational and cognitive processes the young child soon comes to recognize his sexual identity or gender. Using the same cognitive processes that permit the child to understand the invariable identity of physical objects in the environment, the child can also rapidly develop a conception of his permanent sexual identity. These concepts appear to occur early in development, usually before the age of five. By the time children reach school age, they have clearly learned the concepts "male" and "female" (22:633).

Brown (2:232) goes further when he concludes that children seem to be able to tell differences in the sexes around age three or four. He states:

Preschool children as a group become fully aware of the fact that the world is divided into two groups of people and that depending on whether one belongs to one group or the other, different behavior patterns are expected accordingly (2:233).

The social learning model, reported by Mischel (30), views that children early learn to discriminate between "boy things" and "girl things" and later generalize new situations. The greater attentiveness to same-sex models reflects that people generally are reinforced throughout their histories more for learning the sex-typed behaviors of same-sex models than those of crossed-sex models (30). When models display sex-typed behavior, children are much more frequently rewarded for watching and imitating same-sex models. As Mischel puts it, "Boys do not learn baseball by watching girls and girls do not learn about

fashions from observing boys" (30:38).

Sex-typed behaviors may be defined as those that are typically more expected and approved for one sex than for the other and that lead to different consequences when performed by males as opposed to females in a particular community (30:4). Because of the differential consequences for males and females, these sex-typed behaviors come to be performed with different frequency by the sexes and to have different value for them. Sex-typed behaviors, like all other social behaviors, depend to a large extent on observational learning and cognitive processes. People learn sex-roles through their eyes and ears by observing other persons and events and not only from the consequences they get directly for their own behavior.

Sex-typing is the process by which an individual acquires sex-typed behavior patterns. This is accomplished by first learning to discriminate between sex-typed behavior patterns, then generalizing from these specific learning experiences to new situations, and finally to perform sex-typed behavior (31:57).

SEX-ROLE EXPECTATIONS

A seemingly endless amount of research has been done regarding the concepts of masculinity and femininity. Over the years, "masculinity" has become the equivalent of everything that men do and are, or are supposed to do and to be like; similarly, "femininity" has come to mean everything that women do or are like (17:33).

Helmrich and Spence (17) have identified four interrelated but separable phenomena that help explain further the concepts of "masculinity" and "femininity." These phenomena are biological gender,

masculine and feminine sex-role behavior, masculinity and femininity in the personal attributes of the individual, and sexual orientation. Of primary concern to this research will be the phenomena concerning biological gender and masculine and feminine sex-role behavior.

Biological Gender

The biological gender of an individual is an automatic method of determining whether an individual is going to be a male or female. Our society, however, has gone a step further by assigning elaborate sex-role differentiations to each new born. Legal rights and obligations, ways of dressing, formal and informal rules of behavior governing the interaction between sexes, and independent sets of responsibilities are a few examples of a way of setting the sexes apart in our society. Sociologists call this "normative expectations" about the behavior that men and women ought and can be anticipated to exhibit (17:34).

Many researchers have disputed this concept and have tried to establish biological reasons for differences in genders. However, Money and Tucker summarize well the idea that more than nature is involved in establishing gender identities when they conclude:

Because gender identity differentiates before a child can talk about it, the assumption has been that it is inborn. But it is not. You were born with something that was ready to become your gender identity. You were wired but not programmed for gender in the same sense that you were wired but not programmed for language (32:102).

The debate as to whether nature or nurture is primarily responsible for the way human behavior is, will continue, perhaps forever. It is clear that socialization processes help explain many differences in human behavior that biological differences between the sexes cannot justify.

Masculine and Feminine Sex-Role Behavior

The literature is full of characterizations as to what men and women are like. Females are described as dependent, emotional, non-competitive, non-aggressive, passive, and concerned with being loved and loving others (17) (18) (20) (36). Males, on the other hand, are depicted as active, independent, rational, unemotional, aggressive, and courageous (17) (18) (20) (36).

Kagan (23) has listed three characteristics that may define the concepts male and female: (1) physical attributes, (2) overt behaviors, (3) feelings, motives, attitudes, and beliefs. Under physical attributes, Kagan points to studies of preadolescent and adolescent youngsters that reveal that American girls should be pretty and small, while boys are to be large and strong. It appears that for a girl of eight to ten years of age, the primary sex-typed attribute is an attractive face. For a boy, a tall, muscular physique is most important (23).

Concerning overt behaviors, evidence indicates that the norm requires inhibition of verbal and physical aggression among girls and women (23). However, boys and men are given license to express aggression when attacked, threatened, or dominated by another male. Finally, girls are allowed freedom to express dependency, passivity, and conformity, whereas boys and men are pressured to inhibit them.

Brown (2) gives evidence, as mentioned in another section, that there appears to be a masculine role preference for both boys and girls. He gives anatomical differences, sociocultural advantages, and greater latitude for masculine status as reasons for this preference. He states that our culture is masculine-centered and oriented. He continues by saying, "Masculine status is so superior to feminine status that many

girls are not discouraged from striving to attain the former" (2:235). On the other hand, boys do not have the same freedom of choice as girls when it comes to sex-typed objects and activities.

This idea that our culture is masculine-centered and oriented can be seen in the research by Mary Duquin (11) concerning physical activity. She points out that children are 13 times more likely to see a vigorously active man than a vigorously active woman. By vigorously active, Duquin means seeing pictures of or men doing such activities as running, climbing, playing in sporting events, being a firefighter, or doing work which requires physical exertion such as farming. She also points out that there is a 3.5 to 1 ratio of seeing vigorously active boys compared to girls.

Physical activity and sport are areas where the socialization process and stereotyping seem to have special meaning for each sex. Each sex seems to be given a role to play in physical activity and sport. As mentioned above, it seems that the males of our society are portrayed as the active people and females, at times, are encouraged to follow the male role. The empirical evidence shows that although women may have more freedom than men to cross "sex-role expectation boundaries," our socialization process often makes this crossover very difficult for either sex.

It appears that children learn sex-role definitions of achievement areas by early elementary school. When asked to label different skills, either masculine or feminine, children from grades second through twelfth considered social, verbal, and artistic skills feminine and mechanical, spatial, and athletic skills masculine (41). Specifically, in sport and athletics, evidence shows that during childhood years, ages

5 to 12, peers and family are the most important predictors of active participation in sport. During adolescence, peers and teacher-coaches are the most important predictors of active sport involvement. In both cases, however, peer influence is the greatest factor as to whether girls or boys participate in sport (16). In examining the influence of socializing agents on the process of socialization of women into sport, Greendorfer (16) concludes that male models were more important in the female sport socialization process than female models.

Lewko and Selby (40) measured grade school children's attitudes toward female involvement in sports and their relationship with participation, sex, and grade levels. They found that girls have more favorable attitudes toward female participation in sports than boys in each grade from third to ninth. They conclude that boys may view female sport participation as a less important activity for females than males.

When examining sex-role attitudes of women in competition, there is a significant link between women's sex-role attitudes and their performance. In this study, Peplau (35) found that women with traditional attitudes (competition most important for men and boys) do better in non-competitive situations or in team competition. Those women that have more liberal attitudes do better in individual competition. Also, girls feel and function relatively poor when the task is presented as an important ability measure (34).

When the sex of the subject and the sex of the task were compared, males were seen to do well on both male and female tasks, while women may only do well on female tasks (9). House (21), in examining sex-role expectations as a function of competition, found that females in a competitive situation reported lower performance expectancies,

confidence, and minimum goal levels than those females working alone or males in a competitive situation. Also, House found that regardless of competition, both males and females perceived males as reporting higher performance expectancies, confidence, and minimum goal levels than females.

The effects of sex-role in a two-person mixed-motive game showed that female dyads were consistently less competitive on the average than male dyads (28). When the dyads were mixed, there was significantly less competitiveness than like-sex dyads. Finally, Brawley and Landers (1) found that males desired to win a competitive situation significantly more than females.

This evidence shows that while women may not be discouraged in seeking the more preferred masculine status, they do not view their sex-role as being the same as men, nor do they expect to be like men. A possible explanation for this has been presented by Horner and her "fear of success" in competitive situations. Basically, Horner (41) found that college women manifested a fear of doing well against men in a competitive situation. This could account for the evidence that says women feel sport is a highly acceptable activity for females yet do not have as high expectancies toward performance as males. Thus our socialization process has allowed the generalized sex-role stereotype that females are less competent than males.

Therefore, in sport and physical activity, there appears to be certain sex-role expectations for both boys and girls and many of these have been promoted through various socialization processes. Thus, if each sex is expected to perform certain roles, will they differentiate between different activities as being proper for each sex as well? The

next section will examine research in the area of sex-typing of motor activities.

SEX-TYPING OF GAMES AND MOTOR ACTIVITIES

Game Preferences of Children

Children's game preferences should help provide some light into the relationship between sex-role expectations and movement behavior. The choices of games in which children wish to participate should to some extent reflect the learning of sex-role behaviors.

In 1930, Foster (15) studied the play activities of children in grades one through six. At this time, she found that boys showed more interest than girls in certain games such as catching-throwing games, while girls had more interest in jumping-hopping games. Checkers and Hide the Thimble stood out as the greatest favorites of all games. The boys generally preferred Checkers, while the girls preferred Hide the Thimble.

Sutton-Smith and Rosenberg (44) investigated whether certain games belonged to girls and others belonged to boys. They also wanted to see if over a period of time the differences between children's game preferences remained clear-cut and unchanged. They studied data gathered in 1896 in Worcester, Massachusetts on 1,929 children between the ages of six and eight, in 1898 in South Carolina on 8,718 children between the ages of 6 and 18, in 1921 in the Bay Area of California on 474 children between the ages of 6 and 17, and in 1959 in Ohio on 2,689 children between the ages of 9 and 15. A wide variety of games were included in these studies. Examples of such games include Tag, Marbles, Cards, Simon Says, Jacks, Jump Rope, Baseball, and Football. Among

their findings, Sutton-Smith and Rosenberg identified a trend of increasing similarity between the sexes. They concluded that girls' play preferences were increasingly becoming more like the boys'. The boys' play roles, on the other hand, had become increasingly circumscribed. The boys had greatly reduced the range of games to which they would devote their time. Also, the boys appeared to be steadily lowering their preferences for games that had anything to do with girls' play. This tends to contribute to clear-cut role definitions of appropriate boys' behavior.

The 1959 Ohio study was done by Sutton-Smith and Rosenberg. They compared male and female differences in game play activities of fourth, fifth, and sixth grade children and found that on their checklist, 18 items differentiated boys from girls and 40 items differentiated girls from boys (38). This study helped confirm the belief that girls were showing greater interest in male activities and an increasing masculinity of the feminine self-concept.

Walker (45) used a form similar to Rosenberg and Sutton-Smith's checklist. The children, 205 boys and 214 girls in grades three through six, were asked to indicate like or dislike for each game played in the list. His findings seemed to indicate a maturity factor between his subjects and those of Rosenberg and Sutton-Smith. However, his general findings supported Rosenberg and Sutton-Smith.

Sutton-Smith, Rosenberg, and Morgan (42) administered a play inventory of 180 items to 1,900 children in grades three through six which contained items identified by their earlier research as being masculine or feminine. The results indicated that girls were more responsive to items on the inventory than boys and showed an increasing interest in masculine items throughout these grades.

Progressively, Sutton-Smith (43) wanted to determine the relationship between children's responses to play inventories and their actual free play behavior. Two studies were made involving 50 children divided as to sex and distributed throughout grades one to six. The children were rated for their competence and participation in masculine and feminine free-play activities. The first study involved a play scale of formal games and mature items and showed a consistent relation between girls' play preferences and their free-play participation and competence. Boys did not show such a relationship (43:74). The second study involved many informal plays as well as games and more immature items. Masculine and feminine responses were scored separately. Results indicated that high responding girls tended to be more intelligent and more masculine in their free-play behaviors, and high responding boys tended to be younger and more feminine in their free-play behaviors (43:74).

The work of Sutton-Smith, his associates, and others indicates that there are indeed many differences between the sexes in what children say they like to play, and what games they in fact play. All agree, however, that girls seem to be increasingly interested in so-called boy activities, while boys are narrowing their scope of participation.

Sex-Appropriateness

Game preferences have helped researchers generalize about what children like and in what direction their likings have developed through the years. In conjunction with game preference research, another area of research has been studied to help explain the outcomes of our society's socialization processes. This area deals with the sex-appropriateness of different games and activities. Researchers have

tried to determine if one sex is more likely to sex-type activities than the other.

Raymond and her associates (37) tried to determine if different age groups and sexes were more likely to stereotype values in our society. Two hundred forty male and female elementary school children, college students, and adults were asked to rank the values they believed existed for males and females in our society. The Rokeach Value Scale was used. They found that the three age groups did not differ in their degree of stereotyping. They also found that between the sexes, both men and women responded stereotypically for two values. Therefore, neither demonstrated to be more or less likely to stereotype values.

Brown's It Scale for Children has been widely used in examining sex-role preference in children. Fling and Manosevitz (14) investigated different components of sex-typing in children's play interests and selected social learning concepts of sex-role development. The children, 32 four-year-olds, were given an "imaginary It" and a "you" version of the It Scale for Children. The researchers wanted to measure the sex-role orientation, preference, and adoption of the children. On all three measures, boys and girls differed in direction but not in degree of sex-typing. It was reported that boys were not significantly more sex-typed than girls. This finding was in conflict of earlier research that reported that boys are more sex-typed than girls (14:151). There was some evidence that different components of sex-typing were being tapped. When making choices for an "imaginary It," children seemed to be more free to express an "orientation" toward the opposite sex-role. However, when choosing for themselves, they more often expressed a "preference" to conform to sex-role norms (14:151). Finally, Fling and

Manosevitz got parental responses on a modified It test and interview. They found that parents seem to exert more pressure toward boys' sex-typing.

Fauls (13) exposed five-year-olds of both sexes to a series of paired pictures depicting sex-appropriate and sex-inappropriate activity. She wanted both their personal preferences and their beliefs about activity that their mothers and fathers would prefer. She found that boys chose "masculine" activities more often than girls. Also, both sexes indicated that the parents preferred the activities appropriate to each child's sex more than sex-inappropriate activities.

Fauls's study of five-year-olds was reported in 1956. In 1974, Montemayor (33) had children six to eight years old play a game which was labeled either sex-appropriate, sex-neutral, or sex-inappropriate. He obtained measures of performance or attractiveness of the game. For both boys and girls, performance was highest when the game was labeled sex-appropriate, intermediate when no sex level was given for the game, and lowest when the game was labeled sex-inappropriate (33:155). When attractiveness was examined, the neutral and appropriate label conditions were similar and both were higher than the inappropriate condition for both sexes.

Montemayor (33) concluded that girls choose both male and female objects equally, while boys choose male objects and reject female objects. But when asked to perform in an activity that is labeled sex-appropriate or sex-inappropriate, both boys and girls perform consistent with their own sex.

Herkowitz (19) studied the perceptions of both sexes over a wide age range to determine how stereotyping occurs with regard to motor

activities and games. She had 360 students divided into six age-grade categories of 30 females and 30 males each. The age-grade groups were four- and five-year-olds, second graders, fifth graders, eighth graders, eleventh graders, and sophomore students at Ohio State University. Herkowitz selected activities associated with physical education, recreation, and industrial arts programs. Thirty-five activities were presented in stick figure drawings on 35 mm slides. After viewing a slide, the subjects were asked to indicate whether the physical activity being performed was a girl activity, boy activity, or a boy-girl activity (19:4).

Herkowitz (19:8) reports that the majority of the activities were perceived as boy-girl activity. This tendency to perceive activities as appropriate for both sexes was stronger for female than for male students. Of the seven most strongly sex-typed activities, only one was sex-typed as a girl activity, while six were sex-typed as boy activities. Without exception, when sex differences did exist, they seemed the result of girls' tendencies to select boy-girl activity and girl activity categories more frequently than did boys.

When age differences were examined, the majority of significant differences for males appeared to be the result of preschoolers' more frequent selection of the boy activity category than was the case for older males. For the girls, three tendencies helped explain significant differences. Preschool girls chose the boy-girl activity category far less frequently than did older females. Preschool girls tended to select the girl activity category more frequently than did older females, and finally, eighth grade girls labeled activities boy-girl more frequently than older and younger girls.

From Herkowitz's study, five main points are brought out (19:10-11):

1. There was a tendency to perceive motor activities as appropriate for both sexes.
2. Disagreements between the sexes in typing occurred less frequently with increasing age.
3. There were differences among age groups within sex groups.
4. The ordering of activities from most to least strongly sex-typed may provide future investigators with a comparison measure that may be of use in future decades.
5. The finding that the most strongly sex-typed activities were perceived as boy activities tends to support the conclusion that physical activity is still perceived as predominantly a male domain. Herkowitz concludes that those activities where a decided element of force production is involved helps to justify her fifth point.

COMPETITION BETWEEN THE SEXES

Little research has been done concerning competition between the sexes. However, many generalizations concerning the sex-role or sex-identity learning process have come to be accepted as truths.

One common quote that has lingered for years in our society is, "Females in our culture are taught that competition, particularly with a male, is unfeminine and may result in social rejection" (41:350). In fact, there is a debate raging among educators as to whether boys and girls should compete against each other in any physical activity. Michener (29), writing in Sports in America, discusses the idea that males and females can participate and compete together in sports during

childhood (ages 6-11) and in adult life. However, he argues, as many others do, that females should not compete head-on with boys from ages 12 through 22 (29:126). While some have said that in a dozen years there will be a new type of male and female, Michener takes exception stating, "I doubt that environment and altered social customs can achieve such a modification" (29:130).

Research by the Russian Lysenko (29) has provided evidence that the environment was more determinative than heredity in influencing behavior. With this in mind, Michener still feels that:

The traditional athletic separation of boys and girls during the ages of 12 through 22 conforms to some permanent psychological need of the human race and that to reverse the custom might produce more harm than good (29:130).

This permanent psychological need that Michener refers to is another generalization that seems to be accepted as truth. The notion is that if males compare unfavorably to a female, males will be more "aroused" or "threatened" than if they compare unfavorably with another male (41). As stated earlier, little research has been done concerning competition between the sexes, just as little research has been done to see what competition does within the sexes. Thus, many generalizations have lingered without sufficient evidence to uphold these ideas.

Research has been done on what males and females are like in a competitive situation and what can be expected of either males or females under a given chance or skill condition. This area of research will be briefly discussed here.

The research of Deaux and Enswiller (9:80) suggests that, "What is skill for a male is luck for the female." Given a set of tasks, their subjects were asked to rate each task on a scale labeled females at one end and males at the other end. The tasks were

clearly differentiated on a female-male dimension. It was reported that males were seen to do well on either male or female tasks, while women may only do well on female tasks. This implies that women could not do well on male tasks, but if they did, luck must have been involved.

McClintock and Moskowitz (27) required children between five and eight and one-half years old to indicate a preference for one of two own-other outcome combinations in three settings. The settings were an individualistic one with no strategy requirement for a particular choice, a conflictual setting where competitive choices were required, and finally, a coordinate setting where cooperative choices were required. The researchers observed that boys were more competitive than girls in the individualistic and conflictual settings, although this was only of small significance. Also, the frequency of competitive choices did not increase with age in the conflictual setting.

The work of Rotter, Liverant, and Crowne (39) has helped in the area of skill and chance tasks and the expectancy changes with various outcomes. A typical shift is based on the notion that in predicting the likelihood of winning at a skill-determined task, any given outcome is likely to be consistent with the outcome which occurred just before it. A win should follow a win, and loss should follow a loss. This idea comes from the perception that skill is stable and that one outcome is a good predictor of what will happen in subsequent events. This leads to typical expectancy shifts. That is, increases of expectancy of winning will follow a rewarded trial and decreases in expectancy of winning after non-rewarded trials. Typical expectancy shifts should be less frequent in chance-determined tasks than in skill tasks.

Finally, Masterson (26) assumed this basic prediction and found

that skill was significantly higher than chance on one kind of typical shift, this shift being the proportion of expectancy decreases following losses. Masterson's study involved 145 undergraduate women between the ages of 16 and 23. Similar findings have been done with men subjects.

SUMMARY

There can be no question that the study of male and female sex-roles and sex differences plays an important role in helping to better understand each sex. Research has contributed greatly to this continuing understanding of males and females. In studying sex differences through research, it has been found that children grow in height and weight at a relatively constant rate, although boys as a group are taller and heavier in adulthood. Boy-girl differences occur at most ages on motor performance, but size and direction of differences vary with age and task. Finally, girls appear to have verbal superiority over males, but on virtually every measure boys sooner or later do better.

Sex differences have been explained through a variety of mediums. Biological or heredity traits (nature) are powerful in explaining many important sex differences. Perhaps just as powerful are the socialization theories that must be considered in our everyday lives. Mischel's social learning model is of significant importance to this research. Mischel defines sex-typed behaviors and helps explain how the sex-typing process occurs.

Along with the development of sex differences goes the sex-role expectations that our society has placed on both males and females. Masculinity and femininity are widely used terms to describe our sex-role expectations. Important concepts have surfaced that help define

role expectations for each sex. It is felt that our culture is masculine-centered and that females seem to have more freedom than men in choosing their roles. Parents, peers, and others are somewhat responsible for determining each child's role behaviors.

Game preference research has provided considerable insight into the relationship between sex-role expectations and movement behavior. Boys seem to be narrowing their game choices, while girls continue to become increasingly interested in boys' activities. An equally important area of research shows that there was a tendency to perceive motor activities as appropriate for either sex by both sexes. However, since most sex-typed activities were perceived as boy activities, this seems to support the idea that physical activity is still perceived as the male domain.

Finally, although competition between the sexes research is almost unheard of, some generalizations seem significant. Boys are perceived to be more competitive than girls and that girls are less competent. Therefore, it is apparent that more research is needed to help determine how behavior among the sexes is acquired. Sex differences do exist and are documented. Also, generalizations about the sexes exist that are not documented. It is the intent of this researcher to document or clear up information concerning possible age and sex differences that may or may not exist with regard to children when typing motor activities in a competitive situation.

Chapter 3

PROCEDURES

The purpose of this study was to determine if sex and age group differences existed when elementary school children classified or sex-typed three different motor activities. The study hoped to determine how children typed activities as important for each sex in a competitive situation. Also, the study hoped to determine how children perceived these activities for personal status and personal enjoyment as well as who was perceived to have the greater ability in these activities.

SELECTION OF SUBJECTS

All fourth, fifth, and sixth grade students at Seven Dolors Elementary School in Manhattan, Kansas were invited to participate in this research. The children were asked to take home a consent form to their parents (see Appendix A). This form included a brief statement explaining the proposed research and included a permission slip to be signed by the parents if both they and their child agreed to participate in the study. Forty-eight positive permission slips were returned to the researchers. Twenty boys and 28 girls returned such slips. Because this study was in conjunction with another study and an even number of boys and girls were desirable for the second study, eight girls were randomly selected out of the study by assigning each girl a number and using a table of random numbers to eliminate them.

Forty fourth, fifth, and sixth grade boys ($N = 20$) and girls

(N = 20) were the subjects of this study. The breakdown of subjects by grades included four boys and four girls in the fourth grade, eight boys and eight girls in the fifth grade, and eight boys and eight girls in the sixth grade.

QUESTIONNAIRE

The questionnaire used for this study can be found in Appendix B. This questionnaire was designed by this researcher. Children were given three different types of motor activities from which to choose. In each activity, a boy and a girl were competing against each other. This researcher wanted to determine how children typed the activity importance, the personal status, the personal enjoyment, and the ability status for their sex and grade level.

Questions one through four were constructed to find out what activities children perceived to be the most important and least important for each sex group. Question five was designed to determine which activity each child felt was most important to him/her personally. Question six addressed the topic of personal enjoyment. It was constructed to find out which of the three activities children would most prefer to play in a competitive situation with the opposite sex. Question seven was to determine the least preferred activity to play against the opposite sex. Questions eight, nine, and ten were designed to determine whether boys or girls were perceived by the subjects as having greater ability in each of the three motor activities.

DATA COLLECTION

A two-minute videotape film was shown to the subjects. This

film depicted three different types of motor activity. In each case, a boy and a girl were shown competing against each other. The first type of motor activity shown was called the "Balance Game." This game represented the fine-large motor activity. It was chosen because many of the large muscles of the body can be used in this activity, but the force generated by the muscles is small so that fine, quick body adjustments can be made. This game required the boy and girl to use their entire body to maintain their balance on a board much like a teeter totter. Each opponent was on their own balance board and competed simultaneously. The object of the game, as described in the film, was to see who could balance for the longest amount of time. Being in balance meant that the balance board was not touching the base of the platform at either end. Figure 1 is a picture of the balance board.

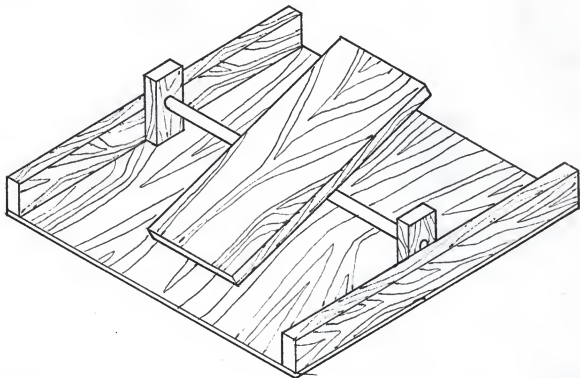


Figure 1

Balance Board

The second activity shown was called the "Pong Game." This game was one variation of the TV pong games available to the public. This game represented the fine motor activity. It was chosen for this activity because it requires concentration with the eyes and quickness with the hands and fingers. Therefore, only small, quick muscle action is required for this activity. The film described the game in the terms previously stated. The game was played by turning a knob with the fingers to control a pong paddle on the TV screen. Each opponent had his/her own control paddle. The object of the game, as described in the film, was to see who could score the most points. Figure 2 illustrates the "Pong Game."

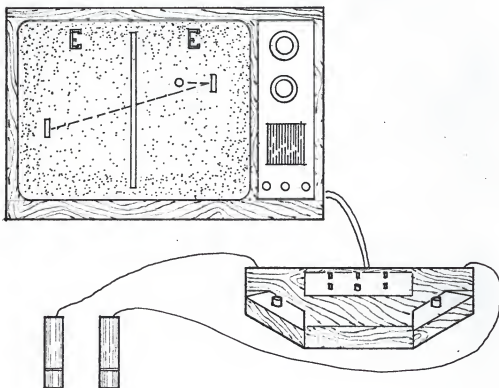


Figure 2

Pong Game

The third activity was the "Bicycle Game." This game represented the large motor activity. The game required powerful leg movements, strong muscles, and speed. Thus, the force generated by the big muscles was near maximum. The game was described in the film in these terms and was played by the boy and the girl riding or pedaling bicycle ergometers as fast as they could. The object of the game, as described in the film, was to see who could ride the farthest distance. Figure 3 shows the bicycle ergometer.

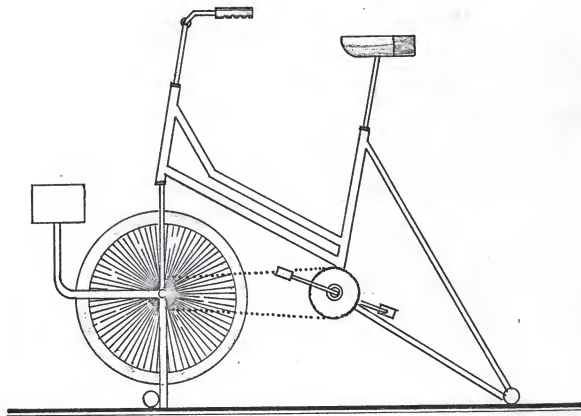


Figure 3

Bicycle Ergometer

Before showing the film, the subjects were instructed that the film was to be shown twice. Also, they were asked to pay careful attention to the film and concentrate on what they heard and saw in the film. They were then told that they would be asked some questions following the film.

The film was shown on two TV monitors so that all of the subjects were assured of being able to adequately hear and see the film. The film was shown to all of the fourth graders during their physical education class. The fifth and sixth grade classes were treated the same.

After the film was shown twice to the students, they were each given an answer sheet (see Appendix C) and a pencil by the testers. The testers were two males. All of the students were allowed to answer the questions. However, if any felt that they should not answer the questions because they had returned an "I will not participate" slip or had not returned any slip, they were asked not to put their names on the answer form. Those who were participating in the study were asked to make sure they had printed their names on the answer form. Each subject was then assigned a number so that their rights were protected, and only a number was used to identify each subject.

The questionnaire was read to the subjects by one of the testers. The instructions asked that each student think about the film just seen and stressed that there was no right or wrong answer to the questions. The subjects were encouraged to check whatever they thought was the best answer. If the students had any questions, one of the two testers helped the student individually.

Upon completion of the questions, the forms were picked up and

the children were informed that some of them might be asked to play the games in the film at a later time. Because this study was to be followed immediately by another study, subjects were not informed about what it was that the testers were actually doing. This information was discussed immediately following the second study.

PRODUCTION OF AUDIOVISUAL MATERIALS

The videotape used in the study was produced by this investigator. A fifth grade boy and a fifth grade girl were used as the competitors in the film. The tape was filmed in the Health, Physical Education, and Recreation Motor Development Laboratory at Kansas State University. A Sony videotape machine and camera were used in the filming.

Each segment of the film was recorded separately. A sign identifying each game preceded the two competitors in action. The first scene focused in on the boy and girl standing side-by-side. This was done so that viewers could identify each competitor and to show that both were of about the same age.

The second segment dealt with the "Balance Game." The competitors were filmed as they each stood on the balance boards specially constructed for this research. Each tried to keep their board from touching the base. A scoreboard was in the background, but no score was being kept.

The third segment was the "Pong Game." The competitors were shown seated in front of a TV monitor playing the "Pong Game." Particular attention was given to the hand and finger movements of each subject. The score of the game was not visible on the film; therefore, it was difficult for anyone to determine who was winning or who was better.

The fourth segment showed the boy and girl facing the camera and pedaling bicycle ergometers. Both were pedaling very rapidly. Again a scoreboard was visible in the background to simulate a real race, but no score was being kept.

Finally, a sign similar to the answer sheet was shown. This was done so that the three games could be reviewed and so that the subjects would become familiar with the answer form that followed.

This investigator then went to the Kansas State University Media Center to connect each segment so that it was a continuous film. This was done by transferring each segment onto another tape in the order they were to occur. After the visual part of the film was completed, the audio was dubbed in by this investigator. This was accomplished by speaking into a recorder as the film was being played. Finally, a two-monitor set-up was arranged so that the tape could be shown on both monitors at once. The script or audio portion of the film can be found in Appendix D.

DESIGN AND STATISTICS

All of the data collected for this study was transferred onto the data sheet shown in Appendix E. Contingency tables were established for the 11 objectives of this study. The first ten objectives were analyzed by sex and by grade level. The eleventh objective analyzed girls, boys, and total responses of subjects. The chi-square test of independence was performed on all contingency tables. Also, objectives one through ten were tested by the one-sample chi-square test. All chi-square values were to be judged significant at the .05 level of significance.

Chapter 4

RESULTS

The selection of subjects and administration of testing was carried out in accordance with the procedures discussed in Chapter 3. Data obtained were analyzed by use of 2x2, 2x3, and 3x3 contingency tables. The chi-square test of independence was used to determine if significant differences existed between each sex group and grade level on responses to 11 questions regarding motor activity.

Specific Objective One

The first specific objective of this study was to determine which of the three activities was typed as most important for girls to win in a competitive situation. To arrive at this objective, the following question was asked of each subject: "Of the three games in the film, which do you think is the most important for girls to win?" The analysis of data for subjects of different sexes is presented in Table 1.

Table 1
Typing of Activity Importance for Girls
by Sex Groups

Activity	Boys	Girls	Row Totals
BALANCE GAME			
f	13	11	24
Row %	54.2	45.8	
Col. %	65.0	55.0	
Total %	32.5	27.5	60.0
PONG GAME			
f	4	3	7
Row %	57.1	42.9	
Col. %	20.0	15.0	
Total %	10.0	7.5	17.5
BICYCLE GAME			
f	3	6	9
Row %	33.3	66.7	
Col. %	15.0	30.0	
Total %	7.5	15.0	22.5
COLUMN TOTALS			
f	20	20	40
%	50.0	50.0	100.0

The chi-square value of 1.31 for the test of independence was not significant at the .05 level. Girls and boys did not differ in

their typings of the activity perceived to be most important for girls to win in a competitive situation.

Table 2 includes activity typings for both male and female subjects within different grade levels.

Table 2
Typing of Activity Importance for Girls
Within Grade Levels

Activity	Fourth Grade	Fifth Grade	Sixth Grade	Row Totals
BALANCE GAME				
f	4	10	10	24
Row %	16.7	41.7	41.7	
Col. %	50.0	62.5	62.5	
Total %	10.0	25.0	25.0	60.0
PONG GAME				
f	2	2	3	7
Row %	28.6	28.6	42.9	
Col. %	25.0	12.5	18.8	
Total %	5.0	5.0	7.5	17.5
BICYCLE GAME				
f	2	4	3	9
Row %	22.2	44.4	33.3	
Col. %	25.0	25.0	18.8	
Total %	5.0	10.0	7.5	22.5
COLUMN TOTALS				
f	8	16	16	40
%	20.0	40.0	40.0	100.0

The chi-square value of 0.83 was not significant at the .05 level. There was no difference in typing between the grade levels concerning the activity typed as most important for girls to win.

A one-sample chi-square test was performed on the row totals of Tables 1 and 2 to determine if actual activity choices were different from chance distributions. A chi-square value of 12.95 was significant at the .05 level. The observed frequency deviates significantly from a hypothesized frequency distribution. This shows that although there were no sex or grade level differences for "typings of activity importance for girls," there was a motor activity that both boys and girls in all age groups typed as important for girls to win. This activity, the "Balance Game," was the fine-large motor activity. Boys and girls both felt that the fine-large motor activity was most important for girls to win.

Specific Objective Two

The second specific objective of this study was to determine which of the three activities was typed as most important for boys to win in a competitive situation. The question, "Of the three games in the film, which do you think is the most important for boys to win?" was used to determine the second specific objective. The typings of activities which are important for boys to win by sex groups are presented in Table 3.

Table 3
Typing of Activity Importance for Boys
by Sex Groups

Activity	Boys	Girls	Row Totals
BALANCE GAME			
f	2	6	8
Row %	25.0	75.0	
Col. %	10.0	30.0	
Total %	5.0	15.0	20.0
PONG GAME			
f	3	2	5
Row %	60.0	40.0	
Col. %	15.0	10.0	
Total %	7.5	5.0	12.5
BICYCLE GAME			
f	15	12	27
Row %	55.6	44.4	
Col. %	75.0	60.0	
Total %	37.5	30.0	67.5
COLUMN TOTALS			
f	20	20	40
%	50.0	50.0	100.0

The chi-square value of 2.53 was not significant at the .05 level. There was no difference in what boys and girls typed as important for boys to win.

Table 4 represents the grade level typings for all subjects, including boys and girls.

Table 4
Typing of Activity Importance for Boys
Within Grade Levels

Activity	Fourth Grade	Fifth Grade	Sixth Grade	Row Totals
BALANCE GAME				
f	2	4	2	8
Row %	25.0	50.0	25.0	
Col. %	25.0	25.0	12.5	
Total %	5.0	10.0	5.0	20.0
PONG GAME				
f	2	3	0	5
Row %	40.0	60.0	0.0	
Col. %	25.0	18.8	0.0	
Total %	5.0	7.5	0.0	12.5
BICYCLE GAME				
f	4	9	14	27
Row %	14.8	33.3	51.9	
Col. %	50.0	56.3	87.5	
Total %	10.0	22.5	35.0	67.5
COLUMN TOTALS				
f	8	16	16	40
%	20.0	40.0	40.0	100.0

The chi-square value was 5.86. This was not significant at the .05 level. Children of different grade levels did not significantly

differ on what was perceived as the most important activity for boys to win.

A one-sample chi-square test on the row totals of Tables 3 and 4 was 21.35. This was significant at the .05 level. This demonstrated that although boys and girls did not differ and grade levels did not differ in what they typed as important for boys to win, they did agree on what was important for boys to win. In this case, the large motor activity, the "Bicycle Game," was clearly typed as a boys' activity by all, regardless of sex. Thus, these data suggest that there are activities which are typed as important for a specific sex group, in this case for boys.

Specific Objective Three

The third specific objective of this study was to determine which of the three activities was typed as least important for girls to win in a competitive situation. "Of the three games in the film, which do you think is the least important for girls to win?" was asked of the subjects to help determine the third objective.

Table 5
Typing of Least Important Activity for Girls
by Sex Groups

Activity	Boys	Girls	Row Totals
BALANCE GAME			
f	2	2	4
Row %	50.0	50.0	
Col. %	10.0	10.0	
Total %	5.0	5.0	10.0
PONG GAME			
f	15	13	28
Row %	53.6	46.4	
Col. %	75.0	65.0	
Total %	37.5	32.5	70.0
BICYCLE GAME			
f	3	5	8
Row %	37.5	62.5	
Col. %	15.0	25.0	
Total %	7.5	12.5	20.0
COLUMN TOTALS			
f	20	20	40
%	50.0	50.0	100.0

The chi-square value of 0.64 was not significant at the .05 level. The sexes did not differ on what they perceived to be least important for girls to win in a competitive situation.

Grade level choices are presented in Table 6.

Table 6
Typing of Least Important Activity for Girls
Within Grade Levels

Activity	Fourth Grade	Fifth Grade	Sixth Grade	Row Totals
BALANCE GAME				
f	2	2	0	4
Row %	50.0	50.0	0.0	
Col. %	25.0	12.5	0.0	
Total %	5.0	5.0	0.0	10.0
PONG GAME				
f	5	11	12	28
Row %	17.9	39.3	42.9	
Col. %	62.5	68.8	75.0	
Total %	12.5	27.5	30.0	70.0
BICYCLE GAME				
f	1	3	4	8
Row %	12.5	37.5	50.0	
Col. %	12.5	18.8	25.0	
Total %	2.5	7.5	10.0	20.0
COLUMN TOTALS				
f	8	16	16	40.0
%	20.0	40.0	40.0	100.0

A chi-square of 4.06 was obtained when comparing activity choices by grade levels. This was not significant at the .05 level. The grade levels did not differ in what they typed as a least

important activity for girls to win in a competitive situation.

A one-sample chi-square test for row totals of Tables 5 and 6 yielded a value of 24.80. This was significant at the .05 level and indicated that certain activities were perceived as least important for girls to win. Both sexes and each grade level agreed that the "Pong Game," the fine motor activity, was least important for girls to win in a competitive situation.

Specific Objective Four

The fourth specific objective was to determine which of the three activities was typed as least important for boys to win in a competitive situation. To meet this objective, the subjects were asked, "Of the three games in the film, which do you think is the least important for boys to win?" The data are presented in Table 7.

Table 7
Typing of Least Important Activity for Boys
by Sex Groups

Activity	Boys	Girls	Row Totals
BALANCE GAME			
f	8	9	17
Row %	47.1	52.9	
Col. %	40.0	45.0	
Total %	20.0	22.5	42.5
PONG GAME			
f	11	11	22
Row %	50.0	50.0	
Col. %	55.0	55.0	
Total %	27.5	27.5	55.0
BICYCLE GAME			
f	1	0	1
Row %	100.0	0.0	
Col. %	5.0	0.0	
Total %	2.5	0.0	2.5
COLUMN TOTALS			
f	20	20	40
%	50.0	50.0	100.0

The chi-square value of 1.06 was obtained and was not significant at the .05 level. The sexes did not differ on what activities they perceived to be least important for boys to win in a competitive situation.

The grade level data are presented in Table 8.

Table 8
Typing of Least Important Activity for Boys
Within Grade Levels

Activity	Fourth Grade	Fifth Grade	Sixth Grade	Row Totals
BALANCE GAME				
f	5	7	5	17
Row %	29.4	41.2	29.4	
Col. %	62.5	45.8	31.3	
Total %	12.5	17.5	12.5	42.5
PONG GAME				
f	2	9	11	22
Row %	9.1	40.9	50.0	
Col. %	25.0	56.3	68.8	
Total %	5.0	22.5	27.5	55.0
BICYCLE GAME				
f	1	0	0	1
Row %	100.0	0.0	0.0	
Col. %	12.5	0.0	0.0	
Total %	2.5	0.0	0.0	2.5
COLUMN TOTALS				
f	8	16	16	40
%	20.0	40.0	40.0	100.0

A chi-square value of 7.10 was not significant at the .05 level. The grade levels did not differ in the activity they chose as least important for boys to win.

A one-sample chi-square test of the row totals for Tables 7 and 8 yielded a chi-square value of 18.051, which was significant at the .05 level. All grade levels and both sexes agreed that the "Pong Game," chosen by 55 percent of the subjects, was the least important activity for boys to win in a competitive situation.

Specific Objective Five

The fifth objective of the study was to determine which of the three activities was perceived as most important for personal status by winning in a competitive situation. The subjects were asked, "If you were the person in the film, which of the three games would be most important for you to win?" The data for subjects of different sexes are presented in Table 9.

Table 9
Typing of Activities for Personal Status
by Sex Groups

Activity	Boys	Girls	Row Totals
BALANCE GAME			
f	3	5	8
Row %	37.5	62.5	
Col. %	15.0	25.0	
Total %	7.5	12.5	20.0
PONG GAME			
f	4	4	8
Row %	50.0	50.0	
Col. %	20.0	20.0	
Total %	10.0	10.0	20.0
BICYCLE GAME			
f	13	11	24
Row %	54.2	45.8	
Col. %	65.0	55.0	
Total %	32.5	27.5	60.0
COLUMN TOTALS			
f	20	20	40
%	50.0	50.0	100.0

A chi-square value of 0.67 was not significant at the .05 level. Boys and girls did not differ on what they perceived to be the most important activity to win concerning their own personal status.

The grade level data are presented in Table 10.

Table 10
Typing of Activities for Personal Status
Within Grade Levels

Activity	Fourth Grade	Fifth Grade	Sixth Grade	Row Totals
BALANCE GAME				
f	2	2	4	8
Row %	25.0	25.0	50.0	
Col. %	25.0	12.5	25.0	
Total %	5.0	5.0	10.0	20.0
PONG GAME				
f	2	4	2	8
Row %	25.0	50.0	25.0	
Col. %	25.0	25.0	12.5	
Total %	5.0	10.0	5.0	20.0
BICYCLE GAME				
f	4	10	10	24
Row %	16.7	41.7	41.7	
Col. %	50.0	62.5	62.5	
Total %	10.0	25.0	25.0	60.0
COLUMN TOTALS				
f	8	16	16	40
%	20.0	40.0	40.0	100.0

A chi-square value of 1.67 was not significant at the .05 level. The grade levels did not differ on what activities they chose as most important to win for their own personal status.

A one-sample chi-square test of the row totals for Tables 9 and 10 yielded a chi-square value of 12.80, which was significant at the .05 level. Both sexes and each grade level felt similar about what activities were most important to personal status. In this case, winning the "Bicycle Game" was chosen as most important for personal status. Sixty-five percent of the boys and 55 percent of the girls chose the "Bicycle Game" as most important for their own personal status.

Specific Objective Six

The sixth specific objective in this study was to determine which of the three activities was perceived as most important for personal enjoyment in a competitive situation. The subjects were asked, "Which of the three games would you most like to play?" The data showing the responses of each sex are presented in Table 11.

Table 11
Typing of Activities for Personal Enjoyment
by Sex Groups

Activity	Boys	Girls	Row Totals
BALANCE GAME			
f	1	0	1
Row %	100.0	0.0	
Col. %	5.0	0.0	
Total %	2.5	0.0	2.5
PONG GAME			
f	13	11	24
Row %	54.2	45.8	
Col. %	65.0	55.0	
Total %	32.5	27.5	60.0
BICYCLE GAME			
f	6	9	15
Row %	40.0	60.0	
Col. %	30.0	45.0	
Total %	15.0	22.5	37.5
COLUMN TOTALS			
f	20	20	40
%	50.0	50.0	100.0

A chi-square value of 1.77 was not significant at the .05 level. The sexes did not differ on what activities they felt would be the most enjoyable to play in a competitive situation.

The grade level data are presented in Table 12.

Table 12
Typing of Activities for Personal Enjoyment
Within Grade Levels

Activity	Fourth Grade	Fifth Grade	Sixth Grade	Row Totals
BALANCE GAME				
f	0	1	0	1
Row %	0.0	100.0	0.0	
Col. %	0.0	6.3	0.0	
Total %	0.0	2.5	0.0	2.5
PONG GAME				
f	4	10	10	24
Row %	16.7	41.7	41.7	
Col. %	50.0	62.5	62.5	
Total %	10.0	25.0	25.0	60.0
BICYCLE GAME				
f	4	5	6	15
Row %	26.7	33.3	40.0	
Col. %	50.0	31.3	37.5	
Total %	10.0	12.5	15.0	37.5
COLUMN TOTALS				
f	8	16	16	40
%	20.0	40.0	40.0	100.0

A chi-square value of 2.17 was not significant at the .05 level. The grade levels did not differ in what they would most like to play in a competitive situation.

A one-sample chi-square test of the row totals for Tables 11 and 12 yielded a chi-square value of 20.15. This was significant at the .05 level. Both sexes and each grade level agreed that the "Pong Game," chosen by 60 percent of the subjects, was perceived to be the most enjoyable activity in a competitive situation.

Specific Objective Seven

The seventh specific objective of this study was to determine which of the three activities was perceived as least important for personal enjoyment in a competitive situation. The subjects were asked, "Which of the three games would you least like to play?" The data showing the sex choices are presented in Table 13.

Table 13
 Typing of Activities for Least Enjoyment
 by Sex Groups

Activity	Boys	Girls	Row Totals
BALANCE GAME			
f	13	13	26
Row %	50.0	50.0	
Col. %	65.0	65.0	
Total %	32.5	32.5	65.0
PONG GAME			
f	4	3	7
Row %	57.1	42.9	
Col. %	20.0	15.0	
Total %	10.0	7.5	17.5
BICYCLE GAME			
f	3	4	7
Row %	42.9	57.1	
Col. %	15.0	20.0	
Total %	7.5	10.0	17.5
COLUMN TOTALS			
f	20	20	40
%	50.0	50.0	100.0

A chi-square value of 0.29 was not significant at the .05 level.
 There was no difference between the sexes on what activities they chose

for themselves as least important for personal enjoyment when playing in a competitive situation.

The data for age group comparisons are presented in Table 14.

Table 14
Typing of Activities for Least Enjoyment
Within Grade Levels

Activity	Fourth Grade	Fifth Grade	Sixth Grade	Row Totals
BALANCE GAME				
f	4	8	14	26
Row %	15.4	30.8	53.8	
Col. %	50.0	50.0	87.5	
Total %	10.0	20.0	35.0	65.0
PONG GAME				
f	2	3	2	7
Row %	28.6	42.9	28.6	
Col. %	25.0	18.8	12.5	
Total %	5.0	7.5	5.0	17.5
BICYCLE GAME				
f	2	5	0	7
Row %	28.6	71.4	0.0	
Col. %	25.0	31.3	0.0	
Total %	5.0	12.5	0.0	17.5
COLUMN TOTALS				
f	8	16	16	40
%	20.0	40.0	40.0	100.0

A chi-square value of 7.36 was not significant at the .05 level. The grade levels did not significantly differ in selecting the activity that they felt they would least like to play in a competitive situation.

A one-sample chi-square test of the row totals for Tables 13 and 14 yielded a chi-square value of 18.05. This was significant at the .05 level. It appears that both sexes and each grade level agreed that the "Balance Game" was perceived to be the least desirable activity in which to compete. In fact, 65 percent of the boys and 65 percent of the girls felt that the "Balance Game" would provide the least amount of personal enjoyment.

Specific Objective Eight

The eighth specific objective of this study was to determine whether boys or girls were perceived to have the greater ability when competing in the fine-large motor activity. The subjects were asked, "In the film, who will win the 'Balance Game'?" The data showing the responses of each sex are presented in Table 15.

Table 15
 Typing of Abilities in Fine-Large Motor Activity
 by Sex Groups

Winner	Boys	Girls	Row Totals
BOY			
f	13	8	21
Row %	61.9	38.1	
Col. %	65.0	40.0	
Total %	32.5	20.0	52.5
GIRL			
f	7	12	19
Row %	36.8	63.2	
Col. %	35.0	60.0	
Total %	17.5	30.0	47.5
COLUMN TOTALS			
f	20	20	40
%	50.0	50.0	100.0

A chi-square value of 1.60 was not significant at the .05 level. The sex groups did not differ in their choices of the sex of the perceived winner of the "Balance Game."

The grade level data are presented in Table 16.

Table 16
Typing of Abilities in Fine-Large Motor Activity
Within Grade Levels

Winner	Fourth Grade	Fifth Grade	Sixth Grade	Row Totals
BOY				
f	5	6	10	21
Row %	23.8	28.6	47.6	
Col. %	62.5	37.5	62.5	
Total %	12.5	15.0	25.0	52.5
GIRL				
f	3	10	6	19
Row %	15.8	52.6	31.6	
Col. %	37.5	62.5	37.5	
Total %	7.5	25.0	15.0	47.5
COLUMN TOTALS				
f	8	16	16	40
%	20.0	40.0	40.0	100.0

A chi-square value of 2.40 was not significant at the .05 level. The grade levels did not significantly differ in their choices of whom they thought would win the "Balance Game."

A one-sample chi-square test of the row totals for Tables 15 and 16 yielded a chi-square value of 0.10. This was not significant at the .05 level. Neither the grade levels or the sex groups differed as to whom they thought would win the "Balance Game." Nor did they agree as to whether the boy or the girl would win.

Specific Objective Nine

The ninth specific objective of this study was to determine whether boys or girls were perceived to have the greater ability when competing in the fine motor activity. The subjects were asked, "In the film, who will win the 'Pong Game'?" The data showing the choices of the sex groups are presented in Table 17.

Table 17
Typing of Perceived Winner in Fine Motor Activity
by Sex Groups

Winner	Boys	Girls	Row Totals
BOY			
f	11	6	17
Row %	64.7	35.3	
Col. %	55.0	30.0	
Total %	27.5	15.0	42.5
GIRL			
f	9	14	23
Row %	39.1	60.9	
Col. %	45.0	70.0	
Total %	22.5	35.0	57.5
COLUMN TOTALS			
f	20	20	40
%	50.0	50.0	100.0

A chi-square value of 1.64 was not significant at the .05 level. The sex groups did not differ in their choices of the sex of

the perceived winner of the "Pong Game."

The data for the grade levels are presented in Table 18.

Table 18
Typing of Perceived Winner in Fine Motor Activity
Within Grade Levels

Winner	Fourth Grade	Fifth Grade	Sixth Grade	Row Totals
BOY				
f	3	10	4	17
Row %	17.6	58.8	23.5	
Col. %	37.5	62.5	25.0	
Total %	7.5	25.0	10.0	42.5
GIRL				
f	5	6	12	23
Row %	21.7	26.1	52.2	
Col. %	62.5	37.5	75.0	
Total %	12.5	15.0	30.0	57.5
COLUMN TOTALS				
f	8	16	16	40
%	20.0	40.0	40.0	100.0

A chi-square value of 4.71 was not significant at the .05 level. The grade levels did not differ in their choices of whom they thought would win the "Pong Game."

A one-sample chi-square test of the row totals for Tables 17 and 18 yielded a chi-square value of 0.9. This was not significant at the .05 level. The sex group and the grade level choices were not

beyond chance expectancies. The groups did not pick either the boy over the girl or the girl over the boy as the perceived winner of the "Pong Game."

Specific Objective Ten

The tenth specific objective of this study was to determine whether boys or girls were perceived to have the greater ability when competing in the large motor activity. The subjects were asked, "In the film, who will win the 'Bicycle Game'?" The data showing the sex choices are presented in Table 19.

Table 19
Typing of Perceived Winner in Large Motor Activity
by Sex Groups

Winner	Boys	Girls	Row Totals
BOY			
f	19	17	36
Row %	52.8	47.2	
Col. %	95.0	85.0	
Total %	47.5	42.5	90.0
GIRL			
f	1	3	4
Row %	25.0	75.0	
Col. %	5.0	15.0	
Total %	2.5	7.5	10.0
COLUMN TOTALS			
f	20	20	40
%	50.0	50.0	100.0

A chi-square value of 0.28 was not significant at the .05 level. The sex groups did not differ in their choices of the sex of the perceived winner of the "Bicycle Game."

The data showing the grade level choices are presented in Table 20.

Table 20
Typing of Perceived Winner in Large Motor Activity
Within Grade Levels

Winner	Fourth Grade	Fifth Grade	Sixth Grade	Row Totals
BOY				
f	7	14	15	36
Row %	19.4	38.9	41.7	
Col. %	87.5	87.5	93.8	
Total %	17.5	35.0	37.5	90.0
GIRL				
f	1	2	1	4
Row %	25.0	50.0	25.0	
Col. %	12.5	12.5	6.3	
Total %	2.5	5.0	2.5	10.0
COLUMN TOTALS				
f	8	16	16	40
%	20.0	40.0	40.0	100.0

A chi-square value of 0.42 was not significant at the .05 level. The grade levels did not differ in their choices of whom they thought would win the "Bicycle Game."

A one-sample chi-square test of the row totals for Tables 19 and 20 yielded a chi-square value of 25.6. This was significant at the .05 level. Ninety percent of all subjects chose the boy to win the "Bicycle Game." Both sexes and each grade level agreed that the boy would win the large motor activity when competing against a girl.

Specific Objective Eleven

The eleventh specific objective of this study was to determine the interrelationships among perceived ability of sex groups, personal status choices, activity importance choices, and personal enjoyment choices. Table 21 presents data comparing these variables.

Table 21
Interrelationships Among Previously
Reported Variables

Nature of Comparison		Chi-square Value	Significance
Activity Importance (females) vs. Personal Status (Question 1 vs. Question 5)	Boys	2.28879	p = .68
	Girls	4.13223	p = .39
	Total	4.74206	p = .31
Activity Importance (males) vs. Personal Status (Question 2 vs. Question 5)	Boys	26.44441	p = .00
	Girls	4.60606	p = .33
	Total	11.25926	p = .02
Activity Importance (females) vs. Personal Enjoyment (Question 2 vs. Question 6)	Boys	2.68409	p = .61
	Girls	1.63453	p = .44
	Total	4.69841	p = .32
Activity Importance (males) vs. Personal Enjoyment (Question 2 vs. Question 6)	Boys	6.42734	p = .17
	Girls	5.52188	p = .06
	Total	6.57160	p = .16
Personal Status vs. Personal Enjoyment (Question 5 vs. Question 6)	Boys	10.95331	p = .03
	Girls	1.10193	p = .58
	Total	9.33333	p = .05

As Table 21 demonstrates, only two interrelationships examined in this study revealed significant relationships at the .05 level. The cross-tabulation of the male subjects' responses for activity importance (males) and personal status yielded a chi-square value that was significant at the .05 level ($p = .00$). Sixty-five percent of all male subjects chose the "Bicycle Game" as an important activity for males in general and as an important activity to them personally. When both sexes were combined for these two questions, the cross-tabulation yielded a chi-square value (26.44) which was significant at the .05 level. However, it appears that the boys' choices were dominant over the girls' choices, which helped to make the total value significant.

The girls did not perceive those activities important to males as the same activities they would choose for their own personal status.

When the personal status and personal enjoyment questions were cross-tabulated for the male subjects, a chi-square value (10.95) was significant at the .05 level. Thirteen of the 20 male subjects chose the "Bicycle Game" as the activity that was most important for them personally, and the same number chose the "Pong Game" as the activity they would prefer to play. Therefore, there was a relationship between what boys felt was important to them personally and what they would prefer to play. Here again, the total responses show a significant relationship at the .05 level. The girls' responses, however, did not indicate a relationship between their personal status choices and their personal enjoyment choices.

In no case, does the cross-tabulation of the girls' responses show any significance. On all five interrelationships, the girls' choices seemed to indicate that they are spreading out their activity choices for each variable. The girls seemed to be willing to choose each activity fairly equal on each interrelationship.

DISCUSSION

In all cases for objectives one through ten, there were no significant differences between the sexes or within grade levels. Fourth, fifth, and sixth grade boys and girls did not differ in the activities they typed as most important for girls or boys to win in a competitive situation with each other. Nor did they differ in the activities they typed as least important for their sex to win in a

competitive situation. Also, no significant differences were reported between the sex groups or within the grade levels on personal status questions, personal enjoyment questions, or perceived ability of the sexes questions. However, there were some trends and findings that concur with previous research in this area, and there were some interesting findings when observing this study as a whole.

It appears that the fine-large motor activity, the "Balance Game," was perceived by all groups to be the most important activity for girls to win in a competitive situation. For boys, all groups agreed that the large motor activity, the "Bicycle Game," was the most important activity. For both sex groups and each grade level, the fine motor activity, the "Pong Game," seemed to be the least important activity for either sex to win in a competitive situation. Therefore, each sex seems to sex-type motor activities similarly.

The strongest sex-typed activity appeared to be the activity typed as most important for boys to win in a competitive situation with the opposite sex. Seventy-five percent of all the boys and 60 percent of all the girls felt that the "Bicycle Game" was an important boys' activity. This finding appears to be in agreement with Herkowitz (19), who found that the most strongly sex-typed activities were perceived as boy activities. Almost as strongly sex-typed was the "Pong Game," where both boys and girls felt that this activity was not important for either sex. This seems to be the most important finding of this study. Children would rather play in those activities they feel are of least importance to each sex than those activities they are willing to say are most important for their sex. Children want to play an activity for its sake, not because they feel they should play it for their sex status or

personal status.

Sixty-five percent of the boys felt that the "Bicycle Game" was most important to them personally. The interrelationship between the activity typed by boys as most important for boys to win and the activity typed by boys as important to them personally was significant at the .05 level. In fact, boys overwhelmingly typed the "Bicycle Game" as important for boys and to themselves. The boys are willing to say that the "Bicycle Game" is important for boys to win in general and is important to them personally. However, it appears that when asked to say which activity they would prefer to play, boys would choose to forego the activity they feel is most important for their sex and themselves and choose something different, in this case the "Pong Game." Boys, therefore, say they would rather play a game that they typed as least important to win in a competitive situation than games they feel are important for boys to win. This indicates that boys do sex-type activities as might be expected but would really rather play in an activity that is not expected of them. They choose to take part in what they enjoy, not in activities they might feel that others want them to be in. It must be noted, however, that this preference for the "Pong Game" may also be a result of the popularity of the activity.

Girls, on the other hand, type activities similarly to boys but they don't have any apparent trend. They do not want to participate in the activity ("Balance Game") that they typed as important for their sex to win. They do not feel that what is important to them personally ("Bicycle Game") is the same as what they say is important for their sex ("Balance Game"). They don't even say that they want to participate in the activity they feel is important for them as individuals. The girls

do, however, want to do what is typed as a boy activity. Forty-five percent of the girls feel that the "Bicycle Game" would be their choice of an activity for personal enjoyment and 55 percent say that the "Bicycle Game" is what is important for them to win personally. This finding is similar to that of Sutton-Smith and Rosenberg (44) and Montemayor (33), who have found that girls' game preferences have become more like boys' game preferences. It is also interesting to note that the activity that was typed by both sexes as important for girls to win ("Balance Game") is the same activity that both sexes feel would be the least enjoyable activity to play in a competitive situation. Girls will type an activity a girls' activity and yet feel that it would be the least enjoyable activity to pursue. This is especially true for older children, in that 87.5 percent of all sixth graders felt that the "Balance Game" would be the least enjoyed game.

Finally, previous research has suggested that when asked to perform in an activity which is clearly labeled sex-appropriate or sex-inappropriate, both boys and girls perform consistent with their own sex (33). In this study, the majority of male subjects felt that boys would defeat girls in all three types of motor activities. Ninety-five percent of the male subjects felt that boys would win the "Bicycle Game." Eighty-five percent of the girls agreed with this. However, in the other two types of activities, the fine motor and fine-large motor activity, the sexes were split in who they felt would win.

Girls apparently feel that when asked to perform in an activity, they will perform consistent in the activity of their sex. Boys, on the other hand, support the idea that physical activity is perceived as predominantly a male domain (19) when they feel they can defeat girls in

all three types of motor activity.

Chapter 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

The purpose of this study was to determine if sex and grade level differences existed when elementary school children classified or sex-typed three different motor activities: (a) fine motor activity, (b) fine-large motor activity, (c) large motor activity. More specifically, the objectives of this research were to:

1. Determine which of the three activities was typed as most important for girls to win in a competitive situation.
2. Determine which of the three activities was typed as most important for boys to win in a competitive situation.
3. Determine which of the three activities was typed as least important for girls to win in a competitive situation.
4. Determine which of the three activities was typed as least important for boys to win in a competitive situation.
5. Determine which of the three activities was perceived as most important for personal status by winning in a competitive situation.
6. Determine which of the three activities was perceived as most important for personal enjoyment in a competitive situation.
7. Determine which of the three activities was perceived as least important for personal enjoyment in a competitive situation.
8. Determine whether boys or girls were perceived to have the

greater ability when competing in the fine-large motor activity.

9. Determine whether boys or girls were perceived to have the greater ability when competing in the fine motor activity.

10. Determine whether boys or girls were perceived to have the greater ability when competing in the large motor activity.

11. Determine interrelationships among perceived ability of sex groups, personal status choices, activity importance choices, and personal enjoyment choices.

Forty fourth, fifth, and sixth grade boys and girls were randomly selected for subjects in this study. There were 20 girls and 20 boys: four each from the fourth grade and eight each from the fifth and sixth grades.

The subjects were shown a two-minute film of a boy and a girl competing against each other in three different types of motor activity. Immediately following the second viewing of the film, each subject was read ten questions from the questionnaire constructed for this study. The subjects' responses were recorded on answer sheets which were tabulated by this researcher.

Results were analyzed by establishing 2x2, 2x3, and 3x3 contingency tables and performing the chi-square test of independence to determine if significant differences existed between each sex group and grade level.

CONCLUSIONS

1. Boys and girls do not differ in sex-typing of motor activities. They perceive the same tasks to be the activities of importance for each sex.

2. Children of the different grade levels (4th, 5th, 6th) do not differ in sex-typing of motor activities.

3. The most strongly sex-typed activities were for boys.

4. Girls seem to personally prefer those activities that were sex-typed for boys. Female sex-roles may be changing and sex-typing processes could be a potential vehicle in such changes.

5. Boys feel that in all types of motor activities they will have the greater ability when competing against girls.

6. Both boys and girls would enjoy competing in activities other than those they typed to be important for their sex or for their own personal status.

RECOMMENDATIONS

1. Physical educators might take note that children might actually prefer to play physical activities that are typed as less important, than to continually have children play in activities that are said to be important for each sex. Could it be that what children are seeking is a de-emphasis in competition of physical activities?

2. Researchers, when testing children in a competitive setting for anxiety, level of aspiration, or other measures, need to consider the activity as an important criteria when setting up an experimental design. Some activities appear to be perceived as more or least important to winning in a competitive situation.

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APPENDIX

APPENDIX A

Dear Parent:

During this fall semester we would like to conduct research investigating the competitive behavior of children. We are asking for your assistance and the assistance of your children. Your children are asked to participate in our study. If you agree, and they agree to participate, they will be asked to play a competitive game with another child of similar age and then will be asked to answer some questions about their participation. The questions relate to their feelings about competing.

Children who participate will need to spend about 30 minutes on the project. The study involves no stress on the child and most children find it to be fun. We will be sure that your child agrees to participate before they become involved. The names of your children will not be used in reporting the results of the study and will be kept private.

Please indicate on the form below whether you will or will not allow your child to take part in this study and return this permission slip to your child's teacher. If you have any questions about the nature of the study please feel free to telephone either of us at 532-6379.

Thank you for your cooperation.

Charles B. Corbin, Ph.D.
Department of Health, Physical
Education, and Recreation

Charlie Nix
Department of Health, Physical
Education, and Recreation

Permission Slip

I will allow my child to participate

I will not allow my child to participate

print child's name

your signature

APPENDIX B

QUESTIONNAIRE

As you answer the questions that I will be asking, think about the film you just saw.

There is no right or wrong answer. Just answer the question with WHAT YOU THINK IS THE BEST ANSWER--WE WANT TO KNOW WHAT YOU THINK.

Do not go to the next question until I tell you to. If you have questions, raise your hand and someone will come help you.

QUESTION NUMBER 1. Of the three games in the film, which do you think is the most important for girls to win? Which is the most important game for girls to win? Check one of the three: the Balance Game, the Pong Game, or the Bicycle Game.

QUESTION NUMBER 2. Of the three games in the film, which do you think is the most important for boys to win? Which is the most important game for boys to win? Check one of the three: the Balance Game, the Pong Game, or the Bicycle Game.

QUESTION NUMBER 3. Of the three games in the film, which do you think is the least important for girls to win? Which is the least important game for girls to win? Check one of the three: the Balance Game, the Pong Game, or the Bicycle Game.

QUESTION NUMBER 4. Of the three games in the film, which do you think is the least important for boys to win? Which is the least important game for boys to win? Check one of the three: the Balance Game, the Pong Game, or the Bicycle Game.

QUESTION NUMBER 5. If you were the person in the film, which of the three games would be most important for you to win? Which is the most important game for you to win? Check one of the three: the Balance Game, the Pong Game, or the Bicycle Game.

QUESTION NUMBER 6. Which of the three games would you most like to play? Which game would you most like to play? Check one of the three: the Balance Game, the Pong Game, or the Bicycle Game.

QUESTION NUMBER 7. Which of the three games would you least like to play? Which game would you least like to play? Check one of the three: the Balance Game, the Pong Game, or the Bicycle Game.

QUESTION NUMBER 8. In the film, who will win the Balance Game? Who will win the Balance Game? The boy or the girl? Check one of the two boxes.

QUESTION NUMBER 9. In the film, who will win the Pong Game? Who will win the Pong Game? The boy or the girl? Check one of the two boxes.

QUESTION NUMBER 10. In the film, who will win the Bicycle Game? Who will win the Bicycle Game? The boy or the girl? Check one of the two boxes.

APPENDIX C

I am willing to answer some questions about playing games.

write your name here

Check One☐ Boy☐ GirlCheck One☐ Grade 4☐ Grade 5☐ Grade 6PLEASE DO NOT BEGIN UNTIL WE TELL YOU

CHECK ONE ANSWER FOR EACH QUESTION--THERE IS NO RIGHT OR WRONG ANSWER.

1. ☐ Balance Game☐ Pong Game☐ Bicycle Game6. ☐ Balance Game☐ Pong Game☐ Bicycle Game2. ☐ Balance Game☐ Pong Game☐ Bicycle Game7. ☐ Balance Game☐ Pong Game☐ Bicycle Game3. ☐ Balance Game☐ Pong Game☐ Bicycle Game8. ☐ Boy☐ Girl4. ☐ Balance Game☐ Pong Game☐ Bicycle Game9. ☐ Boy☐ Girl5. ☐ Balance Game☐ Pong Game☐ Bicycle Game10. ☐ Boy☐ Girl

APPENDIX D

AUDIO SCRIPT OF VIDEOTAPE

Today you will be viewing a film in which a boy and a girl will be competing against each other in three different types of activities. Watch and listen closely. You will be asked to answer some questions after the film has been shown.

The first activity is a Balance Game.

To play the game you balance on a board much like a teeter totter. This type of game requires the boy and the girl to use their entire body to maintain their balance. The object of this game is to see who can balance the longest amount of time. Watch the boy and the girl as they play the Balance Game.

The second activity is a TV Pong Game.

To play the game you turn a knob with your fingers to control a pong paddle on the TV screen. This type of game requires concentration with the eyes and quickness with the hands and fingers. The object of this game is to see who can score the most points. Watch the boy and the girl as they play the Pong Game.

The third activity is a Bicycle Game.

To play the game you ride the bicycle as fast as you can. This type of game requires powerful leg movements, strong muscles, and speed. The object of the game is to see who can ride the farthest distance. Watch the boy and the girl as they play the Bicycle Game.

The three games are the Balance Game, the Pong Game, and the Bicycle Game.

APPENDIX E

Subject Number _____

Sex: 1 = Male 2 = Female

Grade: 4 5 6

Age: 08 09 10 11 12 13 14

Q-1 _____

Q-6 _____

Q-2 _____

Q-7 _____

Q-3 _____

Q-8 _____

Q-4 _____

Q-9 _____

Q-5 _____

Q-10 _____

Bal

Pong

Bike

Boy Rank _____

Girl Rank _____

Most Like _____

SEX AND GRADE LEVEL GROUP DIFFERENCES IN SEX-TYPING
OF VARIOUS MOTOR ACTIVITIES

by

CHARLES L. NIX

B.S., Kansas State University, 1975

AN ABSTRACT OF A MASTER'S THESIS

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1978

PURPOSE

The purpose of this study was to determine if sex and age group differences existed when elementary school children classified or sex-typed three different motor activities: (a) fine motor activity, (b) fine-large motor activity, (c) large motor activity. More specifically, the objectives of this research were to determine: (1) which activities were typed as most important for boys to win and which were most important for girls to win in a competitive situation, (2) which activities children typed as least important for their sex to win in a competitive situation, (3) which activities were perceived most important to personal status by winning in a competitive situation, (4) which activities were perceived as most and least important for personal enjoyment in a competitive situation, (5) whether boys or girls were perceived to have the greater ability when competing in these motor activities, (6) the interrelationships among perceived ability of sex groups, personal status choices, activity importance choices, and personal enjoyment choices.

PROCEDURES

Forty fourth, fifth, and sixth grade boys and girls were randomly selected for subjects in this study. There were 20 girls and 20 boys: four each from the fourth grade and eight each from the fifth and sixth grades. The subjects were shown a two-minute film of a boy and a girl competing against each other in three different types of motor activity. Immediately following the second viewing of the film, each subject was read ten questions from the questionnaire constructed for this study.

RESULTS

Results were analyzed by establishing 2x2, 2x3, and 3x3 contingency tables and performing the chi-square test of independence to determine if significant differences existed between each sex group and grade level. A one-sample chi-square test was performed to analyze data relative to objectives one through ten. There were no significant differences between the sexes or the grade levels on objectives one through ten. When only the boys' choices were examined to find possible interrelationships between the variables in this study, significance was found when cross-tabulating activity importance (males) vs. personal status and personal status vs. personal enjoyment.

CONCLUSIONS

On the basis of the results of this study, the following conclusions appear warranted:

1. Boys and girls do not differ in sex-typing of motor activities. They perceive the same tasks to be the activities of importance for each sex.
2. Children of the different grade levels (4th, 5th, 6th) do not differ in sex-typing of motor activities.
3. The most strongly sex-typed activities were for boys.
4. Girls seem to personally prefer those activities that were sex-typed for boys. Female sex-roles may be changing and sex-typing processes could be a potential vehicle in such changes.
5. Boys feel that in all types of motor activities they will have the greater ability when competing against girls.
6. Both boys and girls would enjoy competing in activities

other than those they typed to be important for their sex and for their own personal status.