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The Relationships of Gender and Age with Peer Acceptance in Primary-Grade, Multiage Classrooms at Edith Bowen Laboratory School

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THE RELATIONSHIPS OF GENDER AND AGE WITH PEER ACCEPTANCE IN PRIMARY-GRADE, MULTIAGE CLASSROOMS AT EDITH BOWEN LABORATORY SCHOOL

by

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ABSTRACT

The Relationships of Gender and Age with Peer Acceptance in Primary-Grade, Multiage Classrooms at Edith Bowen Laboratory School

by

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This study describes the effects of gender and age on peer acceptance in primary-grade, multiage classrooms at Edith Bowen Laboratory School at Utah State University. The population described consisted of six multiage classrooms composed of male and female students from 6 to 8 years old. The classrooms were approximately balanced by gender and age. Students spent the entire day and received all instruction in the multiage setting.

Students completed "Work With" and "Play With" sociometric rating-scale instruments. For both instruments, results revealed the existence of "gender cleavage" -- both genders preferred work and play partners of their own gender. In general, age accounted for more variance in peer acceptance scores for older students than younger students. However, eta-squared statistics demonstated that except for 8-year-old males, gender accounted for much more of the variance in peer acceptance scores than age.

The correlation coefficient for paired peer acceptance scores for each student on the two instruments was .94. These results support the conclusion that students did not differentiate responses based on "Work With" and "Play With" criteria. Test-retest reliabilities for the "Work With" and "Play With" instruments with a 1-week testing interval were .94 and .92, respectively.

(95 pages)

DEDICATION

This thesis is dedicated to my wife and best friend, Deborah E. Hobbs. This work could not have been completed without her constant support and encouragement. As always, even in what I perceived to be dark moments, her optimism and love shone through and spurred me on. Whatever else I face or accomplish in life, I know Deborah will be at my side. I would be ungrateful to ask more from life.

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CHAPTER I

INTRODUCTION

Interest in multiage grouping is increasing as educators search for ways to restructure schools to more effectively meet the needs of children (Cohen, 1989; Gutierrez & Slavin, 1992; Willis, 1991). Supporters of multiage classrooms claim that the configuration benefits students academically, emotionally, and socially (Gutierrez & Slavin, 1992; Katz, Evangelou, & Hartman, 1990; Miller, 1990). As a result, a growing number of school districts and states are mandating multiage grouping, especially in the primary grades (Cohen, 1989; Pavan, 1992).

While research is needed in all areas of multiage grouping, the focus of this study is the effect of age and gender on peer acceptance among children in primary-grade, multiage classrooms at Edith Bowen Laboratory School. Peer acceptance is defined as an individual's overall acceptance within a social group (McConnell & Odom, 1986). It is important to study peer acceptance because peer acceptance is a major component of a child's overall social development (Gresham, 1986) and it is increasingly recognized that peers make a unique contribution to social development (Asher & Hymel, 1981).

The need for this research is based on four premises. First, there is a lack of research in peer relations among school-age children whose age differences are greater than 12 months. Hartup (1983), a noted researcher in the social development of children, has revealed the startling fact that approximately 90% of existing studies on child-to-child relations concern interactions among agemates--children within 12 months of age.

Secondly, because most classrooms are age-graded, much of the existing research about cross-age peer relations has been done with ad hoc multiage groups in studies of short duration (most often a few hours), and not in long-term classroom settings. Because of this limitation, the conclusions about peer relations drawn from this research are arguably not generalizable to multiage classrooms in which children form stable, long-term relationships (Epstein & McPartland, 1975; Hallinan, 1974).

Third, prior research concerning multiage classrooms emphasized measurement of individual variables such as school and individual anxiety, levels of aspiration, attitude

toward school, individual social development, and so forth (Ford, 1977; Miller, 1990). Only one study was located that related to the effects of age and gender on peer acceptance scores in multiage settings (Sherman, 1984).

Finally, much of the existing research on multiage classrooms is outdated and may not be relevant to current efforts in implementing multiage classrooms. Examination of the dates of studies used in a meta-analysis published by Gutierrez and Slavin (1992) concerning multiage grouping supports this conclusion. Of the 57 studies included in their analysis, two were published in the 1950s, 24 in the 1960s, 27 in the 1970s, and 4 in the 1980s. None are cited from the 1990s.

Multiage classrooms represent a major change in organization by bringing students of different ages into one room to learn and play together. A common concern that arose at Edith Bowen Laboratory School among parents and educators considering multiage grouping is whether children in multiage groups will accept one another as work and play partners (Byrnes, Shuster, & Jones, 1994). If children accept their peers equally, then multiage grouping should offer no impediment to social and academic interaction in the classroom. However, if children exhibit considerable gender and age preference differences, interaction between classmates could be restricted, thereby limiting the assumed social (Hallinan, 1981) and academic benefits of multiage classrooms.

Therefore, the purpose of this study was to add to understanding concerning peer acceptance in multiage classrooms. Simply stated, the question addressed in this study was, "What are the relationship of gender and age with peer acceptance in primary-grade, multiage classrooms at Edith Bowen Laboratory School?"

CHAPTER II
REVIEW OF LITERATURE

Multiage Grouping Defined

Multiage grouping is defined as "placing children who are at least a year apart in age into the same classroom groups" (Katz et al., 1990). Multiage grouping has also been called mixed-age, multigrade, family, ungraded, combination, continuous progress, and nongraded grouping. The terms mentioned above are used interchangeably throughout the literature; however, the term "multiage grouping" will be used in this paper.

Adoption and Experimentation with Multiage Grouping

There are many current and significant examples of recent adoption and experimentation with multiage grouping. For example, the Kentucky legislature passed the Kentucky Educational Reform Act of 1990 requiring each elementary school in the state to implement an ungraded primary program during or before the 1992-93 school year. Mississippi and Oregon legislators passed similar laws requiring multiage grouping in the primary grades (Lodish, 1992). In British Columbia many schools have used ungraded classrooms for years. Further, the provincial government mandated multiage classrooms for all schools in grades K-3 as of 1990 with the concept to be extended through the upper grades by the year 2000 (Cohen, 1989). In addition to these examples, other state departments of education and school districts are considering multiage configurations (Pavan, 1992), including Alaska, California, Florida, Georgia, New York, Pennslyvannia, Tennessee, and Texas (Lodish, 1992).

From the examples cited above, it is obvious that interest in and use of multiage grouping is increasing, especially in the primary grades. Like any innovation, multiage grouping breaks with tradition. New ideas often engender powerful opposition from a variety of stakeholders (i.e., parents, teachers, administrators, etc.) genuinely concerned about how the innovation affects children's education. The obligation of those advocating a new position is to provide the best answers available from research.

Need for Multiage Research

The need for further research was based on the following four premises: (a) there is a general lack of research concerning children in whose age differences are greater than 12 months; and more specifically, the existing research on peer acceptance was done in traditional, age-graded classrooms; (b) there is a lack of current research concerning effects of contemporary multiage grouping; (c) much of the existing research about cross-age and cross-gender interaction was done with ad hoc multiage groups in studies of short duration (most often a few hours) and not in long-term classroom settings; and, (d) past research of multiage classrooms emphasized measurement of individual variables such as anxiety, levels of aspiration, attitude toward school, individual social development, and so forth, with few studies looking at overall patterns of peer interaction. The next few sections expand and further explain each premise.

Age-graded Existing Research

Willard Hartup (1983) found that about 90% of existing studies on child-to-child relations concern children within 12 months of age. Hartup explained:

> Children have been most accessible to social scientists in schools and other institutions which...are age-graded. Unable to track children on the playground, in city streets, and in farmyards, psychologists have unwittingly generated an age-graded data base. (p. 107)

In other words, age-graded schools lead to age-graded samples. Therefore, very few studies exist that investigate peer relations within multiage classrooms. Graziano, French, Brownwell, and Hartup (1976) lend further support to this conclusion by noting that peer groups

> have been studied almost exclusively in same-age groups, that is, aggregates of children who vary in age by 12 months or less. Previous studies of social behavior have been few consisting mostly of field observations. Ordinarily, investigators have examined peer interaction in the setting in which subject access has been easiest--the age-graded school. (p. 707)

This "age-graded database" is particularly evident when looking at sociometric research. In studying friendship patterns in open classrooms, Hallinan (1976) criticized past research for looking only at traditional classrooms settings (i.e., age-graded, self-

contained). Quoting Hallinan:

> Our understanding of the sociometry of the classroom is rooted almost entirely in traditional settings. Numerous studies were carried out in the fifties and early sixties investigating children's friendship patterns in self-contained classrooms. (p. 254)

Further, the emphasis on same-age research has overemphasized the importance of same-age peer relations both in the literature and in theory development (Hartup, 1983). Many assume that children's social contacts are with same-age peers. Surprisingly, children do not spend most of their time with age-mates. Barker and Wright (1955) in a study of midwestern children found that 65% of children's interactions were with children whose age differed by more than 12 months. A study done in Salt Lake City, Utah, explored children's social interactions outside of school. The authors concluded that "children are not consistently segregated from adults or children of other ages" (Ellis, Rogoff & Cromer, 1981, p. 404).

Finally, Lougee, Grueneich, and Hartup (1977) commented that "a literature on peer relations that is biased by a predilection for studying children in age-graded schools is ipso facto an incomplete literature" (p. 1353). Considering the balance of the existing research, more research is needed concerning children's peer relations in multiage classrooms.

Lack of Current Research on Multiage Grouping

Two recent reviews support the contention that there is little current research on multiage grouping. In 1992, Gutierrez and Slavin published an extensive meta-analysis on the academic effects of multiage grouping. As mentioned previously, the majority of the studies used in their analysis were from the 1960s and 1970s with none cited from the 1990s. A review of multiage grouping by Miller (1990) demonstrates a similar trend. Of the 20 studies cited by Miller, there is 1 each from the 1930s, 1940s; and 1950s; 5 are from the 1960s; 7 from the 1970s; and 5 from the 1980s. Further, in the Encyclopedia of Educational Research (Mitzel, 1982), using the term "nongrading," the editors concluded, "Most research on nongraded school organization was conducted in the early 1970s with little research available since 1973" (p. 547).

Why is the lack of current research a problem? Certainly, studies of previous multiage configurations provide valuable guidance. However, they may not be relevant to contemporary understandings of child development that is based on new theoretical perspectives and pedagogical techniques. Robert Slavin supports this view. In a follow-up article to the meta-analysis cited earlier, Slavin (1992) cautioned that conclusions concerning multiage grouping based on past studies may not be relevant to today's classrooms which use new curriculum and instructional techniques.

Existing Multiage Research Limited in Interaction Time

Researchers are faced with the practical limitation of finding multiage groups of children to investigate. Therefore, they design studies of multiage peer relations using small groups of students in treatments of short duration (Brody, Graziano, & Musser, 1983; Graziano et al., 1976; Johnson, Johnson, Pierson, & Lyons, 1985). Representative of this is a study conducted by Graziano et al. (1976). For this research, children were assigned to mixed-aged triads and given a tower-building task. Although not specified, the activity probably lasted about one hour. Conclusions about multiage peer relations were then made from the data collected.

While this study and others like it certainly have merit for the study of some aspects of multiage peer relations, the designs were most likely influenced by the unavailability of multiage classrooms in which children have long-term relationships. Because of the short duration of these studies, the generalizability of the conclusions to children's long-term relationships in multiage classrooms is doubtful (Epstein & McPartland, 1975; Hallinan, 1974). This doubt is emphasized by a statement made by Hallinan (1976) who concluded, "The single most important factor affecting the formation and development of friendship among children is the amount of interaction in which they engage" (p. 256).

Existing Multiage Research Not Focused on Patterns of Peer Acceptance

Considering the literature on multiage classrooms, there is a lack of research that specifically focuses on patterns of multiage peer acceptance. Earlier research focused on individual variables such as anxiety, belonging, personality and social development, social adjustment, self-concept, levels of aspiration, and attitude towards school (Ford, 1977; Miller, 1990; Way, 1979). Important as these variables may be, they do not capture patterns of peer acceptance at the classroom level.

In reviewing the literature, only one study was located that investigated "peer acceptance" in multiage classrooms. Sherman (1984) used a measure of "social distance" to examine peer relations in multiage classrooms of 8-, 9- and 10-year-olds in a laboratory school at a midwestern university. As used by Sherman, social distance is akin to peer acceptance. The smaller the "social distance" between age groups, the greater the peer acceptance between the groups. Greater social distance indicates less peer acceptance.

In Sherman's study, a rating-scale sociometric instrument was used to collect children's responses. Students rated each classmate on a five-point scale ranging from "would like to have him/her as one of my best friends" to "wish he/she weren't in our room." The ratings were averaged to yield a social distance score for each child. A unique feature of the study was the use of the rating-scales with the same children in different settings. This was possible because children spent most of the day (65%) in mixed-age groups and the rest (35%) in a same-age setting. This allowed for comparison of social distance ratings in both age-graded and multiage settings.

Sherman (1984) reached three conclusions pertinent to this study. First, results indicated that children's social distance rating differed by setting. Sherman concluded that "children of the same age perceive greater social distance among themselves in age-homogeneous than they do in age-heterogeneous settings" (p. 405). This supports other studies (Gronlund, 1959; Hallinan, 1976; Hallinan & Tuma, 1978;) that found that classroom setting affects children's friendship patterns. In particular, it supports the idea that multiage classrooms will affect children's social environment.

Second, Sherman (1984) concluded that "regardless of which setting in which the children rated themselves, the cross-sex social distance ratings were significantly greater than same sex ratings" (p. 405). This finding is supportive of the vast majority of studies of cross-gender peer interactions. Hartup (1983) commented on this phenomenon by saying:

> The existence of a sex cleavage in peer interaction is much too well-known to require extensive comment. Children of all ages associate more frequently with members of their own sex than with members of the opposite sex and like them better. (p. 109)

Third, concerning social distance between crossage children in multiage groups, Sherman (1984) said that, "children of the same age tend to perceive significantly less distance among themselves than children of different ages" (p. 403). This finding taken together with the expected gender differences may indicate that age will affect ratings of peer acceptance within and across gender.

Developmentally Appropriate Practice and Multiage Peer Relations

Much of the current interest in multiage grouping is philosophically rooted in developmentally appropriate practice (Cohen, 1989). In 1987, the National Association for the Education of Young Children (NAEYC) recommended multiage grouping as one way to encourage developmentally appropriate practice and outlined instructional techniques considered to be appropriate for young children (Bredekamp, 1987). Representative of these methods are active, hands-on lessons; opportunities for interaction with other children and adults; small group work on projects that provide opportunities for conversation and peer interaction; peer tutoring; an emphasis on learning social skills; and opportunities for extended play (Bredekamp, 1987). Acceptance of multiage peers as work and play partners is assumed to be an integral and vital part of the instructional program and "ecology" of the classroom. However, if children exhibit considerable age bias, interaction between classmates could be restricted, thereby limiting the assumed social (Hallinan, 1981) and academic benefits of multiage classrooms. The important role that cross-age peer acceptance plays in multiage classrooms strongly argues for current research focusing on the issue.

Sociometric Assessment of Peer Relations

To research peer relations, investigators need effective tools. Fortunately, the tools needed, sociometric assessments, have a long history of use and a proven record of effectiveness in "assessing peer relations among children" (Asher, Oden, & Gottman, 1977; Asher, Singleton, Tinsley, & Hymel, 1979; Hymel, 1983, p. 237). Further, some researchers in the field consider sociometric assessments to be the "best available" measures of social competence in children (McConnell & Odom, 1986).

Sociometric tests were first popularized by Moreno in 1934 (Hartup, 1983) and are defined as procedures for "measuring the attraction between individual members of specified groups" (Asher & Hymel, 1981, p. 127). McConnell and Odom (1986) further refined the definition of sociometric assessments as "tests in which children make preferential responses to statements about peers in their social group" (p. 217).

Sociometric techniques are classified into two main types: (a) nomination and (b) rating-scale methods (Asher & Hymel, 1981). In nomination methods, children are asked to name a specified number of classmates based on a set criterion. For example, children may be asked to "List three children you like to play with during recess, or Name three students with whom you would most like to work on a class project." Scores on peer nomination scales are typically based on the number of choices received by classmates (Asher & Hymel, 1981).

In rating-scale methods, children are asked to rate each class member on given criteria. Criteria usually concern how much a child likes to "play with" or "work with" each child in the class. Most commonly, three- or five-point scales are used for the rating scale. A child's score on the rating-scale method is the mean of the rating given by the other members of the group. Peer acceptance is operationally defined by Asher and Hymel (1981) as the mean score received on a rating-scale sociometric instrument.

Care must be taken in matching the instrument to both the setting and the research question being addressed. Choosing the wrong sociometric technique can lead to a false conclusion concerning the research question. For example, in earlier research about the effects of racial integration, investigators concluded that children preferred same-race peers

(Bartel, Bartel, & Grill, 1973; Criswell, 1937). In conducting this research, peer nomination instruments were used. These instruments ask children to select a limited number of preferred classmates that they would like to sit by, play with, and so forth. As Singleton and Asher (1979) noted, "This type of sociometric measure provides a particularly stringent test....it is probably unrealistic to expect many cross-race best friendships to develop given the social climate in which desegregation often takes place...."(p. 936).

Given the data that resulted from their instruments, researchers concluded that cross-race peers did not relate well. However, Singleton and Asher (1979) studied cross-race peer acceptance with a rating-scale instrument and the conclusion was reversed--cross-race peers actually view each quite positively. Why the difference? The conclusions of the earlier researchers were in error due primarily to the sociometric technique used. Apparently, nomination and rating scales tap different aspects of peer relations (Asher & Hymel, 1981). Peer nomination methods identify best or high-priority friends, while rating scales measure overall acceptability in the social group (Gresham, 1981). Therefore, a child may not nominate a cross-race peer as a best friend on a peer nomination instrument, but still rate that peer highly in terms of overall peer acceptance.

In addition, researchers have found that student responses will differ on sociometric instruments depending on whether a "Play With" or "Work With" criterion is used (Oden & Asher, 1977; Singleton & Asher, 1979). In relation to this study, this means that patterns of peer acceptance scores on the two instruments may vary.

Summary

In view of the increasing use of multiage grouping, more research is needed about its effects on the social development of children. Research concerning multiage interaction is lacking with most of the studies dealing with children within 12 months of age. In addition, most studies conducted about multiage peer relations have been done with small groups of children in ad hoc settings. Therefore, more research is needed in classroom situations in which children's patterns of interaction are based on significant and long-lasting

relationships with cross-age peers. Further, much of the existing research base concerns individual variables and is not focused on patterns of peer acceptance. Finally, the new interest in establishing multiage classrooms is based on calls for developmentally appropriate practice. Developmentally appropriate instructional techniques assume considerable peer interaction. If children exhibit age and gender bias, the positive effects assumed to occur in multiage classrooms may be restricted. Therefore, there is a need to determine the effects of multiage grouping on peer acceptance.

CHAPTER III

METHOD

Purpose and Objectives

As outlined in the review of literature, there is a lack of current research concerning peer relations in multiage classrooms. Further, because contemporary multiage classrooms, based on developmentally appropriate practice, assume intense peer interaction, the nature of peer acceptance in multiage classrooms needs further research. Therefore, the purpose of this study was to determine the effects of gender and age on peer acceptance scores in primary-grade, multiage classrooms at Edith Bowen Laboratory School (EBLS).

Objectives

The objectives of the study were to determine:

1. The effect of ratee's gender on peer acceptance as measured by scores on a "Work With" rating-scale sociometric instrument.

2. The effect of ratee's age on peer acceptance scores as measured by scores on a "Work With" rating-scale sociometric instrument.

3. The interaction of the rater's gender and age with the gender and age of the ratee on peer acceptance scores as measured on a "Work With" sociometric instrument.

4. The effect of ratee's gender on peer acceptance as measured by scores on a "Play With" rating-scale sociometric instrument.

5. The effect of ratee's age on peer acceptance as measured by scores on a "Play With" rating-scale sociometric instrument.

6. The interaction of the rater's gender and age with the gender and age of the ratee on peer acceptance scores as measured on a "Play With" sociometric instrument.

7. If the "Play With" and "Work With" instruments measure different dimensions of peer acceptance.

8. The test-retest reliability of the two sociometric instruments used in the study.

Subjects

The subjects who participated in this study were an experimentally accessible population of students from Edith Bowen Laboratory School (EBLS) located on the campus of Utah State University in Logan, Utah. Teachers and students at EBLS were in the second year of implementing primary-grade, multiage grouping at the time of the study.

The 168 students who participated were members of six multiage "learning communities" of approximately 28 students, and ranged in age from 6 to 8 years old at the beginning of the school year. The ages of the children were determined as of September 1, 1993. In a few cases, students under 6 years of age were classified as 6-year-olds and 9-year-olds were grouped with 8-year-olds. In a graded system the students would have been in the first, second, or third grade. Classes were approximately equally balanced by gender and age. The percentage of white students in the multiage learning communities at EBLS was approximately 90%, with the remaining 10% representing a mix of ethnicities.

Students that attend EBLS are drawn from three surrounding school districts. The population of these school districts is reflective of the general population of Northern Utah, which is predominantly white and middle-class. Most students live in rural or suburban settings. Attendance at EBLS is voluntary and students are selected through an application process that draws attendees from each of the three districts based on a predetermined percentage. The selection process is managed to maintain a student population balanced by gender, age, and ethnicity. According to EBLS policy, faculty and staff at Utah State University do not receive special consideration, although the percentage of children of university personnel is higher than in most schools in the area. The average socioeconomic status of the students at EBLS is slightly higher than students in surrounding schools. Further, there is an expectation among parents that research and development activities will take place at the school.

Students spent the entire day and received all instruction within their multiage learning communities. Instructional groups were organized according to student need without regard to age. Students were exposed to children in other learning communities during joint recess periods and other school activities such as lunches, assemblies, field trips, and so forth.

At the time the data were collected, students were at the end of the second year of multiage grouping. Therefore, students in the 8-year-old group completed their first year of schooling in graded classrooms. The 6- and 7-year-old groups attended exclusively in multiage classrooms. Before joining the learning communities, the great majority of these students attended kindergarten at EBLS in an age-graded kindergarten.

Instrumentation

Two instruments were used in this study: (a) a "Play With" sociometric instrument and (b) a "Work With" sociometric instrument (see Appendixes A and B). Both of these instruments are rating scales. In considering the objectives of the study, rating scales were chosen over nomination scales as a result of prior research showing that rating scales measure overall peer acceptance versus "best" friend choices measured by nomination methods (Gresham, 1981).

The "Play With" scale had the following five steps: 1 = "really like playing with"; 2 = "kind of like playing with"; 3 = "neither like or dislike playing with"; 4 = "kind of dislike playing with"; 5 = "really dislike playing with". The "Work With" scale steps were identical except for the substitution of "working" for "playing." Therefore, the resulting scores could range from a "1," meaning high peer acceptance, to a "5," meaning low peer acceptance.

To make the instruments, a computer page layout program was used to produce the pages with yearbook pictures of the students obtained from the school pasted on the page. Copies of the original instruments were made using high-quality photocopy reproduction. Picture quality was about that of newspaper print and clearly recognizable. Alternatively, current computer technology using electronic still pictures and page layout programs would allow for speedy preparation of sociometric instruments that include pictures.

Validity of Sociometric Methods

Support for concurrent validity of sociometric instruments is drawn from their recommended use in social skills training. Since classmates are in daily and intimate

contact, their responses as to whether they like to play or work with a given peer seem to be direct and logical assessments of the peer's overall social competence. As was mentioned earlier, sociometric assessments are suggested as a measure of the effects of social skills training programs. Gresham (1981) emphasized this point by saying that effective social skills training should result in positive change in peer assessment. Support for concurrent validity of sociometric measures is further enhanced by a study conducted by Hartup, Glazer, and Charlesworth (1967). In this study, the investigators found moderate correlations between observed positive and negative interaction and scores on sociometric tests.

Numerous studies support the predictive validity of sociometric instruments. Asher and Hymel (1981) stated, "Various correlational studies suggest that early problems in peer relations are related to adjustment problems later in life. These include mental health problems, 'bad conduct' discharges from military service, suicide, dropping out of school, and delinquency" (p. 126). In a longitudinal study that collected sociometric data on 40,000 children, researchers found that children with low peer ratings were more likely to be classified as juvenile delinquents (Roff, Sells, & Golden, 1972). In fact, findings concerning the predictive validity of sociometric instruments have driven the development of social skills training programs (Gresham, 1981). In these programs, children are trained in various social skills based on the assumption that improved peer relations will decrease problems of social adjustment in later life.

Reliability of Sociometric Instruments

McConnell and Odom (1986) summarized findings on the reliability estimates of sociometric instruments. They stated that peer nomination methods "have been shown to be adequately reliable with elementary-aged children and older individuals" (p. 242). The reported reliability estimates with school-aged children and with test-retest intervals of 1 to 2 years ranged from .42 to .89. Gresham (1981) found that reliability estimates ranged from .19 to .62 with a test-retest interval of six weeks. In a comprehensive review of peer nomination reliability estimates, Busk, Ford, and Schulman (1973) indicated that test-retest correlations of school-aged students ranged from .69 to .91, with one- to two-week

intervals between tests. Peer-ratings, by contrast, result in higher reliability estimates (McConnell & Odom, 1986). Oden and Asher (1977) found median correlations of .82 for "play with" ratings and .84 for "work with" ratings in third and fourth grade classrooms. In McConnell and Odom (1986) summary of test-retest correlation of rating scale methods, reported coefficients ranged from .10 to .86 with most being the higher range.

From examining the studies cited, one can conclude that while sociometric tests are adequately reliable, there is considerable variability in reported reliability coefficients (McConnell & Odom, 1986). As a result, McConnell and Odom recommend that the reliability of a sociometric instrument be determined each time it is used in research.

Procedure

The data were collected by administering two rating-scale sociometric instruments. The method used to collect the data was based on the sociometric rating-scale procedure as outlined by Asher and Hymel (1981). To complete these instruments, students were read a realistic "play with" and/or "work with" scenario to elicit an emotional response as a referent for rating (see Appendixes C and D). The scenarios were developed by the author and reviewed by learning community teachers to assure that the scenarios were realistic for their classrooms. This procedure complies with the specifications that Moreno, the originator of sociometry, outlined for sociometric tests. These specifications are: "(1) the subject had to make an emotional response, and (2) the referent had to be a real-life situation" (McConnell & Odom, 1986, p. 217).

Based on the scenario, students were asked to rate each member of their class on a five-point scale. Using Asher and Hymel's (1981) procedure, children were given a complete list of classmates and asked to rate each one. Children circled a number from 1 to 5 that best described how much they like to play with (or work with) each classmate. Smiling and frowning faces were included on the scale to help communicate the meaning of the numbers.

In addition to the name and the rating faces, the instruments used in this study included a picture of each student next to his/her name. The pictures were from the school yearbook. Including the picture was an adaptation of an individual interview sociometric rating

technique used with young children in which pictures are used instead of names (McCandless & Marshall, 1957). Pictures were added to the sociometric instruments to compensate for the beginning reading levels of some of the students, and it was thought that the picture would increase reliability estimates especially in children of this age.

The instruments were given in the six learning communities at EBLS on two consecutive days. To control for possible order of administration effects, three classes selected at random were given the "play with" scale on the first day, while the other three classes received the "work with" scale. On the second day, the students completed the remaining scale. Students who were absent on the day of administration completed the training and the sociometric instruments upon return to school.

Before completing the first sociometric instrument, students were trained concerning the use of a rating-scale. The training, lasting approximately ten minutes, immediately preceded the administration of the first instrument. In the training session, students were given examples of food items and shown how to use a rating-scale to indicate how much they liked that food. Next, students used the scale to rate several common food items in a manner parallel to the rating required on the sociometric scales.

The training instrument and training administration guide were developed and field-tested prior to use in this study (see Appendixes E and F). The field tests were conducted in first, second and third grade classrooms at another local school to assure that both training and sociometric administration procedures and directions were clear and understandable for 6-, 7- and 8-year old students.

To collect data to determine the test-retest reliability of the two instruments, two intact classes were selected at random for retesting with either the "Work With" or "Play With" scale. Both retests were conducted one week after the original administration.

All data collection activities were completed by volunteer graduate students using a standard administration procedure and a script developed by the author. The graduate students were supervised by the author. The data from the two measures were summarized from the instruments by the author.

CHAPTER IV

RESULTS

The results are presented in this section. As this study explored the entire population of students in the multiage classrooms at EBLS, the summary and discussion of results is limited to descriptive statistics. Results for the "Work With" instrument are presented first, followed by results for the "Play With" instrument. Table 1 lists the means, standard deviations, and number of observations of the peer acceptance scores for the "Work With" instrument.

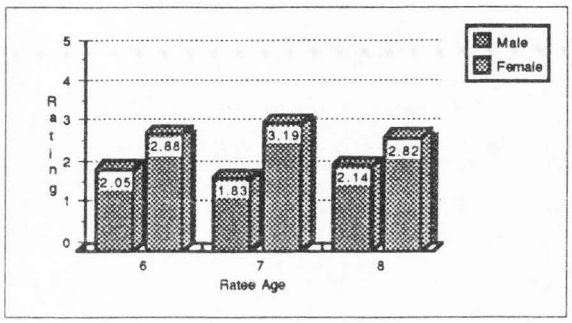
Table 1

Mean Peer Acceptance Scores, SD and n for the "Work With" Instrument

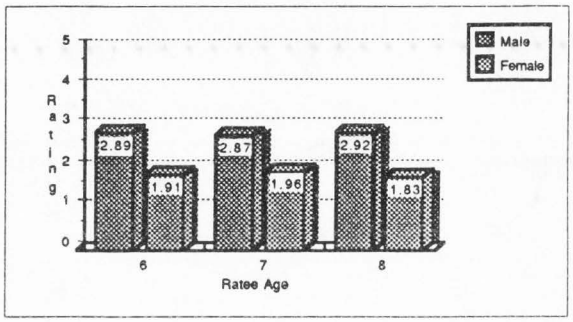
		Ratees					
		Males			Females		
Gender / Age of Raters		6 yr.	7 yr.	8 yr.	6 yr.	7 yr.	8 yr.
Males							
6 yr.	M	2.05	1.83	2.14	2.88	3.19	2.82
	SD	1.60	1.25	1.43	1.60	1.47	1.57
	n	74	107	71	82	78	101
7 yr.	M	2.52	1.94	2.11	3.25	2.95	2.87
	SD	1.40	1.17	1.29	1.33	1.25	1.24
	n	107	112	109	115	111	141
8 yr.	M	3.16	2.43	1.87	3.29	3.33	2.95
	SD	1.59	1.41	1.10	1.19	1.11	1.24
	n	70	109	92	97	100	101
Females							
6 yr.	M	2.89	2.87	2.92	1.91	1.96	1.83
	SD	1.56	1.59	1.59	1.36	1.28	1.27
	n	82	115	97	78	93	119
7 yr.	M	3.27	2.92	3.12	2.46	1.97	2.28
	SD	1.36	1.29	1.37	1.40	1.25	1.27
	n	78	111	100	93	70	107
8 yr.	M	3.22	2.94	2.98	2.31	2.63	1.93
	SD	1.23	1.20	1.34	1.35	1.30	1.31
	n	102	141	101	128	108	122

Figure 1 displays graphs of the means of the ratees given by each of the six gender-by-age rater groups for the "Work With" instrument. Larger graphs can be found in Appendix I. The graphs in Figure 1 are presented in reduced size on a single page to help visualize overall results.

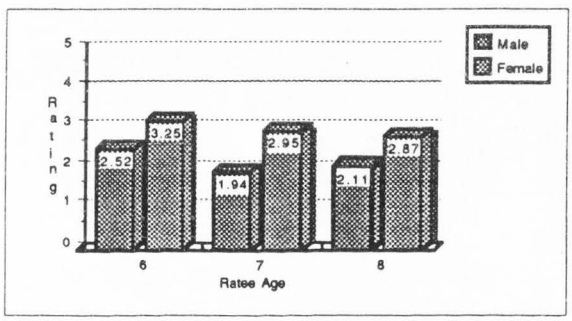
6-year-old Male Raters



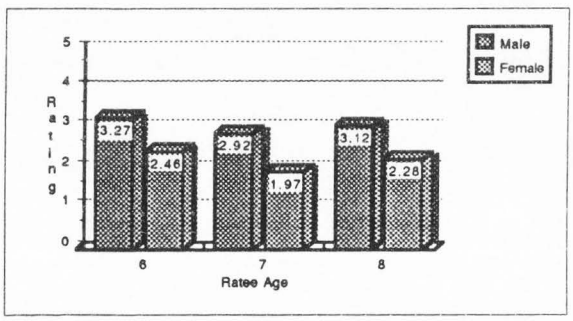
6-year-old Female Raters



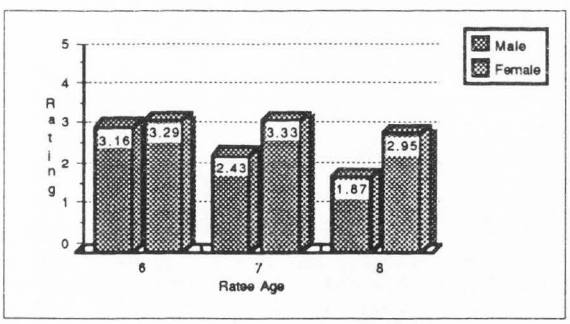
7-year-old Male Raters



7-year-old Female Raters



8-year-old Male Raters



8-year-old Female Raters

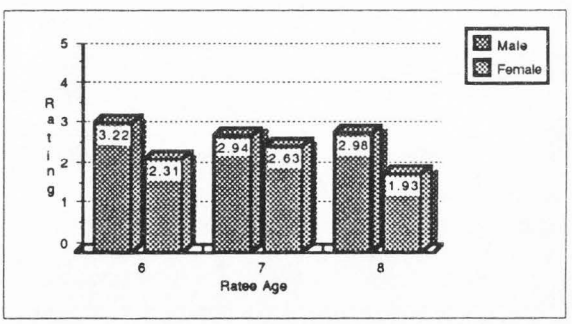


Figure 1. Graphs of mean peer acceptance scores for the "Work With" instrument.

Global Patterns in "Work With" Ratings

In this section, global patterns in the peer acceptance ratings for the "Work With" instrument are noted and explained. In subsequent sections, the results for the factors of age and gender are presented in more detail.

In looking at the overall peer acceptance scores for the 7- and 8-year-old raters, each gender-by-age group rated their same-gender, same-age classmates lower than any of the other gender-by-age groups. (Note: Lower ratings mean higher peer acceptance.) This means that 7- and 8-year-old students generally accept their same-age, same-gender classmates more than cross-gender, cross-age classmates. The 6-year-olds exhibit a different pattern. Though the difference in means is small, the 6-year-old males rated 7-year-old males lower, and the 6-year-old females rated the 8-year-old girls lower.

A global pattern for gender is evident--for every gender-by-age group the cross-gender means are higher than same-gender means. This pattern indicates that same-gender peers accept one another more than cross-gender peers as work partners. In other words, males prefer males and females prefer females as work partners. These results are consistent with prior literature on the effects of gender on peer preferences.

A global pattern for age also emerged. In general, age becomes a more important factor for the older raters, especially for males. This pattern is evident in the graphs of the mean peer acceptance scores in Figure 1. Note that for the 6-year old raters of both genders, the lines are approximately parallel, although less so for males. This indicates that there is little variation for "age of the ratee" for the 6-year-old raters, especially the females. The 7-year-old raters ratings follow a similar pattern, except with a little more variation. For the 8-year-olds raters, the graphs reveal considerably more variation across age of the ratee. Also, the within gender variation for age for the 8-year-old raters is greater for both genders than cross-gender variation.

To determine the amount of variance accounted for by the factors of age and gender on the peer acceptance ratings, eta squared was calculated for age of the ratee and gender of the ratee for each gender-by-age rater group. The results are presented separately for male and female raters in Tables 2 and 3, respectively.

Table 2

Eta Squared for Gender and Age of the Ratee for Male Rater Groups on the "Work With" Instrument

Rater Age	Gender	Age
6	.093	.000
7	.096	.023
8	.070	.061

Table 3

Eta Squared for Gender and Age of the Ratee for Female Rater Groups on the "Work With" Instrument

Rater Age	Gender	Age
6	.104	.000
7	.095	.016
8	.079	.013

The statistics attest to two other global patterns for gender and age. First, the values of eta squared for gender are greatest for the 6- and 7-year-old students and decrease for the 8-year-old raters. For this population the effect of gender on peer acceptance scores decreases for the oldest raters. Second, except for 8-year-old male raters, the eta squared values for age are very low when compared to gender. This points to the conclusion that gender has a much larger effect on peer acceptance ratings than age. An explanation for the result for 8-year-old males is outlined in the next section.

The Effect of Gender for the"Work With" Instrument

To quantify the magnitude of the effects for gender for each rater group, a mean effect size for gender was calculated for cross-gender differences. For each rater group, the reported mean effect size for gender is the mean of the absolute value of the effect sizes for each of the nine ratee cross-gender, cross-age comparisons (i.e., 6-year-old males to 6-year-old females; 6-year-old males to 7-year-old females; 6-year-old males to 8-year-old

females; 7-year-old males to 6-year-old females, etc.). The pooled standard deviation of each group of raters was used to calculate all effect sizes. The mean effect size for gender for each rater group and the within-group standard deviation of the nine comparisons are reported in Table 4. Tables showing the all nine effect sizes for each group are listed in Appendix J.

The results for the 6-year-olds show that differences for gender in the ratings are quite consistent, with effect sizes for males and females of .61 and .65, respectively. The standard deviation of the effect size is quite low for females, but is moderate for the 6-year-old males. This means that 6-year-old female raters make little distinction across the ages of the ratees while males vary more across ratee age.

The 7-year-olds demonstrate a consistent effect for gender with effect sizes for males and females equal at .62. This effect size is in the same range as the 6-year-olds. However, compared to the 6-year-old raters, there is more variation for both genders across ratee ages as reflected by the increase in the standard deviations of the effect sizes listed in Table 4.

Table 4

Cross-gender Mean Effect Size and SD for Gender for Gender-by-Age Rater Groups for the "Work With" Instrument

Rater Age		Rater Gender	
		Males	Females
6	Mean ES	.61	.65
	SD	.14	.04
7	Mean ES	.62	.62
	SD	.23	.19
8	Mean ES	.55	.56
	SD	.38	.24

The 8-year-old raters show a slight decrease in effect size for gender with effect sizes of .55 and .56 for males and females, respectively. The standard deviations of the effect sizes also increase, particularly for the male raters. However, the decrease in effect size for gender is not due to a general lessening of magnitude in all the cross-gender differences. Eight-year-old male raters rate 6-year-old males quite high, almost as high as 6- and 7-year-old females. (Note: High ratings mean lower peer acceptance.) In fact, the mean rating given to 6-year-old males is slightly higher than the mean rating given to 8-year-old females. This denotes that peer acceptance between 8-year-old males and 6-year-old males is as low as most cross-gender comparisons. Therefore, in calculating the mean effect size for gender for 8-year-old males, the lowered effect size differences between the 6-year-old males and their cross-gender, cross-age peers result in the lower mean effect size for gender for the 8-year-old males. The other cross-gender differences are as large or larger than the effect sizes for gender in the other gender-by-age groups. (Refer to Appendix J to see all nine cross-gender, cross-age comparisons for the 8-year-old male rater group.) This pattern also explains why the eta-squared statistic is larger for the 8-year-old males for age when compared to the other groups.

The pattern for 8-year-old females is similar to 8-year-old males, but less dramatic in magnitude. The decrease in effect size for gender is not due to a general lessening of magnitude in all the cross-gender differences. However, when compared to 8-year-old males, the 8-year-old cross-gender effects sizes are more moderate. Eight-year-old female raters rate 7-year-old females quite high (low peer acceptance). Therefore, in calculating the mean effect size for gender for 8-year-old females, the lowered effect size differences between the 7-year-old females and their cross-gender, cross-age peers result at least in part from the lower mean effect size for gender for the 8-year-old females. Again, the other cross-gender differences are approximately as large as differences for gender in the other groups. (See Appendix J for all nine cross-gender, cross-age comparisons for the 8-year-old female rater group.)

The Effect of Age for the "Work With" Instrument

To quantify the magnitude of the effect for age, effects sizes were computed for the three within-gender, cross-age comparisons for all gender-by-age groups. For example, for 6-year-old male raters, the absolute value of the effect sizes was computed for the following differences in ratee means: 6-year-old males to 7-year-old males, 6-year-old males to 8-year-old males, and 7-year-old males to 8-year-old males. The mean of these effects is reported as the effect size for age for male ratees for 6-year-old male raters. The same procedure was followed for female ratees as for 6-year-old male raters. The pooled standard deviation of each gender-by-age group of raters was used for the effect size calculations. (Tables listing the effect sizes for age for the within-gender age comparisons for ratees for all the gender-by-age groups of raters are in Appendix K.) Table 5 presents the mean effect size and standard deviation of the effect size for age for each of the gender-by-age groups.

Table 5

Mean Effect Size and Mean SD for Age for Gender-by-Age Rater Groups for the "Work With" Instrument

Rater Age		Rater Gender	
		Males	Females
6	Mean ES	.15	.04
	SD	.08	.03
7	Mean ES	.21	.18
	SD	.11	.08
8	Mean ES	.33	.22
	SD	.30	.15

Overall, the effect sizes for age are much lower than those for gender. For 6-year-old females, the effect size for gender is 16 times larger than the effect size for age. The differences for other groups, while not as large, are still pronounced. When considering the results for age, it is important to remember that gender explains considerably more about the variance in ratings than age as evidenced by the eta-squared statistics.

For 6-year-old raters, the mean effect sizes for age and standard deviations for age are quite low. This is particularly striking for female raters. The graph of the means for 6-year-old female raters reveals lines that are almost parallel. Together with the effect size results, age of the ratee has little effect on the rating given by 6-year-old female raters.

The same interpretation holds for the 6-year-old male raters, even though there is a little more variation. For 6-year-old male raters, the larger variation for age of the ratee is reflected by the larger standard deviation of the effect size and is also apparent when examining the graph for 6-year-old male raters in Figure 1.

The 7-year-old raters of both gender have approximately equal effect sizes for age with the effect size for males at .21 and .18 for females. The standard deviations of the effect sizes are also approximately equal.

In looking at the 7-year-old males raters, the largest effect size differences are between the 7- and 8-year-old ratees and the 6-year-old ratees for both genders. The effect size differences between the 7- and 8-year-olds decrease considerably. This indicates that for 7-year-old male raters, peer acceptance decreases for the younger students when compared to the 8-year-olds.

For 7-year-old female raters, the pattern is similar to that of the 7-year-old male raters. For both genders, the effect size differences are greater for the 6-year-olds compared to the 8-year-olds. This indicates lower peer acceptance for the 6-year-olds than the 8-year-olds.

The 8-year-old raters show the greatest variation for age when compared to the other groups. For 8-year-old male raters, there is large variation in the ratings for age for cross-age male peers. The 8-year-olds rate 6-year-old males as low as the female groups. Also, the difference between 8-year-old male raters and the 7-year-olds is quite large. These results are supportive of the eta-squared statistics and demonstrate that age is a more

important factor for 8-year-old males in their preference for work partners when compared to other raters.

For 8-year-old female raters the effect size for age also increases a small amount when compared to the other female groups. Interestingly, the 8-year-old female raters rate the 7-year-olds considerably higher (lower in peer acceptance) than the 6-year-old females. This is in contrast to the 8-year-old males who rate the younger males higher.

Table 6 lists the means, standard deviations, and number of observations of the peer acceptance scores for the "Play With" instrument. Figure 2 displays graphs of the means of the ratees given by each of the six gender-by-age rater groups for the "Play With" instrument. (Larger graphs can be found in Appendix L.) The graphs in Figure 2 are presented in reduced size on a single page to help in visualizing overall results.

Correspondence of "Work With" and"Play With" Instruments

The results on the "Play With" instrument are, with some small differences, almost identical to the results on the "Work With" instrument. This is readily apparent from examination and comparison of the tables and graphs of the means. To quantify the relationship, a correlation coefficient was calculated pairing the means given by the gender-by-age rater groups to each of the gender-by-age ratees on the two instruments. This correlation was .99, indicating a high degree of correspondence between scores on the peer acceptance scores on the "Work With" and "Play With" scales.

Another comparison was done to further explore the relationship between the peer acceptance scores on both instruments. This correlation coefficient paired the peer acceptance score of each student on both instruments. In this case, the peer acceptance score for each student was the mean of the ratings given by classmates. This coefficient equaled .94. Again, this result supports the conclusion that there was a strong relationship between the scores on the "Work With" and "Play With" instruments.

Further, the global patterns for gender and age that were outlined for the "Work With" instrument hold for the "Play With" results. Also, the magnitude of the peer acceptance scores on both instruments is virtually identical with the means for the entire population

Table 6

Mean Peer Acceptance Scores, SD and n for the "Play With" Instrument

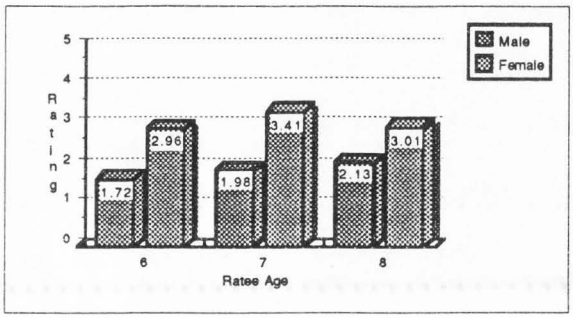
Gender / Age of Raters		Ratees: Males 6 yr.	Males 7 yr.	Males 8 yr.	Females 6 yr.	Females 7 yr.	Females 8 yr.
Males							
6 yr.	M	1.72	1.98	2.13	2.96	3.41	3.01
	SD	1.18	1.36	1.45	1.46	1.41	1.60
	n	74	107	71	82	78	104
7 yr.	M	2.43	1.74	2.01	3.13	3.08	2.93
	SD	1.40	1.08	1.20	1.38	1.29	1.24
	n	107	112	113	115	111	146
8 yr.	M	2.61	2.21	1.92	3.18	3.12	2.99
	SD	1.52	1.27	1.19	1.13	1.09	1.20
	n	71	109	92	97	100	107
Females							
6 yr.	M	2.94	2.88	2.98	1.83	1.97	1.89
	SD	1.52	1.49	1.41	1.24	1.26	1.23
	n	84	115	102	83	93	122
7 yr.	M	3.29	2.98	3.23	2.53	2.06	2.38
	SD	1.32	1.17	1.22	1.35	1.30	1.25
	n	75	107	106	93	73	112
8 yr.	M	3.25	3.09	3.01	2.37	2.77	1.76
	SD	1.20	1.21	1.32	1.37	1.35	1.14
	n	100	139	101	121	107	131

equaling 2.61 rounded to the nearest hundereth. The standard deviations for the population are 1.43 and 1.40 for the "Work With" and "Play With" instruments, respectively.

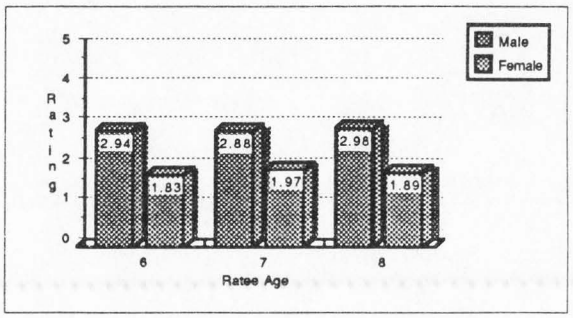
Global Patterns in "Play With" Ratings

In this section, global patterns in the peer acceptance ratings for the "Play With" instrument are noted and explained. In subsequent sections, the results for the factors of age and gender are presented in more detail.

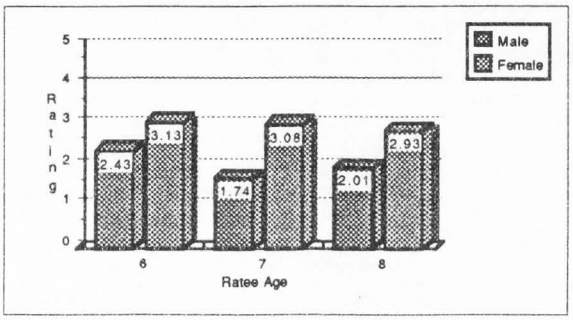
6-year-old Male Raters



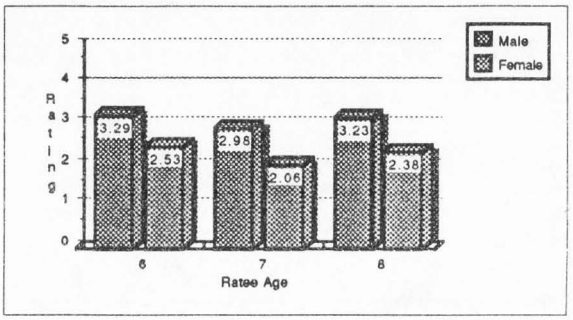
6-year-old Female Raters



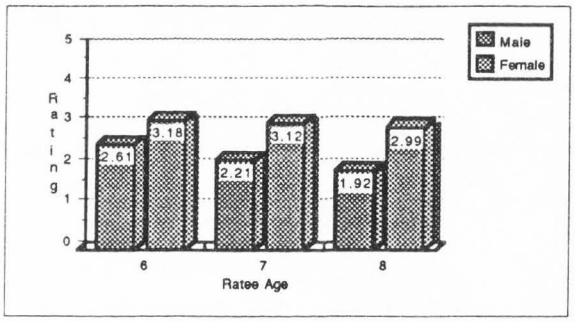
7-year-old Male Raters



7-year-old Female Raters



8-year-old Male Raters



8-year-old Female Raters

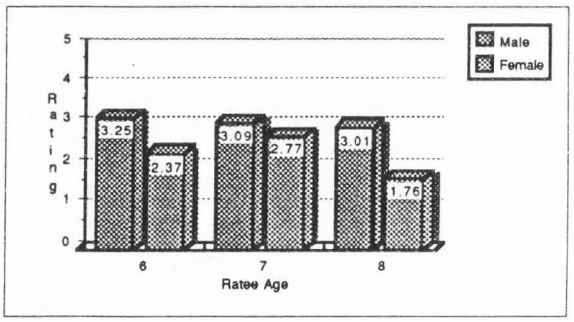


Figure 2. Graphs of mean peer acceptance scores for the "Play With" instrument.

Without exception, each gender-by-age group rated their same-gender, same-age classmates lower than any of the other gender-by-age groups. (Note: Lower ratings mean higher peer acceptance.) This means that as play partners, students accept their same-age, same-gender classmates more than cross-gender, cross-age classmates.

A global pattern for gender is clear -- for every gender-by-age group the cross-gender means are higher than same-gender means. This pattern indicates that males prefer males and females prefer females as play partners. As with the "Work With" results, the results on the "Play With" instrument show clear evidence of gender cleavage in the multiage classrooms at EBLS.

Eta squared was calculated for age of the ratee and gender of the ratee for each gender-by-age rater group. Eta-squared estimates the amount of variance accounted for by the factors of age and gender for the peer acceptance ratings. The results are presented separately for male and female raters in Tables 7 and 8, respectively.

The eta-squared statistics attest to three other global patterns for gender and age for the "Play With" instrument. First, the values of eta squared for gender are greatest for the 6-year-old students and decrease as the raters get older. This means that the effect of gender on peer acceptance scores is greatest for the younger raters and decreases as raters get older. Second, the eta-squared values for age are very low when compared to gender. This means that gender explains much more of the variance in peer acceptance scores than age. Finally, the variance accounted for by age is smallest for the younger students and increases with age of the rater.

Table 7

Eta Squared for Gender and Age of the Ratee for Male Rater Groups on the "Play With" Instrument

Rater Age	Gender	Age
6	.146	.010
7	.133	.016
8	.105	.019

Table 8

Eta Squared for Gender and Age of the Ratee for Female Rater Groups on the "Play With" Instrument

Rater Age	Gender	Age
6	.126	.000
7	.099	.016
8	.093	.033

The Effect of Gender for the "Play With" Instrument

To quantify the magnitude of the effect for gender for each rater group, a mean effect size for gender was calculated for cross-gender differences. The method used to calculate the mean effect is the same described in the "Work With" results. The mean effect size for gender for each rater group and the within-group standard deviation of all nine comparisons are reported in Table 9 for the "Play With" instrument. Tables showing the nine effect sizes for each group are listed in Appendix M.

Table 9

Mean Effect Size and Mean SD for Gender for Gender-by-Age Rater Groups on the "Play With" Instrument

		Rater Gender	
Rater Age		Males	Females
6	Mean ES	.77	.71
	SD	.18	.05
7	Mean ES	.72	.63
	SD	.23	.19
8	Mean ES	.57	.60
	SD	.40	.33

The results for the 6-year-olds show effect sizes for gender in the same range with effect sizes of .77 and .71 for males and females, respectively. The standard deviation for 6-year-old males is in the moderate range, while the standard deviation for females is low. For 6-year-old females, the effect for gender is consistent across the ages of the ratee. However, 6-year-old male ratings reveal more variation across the age of the ratee.

The effect size for 7-year-olds males is .72, and about equal to the effect sizes of the 6-year-old raters. The 7-year-old female raters show a slight decrease in effect size for gender to .63. The 7-year-old raters demonstrate more moderate variation across ratee ages as reflected by the increase in the standard deviations of the effect sizes. It is interesting to note that for the 7-year-old males, the graphs indicate more variation within gender than across gender. One interpretation of this pattern is that as play partners, females are viewed about the same by the raters. However, among males age makes more of a difference in play partner preference. This is particularly striking in the ratings of the 7-year-old males. Note that the 7-year-old males rate the 6-year-old males considerably higher (lower in peer acceptance) than their agemates and the 8-year-olds.

The 8-year-old raters show a slight decrease in effect size for gender compared to the other rater groups with effect sizes of .57 and .60 for males and females, respectively. The standard deviations of the effect sizes also increase for both gender when compared to the other raters. However, like the results on the "Work With" instrument, the decrease in effect size for gender is <u>not</u> due to a general lessening of magnitude in all cross-gender comparisons.

Eight-year-old male raters rate 6-year-old males quite high. (Note: High ratings mean lower peer acceptance.) This denotes that peer acceptance between 8-year-old males and 6-year-old males is low. Therefore, in calculating the mean effect size for gender for 8-year-old males, the lowered effect size differences between the 6-year-old males and their cross-gender, cross-age peers, results in the lower mean effect size for gender for the 8-year-old males. The other cross-gender differences are as large or larger as the effect sizes for gender in the other gender-by-age groups. (Refer to Appendix N to see all nine cross-gender, cross-age comparisons for the 8-year-old male rater group.) This pattern is similar to that found in the "Work With" results, but lower in magnitude.

The pattern for 8-year-old females is similar to 8-year-old males. Eight-year-old female raters rate 7-year-old females quite high (low peer acceptance). Therefore, in calculating the mean effect size for gender for 8-year-old females, the lowered effect size differences between the 7-year-old females and their cross-gender, cross-age peers result at least in part from the lower mean effect size for gender for the 8-year-old females. Again, the other cross-gender differences are approximately as large as differences for gender in the other groups. (See Appendix N for all nine cross-gender, cross-age comparisons for the 8-year-old female rater group.)

The Effect of Age for the"Play With" Instrument

To quantify the magnitude of the effect for age, effects sizes were computed for the three within-gender, cross-age comparisons for all gender-by-age groups. The method used to calculate these effect sizes is the same as described for the "Work With" results. (Tables listing the effect sizes for age for the within-gender age comparisons for ratees for all the gender-by-age groups of raters are in Appendix N.) Table 10 presents the mean effect size and standard deviation of the effect size for age for each of the gender-by-age groups.

Table 10

Mean Effect Size and Mean SD for Age for Gender-by-Age Rater Groups on the "Play With" Instrument

		Rater Gender	
Rater Age		Males	Females
6	Mean ES	.18	.04
	SD	.11	.02
7	Mean ES	.19	.17
	SD	.15	.09
8	Mean ES	.19	.27
	SD	.15	.22

Overall, the effect sizes for age are much lower than those for gender. As evidenced by the eta squared statistics, it is important to consider that gender explains far more of the variance in peer acceptance ratings than age.

In looking at the effect sizes for age on the "Play With" instrument, the differences between the genders is the most striking. The effect sizes and standard deviations for the male raters are quite consistent. However, the female raters show considerably more variation in both effect size and the standard deviation of the effect size across rater age.

The 6-year-old female raters are lower than the males in both effect size and standard deviation of the effect size. The 7-year-olds of both genders are approximately equal in effect size and standard deviation. However, the 8-year-old females show quite an increase in effect size and standard deviation especially when compared to the 6-year-old females. This indicates that age is a more important factor for 8-year-old females on the "Play With" instrument than for the other rater groups. This observation is supported by the eta-squared statistics for age. The eta-squared statistics reveal that for the 8-year-old female raters, age accounts for approximately twice as much variance as for the next highest rater group.

Variance in Peer Acceptance Scores Explained by Age and Gender

To determine the variance in peer acceptance scores accounted for by the factors of gender and age and their interaction, an r-squared was calculated for each of the six rater groups. The results for the "Work With" ratings are presented in Table 11, and the results for the "Play With" ratings in Table 12.

On the "Work With" instrument the R-squared statistics ranges from .10 to .15 with a mean of .12. The 8-year-old males are slightly higher than the other groups. On the the "Play With" instrument, the R-squared values are higher, ranging from .11 to .16 with a mean of .14.

Test-Retest Reliability of the Sociometric Instruments

Test-retest reliability results for both "Play With" and "Work With" instruments used in this study were in the high range. The correlation coefficients for the "Work With" and "Play With" instruments were .92 and .94, respectively.

Table 11

R-squared for the "Work With" Instrument

	Rater Gender	
Rater Age	Males	Females
6	.11	.11
7	.12	.10
8	.15	.10

Table 12

R-squared for the "Play With" Instrument

	Rater Gender	
Rater Age	Males	Females
6	.16	.13
7	.15	.11
8	.13	.15

CHAPTER V
DISCUSSION

Before proceeding with discussion, a word of caution is needed about the nature of the sociometric instruments and one important limitation of this study. Sociometric instruments measure preferences, not behavior. For example, even though there are differences in means between cross-gender peers, it should not be over-interpreted to mean that individuals will not work or play with cross-gender peers. To determine if preference differences result in behavior differences an observational study would be required. This question is beyond the scope of this study. Again, this study explored preferences, not behavior.

The Effect of Gender on Peer Acceptance Scores

The data on gender cleavage show a consistent pattern and establish that gender cleavage exists in the multiage classes at EBLS. In every case, on both the "Play With"and "Work With" instruments, the ratings given to cross-gender peers were higher, indicating lower peer acceptance. As measured by these sociometric instruments, children prefer to work and play with same-gender peers. As was pointed out in the review of literature, gender cleavage is common among children (Hartup, 1983).

The magnitude of effect sizes for gender is slightly higher on the "Play With" compared to the "Work With" instrument for the 6- and 7-year-olds. This may indicate that more gender separation exists in play activities compared to work tasks for EBLS students. This finding is consistent with literature showing that male and female play is different (Spodek & Saracho, 1994). In a review of literature on gender differences in play, researchers found that males engage in more rough-and-tumble play than females (Johnson, Christie, & Yawkey, 1987). Assuming that behavior during work periods in the classroom is more standard across gender because of teacher-imposed behavioral requirements, it seems logical that gender differences in play preferences would be more pronounced. During play periods children are free to chose their own activities and the differences in male and female play patterns may lead to greater gender segregation.

The effect sizes for gender for the 8-year-old students decrease on both instruments, but the explanation is different for males and females raters and reveals an interaction for age of the ratee. For 8-year-old male raters, the decrease in effect size for gender results from the high peer acceptance scores (lower peer acceptance) given to 6-year-old male ratees. The effect size differences between the 8-year-old males and the other cross-gender groups do not show a decrease. For 8-year-old female raters, the decrease in effect size for gender results from the high peer acceptance scores (lower peer acceptance) given to 7-year-old female ratees. As with the 8-year-old males, the other cross-gender comparisons do not decrease.

This pattern reveals that 8-year-old males do not prefer to play or work with the 6-year-old males compared to other males. Observation of 8-year-old male behavior may demonstrate segregation from 6-year-old males in both work and play situations. In contrast, age segregation for 8-year-old females might be found with the 7-year-old females. Why this difference in preference patterns occurs is not apparent and may be a subject for future research.

The Effect of Age on Peer Acceptance Scores

Overall, the data on age reveal a small effect for age on both "Play With" and "Work With" instruments, especially when compared to preference differences based on gender. The initial impetus for the study was concern among those involved in the implementation of multiage grouping at EBLS about the nature of cross-age interaction. The relatively small effect of age compared to the effect of gender was surpising.

The previously cited study by Ellis et al. (1981) may provide an explanation of the results. They stated, "authors who believe that children are strictly segregated by age may be emphasizing the importance of children's school experience to the neglect of children's social experiences outside of school" (p. 406).

Interestingly, the Ellis et al. study was done in Salt Lake City among a population that is similar to the population of EBLS. According to their study, children aged 1-12 are not age-segregated in their social interactions. Children may have far more experience

dealing with cross-age peers in church activities, scouts, neighborhood play groups, and so forth than is commonly thought. An overemphasis on age-segregation in school may lead to unwarranted concern about children's relationships with cross-age peers.

"Work With" and "Play With" Instruments Measure Different Dimensions of Peer Acceptance

The data show a high correspondence between scores on the "Play With" and "Work With" instrument. This supports the conclusion that students in the multiage classrooms did not rate their peers differently on the "Play With" and "Work With" criteria. This finding differs from the results reported by Oden and Asher (1977) and Singleton and Asher (1979), who found that students do distinguish ratings based on the "Work With" versus the "Play With" criteria. However, the differences may be accounted for by the age of the students in the studies. Based on reported grade level in the cited studies, students were 8 and 9 years old and 11 and 12 years old, respectively. In the present study, the students ranged in age from 6 to 8 years old. It may be that older students make different judgments on the "Play With" and "Work With" criteria, while younger students do not.

Further, two other studies support the high correlation between "Work With" and "Play With" instruments found in the present study. For example, in a study with deaf children aged 12 to 15, the reported correlation coefficient between scores on a "Work With" and "Play With" instruments was .95 (Bolton, Turnbow, & Marr, 1984). The results of the Bolton et al. study are consistent with the result for the EBLS population even though the age range is different. Another study (La Greca, 1981) reported a correlation between "Play With" and "Work With" instrument of .90 for subjects in the third, fourth, and fifth grades (8-, 9-, and 10-year-olds).

Finally, the high correspondence between scores on the two measures may be due to high correlation of both measures with a common factor. Merrill (1994) stated that rating-scale sociometrics measure likability (p. 122). A conclusion that would be consistent with the results of this study is that both instruments tap a common "likability" factor for students in this general age range.

The Reliability of the Sociometric Instruments Used

Test-retest reliability for both "Play With" and "Work With" instruments was in the high range. Other studies using pictures in rating-scale methodology with young children have yielded similar reliability estimates (Asher et al., 1979; McCandless & Marshall, 1957; Odom & DuBose, 1981). However, the procedures used in those studies included time-consuming individual interviews. The methodology used in this study had the advantages of using pictures without the need for individual interviews. Including the rating-scale training, the instruments took a total of 20-30 minutes to administer per class. At 5 minutes per student, individual interviews would have taken about 4.5-5 hours. Based on the test-retest reliabilities for the instruments and the ease and speed of administration, it is recommended that researchers conducting sociometric studies consider the methodology used in this study.

CHAPTER VI
CONCLUSION

Implications for Practice for Multiage Classrooms

The results of this study provide some direction for those considering the implementation of multiage groups. First, this study supports the existence of "gender cleavage" in primary-grade, multiage classrooms. In other words, males prefer males and females prefer females as work and play partners. As was mentioned earlier, this finding is supportive of the great majority of research done about gender preferences in children (Hartup, 1983). Those implementing multiage classrooms may consider activities and instructional practices designed to reduce the gender preference differences. One possible strategy may be the use of cross-gender cooperative learning groups in which males and females work together on common learning goals.

A surprising result of the study was the small amount of variance explained by age. If supported by further research, this finding could be helpful for those implementing multiage classrooms. When multiage classrooms were first proposed at EBLS, administrators, teachers, and parents were concerned about the social effects of placing children of different ages in the same classroom (Byrnes et al., 1994). However, this study reveals that gender, not age, accounts for preferences in play and work partners. Since it is standard practice to assign males and females to the same classroom, it seems educators and parents are <u>not</u> concerned with the effects of the gender differences--the concern was focused on the age differences. This study lessens those concerns by demonstrating that age accounts for very little of the variance in peer acceptance scores for students at this age. Practitioners may well be advised to pay more attention to multiage classroom practices that encourage positive cross-gender interaction and worry less about effects of age differences.

However, it should be noted that the 8-year-olds of both genders show an increase in the effect of age on their preferences on both instruments. This may be due to their maturity and the resulting differences in social behavior. Anecdotally, it was reported by EBLS teachers that the 8-year-olds tended to work and play with other 8-year-olds and

isolated themselves from the younger students. The data from this study support these anecdotal reports. Based on their observations, some teachers suggested that the 8-year-olds not be included with the younger children in the multiage setting.

Whether 8-year-olds should be included in multiage classrooms is an important consideration for practice. Some may look at the differences and say that 8-year-olds need to be separated. However, one of the reasons for multiage classrooms is to have a range of academic and social abilities and differences. Advocates of multiage grouping say that these differences stimulate academic and social growth among all students involved (Katz et al., 1990). Separating the 8-year-old students in primary-grade multiage classrooms would decrease the range of academic and social skills and may defeat one of the core reasons for implementing multiage classrooms.

Limitations of the Study

One limitation of the study was already mentioned--the fact that sociometric instruments measure preferences, not behavior. As a result, it cannot be known from this study how, or if, the preference differences translate into behavior differences. As was alluded to earlier, anecdotal observations seem to confirm the findings of the study, but were not collected in a systematic way.

Another limitation was the population used. EBLS was an experimentally accessible population that had implemented multiage grouping in the primary grades. There were no other schools in the area using the multiage configuration. Expansion of the study to other cites would have required significant financial resources. As a result of the population used, the generalizability of the findings is limited.

Future Directions for Research

There are several needs and questions for future research that resulted from the present study. First, there is a need to correlate behavioral observation with sociometric data concerning peer acceptance. The primary reason for this is to determine how, or if, the differences found in preferences affect actual classroom and schoolyard behavior. Second,

does the magnitude of the "gender cleavage" in multiage versus same-age classrooms differ? If gender cleavage differs, it may have implications for instructional practice, and may affect the long-term development of gender bias.

Third, can differences in gender and age preferences in multiage classrooms be reduced through various classroom interventions? If so, the intervention techniques used can be beneficial to those implementing multiage classrooms.

Finally, there is a need to replicate the study of peer acceptance in multiage classrooms at different types of schools and at different grade levels. Age of the students and schoolwide factors such as socioeconomic status, racial composition, region, and so forth may strongly influence results.

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APPENDIXES

APPENDIX A: PLAY WITH INSTRUMENT

Play With Scale

Name: _____

Student Name #1

Picture of student #1

Really like playing with | Kind of like playing with | Neither like or dislike playing with | Kind of dislike playing with | Really dislike playing with

Student Name #2

Picture of student #2

Really like playing with | Kind of like playing with | Neither like or dislike playing with | Kind of dislike playing with | Really dislike playing with

Student Name #3

Picture of student #3

Really like playing with | Kind of like playing with | Neither like or dislike playing with | Kind of dislike playing with | Really dislike playing with

Student Name #4

Picture of student #4

Really like playing with | Kind of like playing with | Neither like or dislike playing with | Kind of dislike playing with | Really dislike playing with

Student Name #5

Picture of student #5

Really like playing with | Kind of like playing with | Neither like or dislike playing with | Kind of dislike playing with | Really dislike playing with

APPENDIX B: PLAY WITH ADMINISTRATION SCRIPT

Script for "Play With" Rating Scale

Note: To administer the "Play With" rating scale you will need the following items:

1) a copy of the "Play With" rating instrument for each child;
2) a sharpened pencil for each child;
3) an overhead projector;
4) an overhead marking pen;
5) overhead of the scale used for rating;
6) script.

I am going to pass out a packet of paper to you. By doing this packet you will be telling me what you think about playing with the other members of your class. What you tell me is **private**. Do **not** look at other student's papers and do **not** show your paper to other students. What you tell me will **not** be shown to anyone at the school, so you can tell me what you really think. Also, after you finish the packets you should **not** discuss how you answered with anyone. Remember, what you think is **private**.

Now I will pass out the packet. The packet will be placed on your desk face down. Do not turn over the packet until I tell you. (Pass out the "Play With" scale.)

Now turn over the packet and write your first and last name in the blank at the top of the page. Remember to put your first and last name. When you are done, put your pencil down. Do not write anywhere else on the page until I give you some more directions.

(Wait for students to write names. Check to see that students have written both names.)

You will tell me what you think about playing with each member of the class by using the following scale. (Display the overhead of the scale.)

Really like playing with	Kind of like playing with	Neither like or dislike playing with	Kind of dislike playing with	Really dislike playing with

Remember, if you really like to play with a student, you would mark the cartoon face that is really smiling and has the words, "really like playing with". If you **really** do **not** like playing with a student, you would mark the cartoon face that is really frowning and has the words, "really dislike playing with". If you neither like or dislike playing with a student, you would mark the cartoon face that is neither smiling or frowning and has the words "neither like or dislike playing with". You can also mark the other cartoon faces if you "kind of like" or "kind of dislike" playing with a student.

Listen carefully to me as I read and do not begin to write until I tell you to begin.

> Pretend that your teacher has given you some free time to play a **fun** game in the classroom. Look at the list of students in your class. For each student on each page, put a **big** "x" on the **cartoon** face that tells me what you would think about **playing with** that student.

Remember, think carefully about each student before you answer and tell me what you **really** think about playing with that student. Also, give an answer for each student on each page. If you don't know who a student is from the name and picture, raise your hand and I will help you.

When you come to your name and picture circle it and go on to the next student.

When you finish, turn the packet over, put down your pencil, and sit quietly while other students complete their answers.

Remember, do **not** look on other student's papers. Your answers are **private**.

Begin now.

(Walk around and monitor students. Mention periodically that students should keep their eyes on their own paper. Answer any questions that they may have. If a student is looking around, remind them not to.)

Now that you are finished, I will collect the packets from you.

However, before I collect the papers I want to make sure that you have put your name on the packet. Please check to see that your name is on the front of the packet.

Next, look through your packet to check to see that you have put an "x" on a cartoon face for every student. If you have not, please mark it now.

Remember, the answers that you gave me today are **private**. You should **not** discuss how you answered with other students.

(Collect the packets.)

APPENDIX C: WORK WITH INSTRUMENT

Work With Scale

Name: _____

Student Name #1 Picture of student #1	 Really like working with	 Kind of like working with	 Neither like or dislike working with	 Kind of dislike working with	 Really dislike working with
Student Name #2 Picture of student #2	 Really like working with	 Kind of like working with	 Neither like or dislike working with	 Kind of dislike working with	 Really dislike working with
Student Name #3 Picture of student #3	 Really like working with	 Kind of like working with	 Neither like or dislike working with	 Kind of dislike working with	 Really dislike working with
Student Name #4 Picture of student #4	 Really like working with	 Kind of like working with	 Neither like or dislike working with	 Kind of dislike working with	 Really dislike working with
Student Name #5 Picture of student #5	 Really like working with	 Kind of like working with	 Neither like or dislike working with	 Kind of dislike working with	 Really dislike working with

APPENDIX D: WORK WITH ADMINISTRATION SCRIPT

Script for "Work With" Rating Scale

Note: To administer the "Work With" rating scale you will need the following items:

1) a copy of the "Work With" rating instrument for each child;
2) a sharpened pencil for each child;
3) an overhead projector;
4) an overhead marking pen;
5) overhead of the scale used for rating;
6) script.

Next, I am going to pass out another packet of paper to you. By doing this packet you will be telling me what you think about working with the other members of your class. What you tell me is **private**. Do **not** look at other student's papers and do **not** show your paper to other students. What you tell me will **not** be shown to anyone at the school, so you can tell me what you really think. Also, after you finish the packets you should **not** discuss how you answered with anyone. Remember, what you think is **private**.

Now I will pass out the packet. The packet will be placed on your desk face down. Do **not** turn over the packet until I tell you. (Pass out the "Work With" scale.)

Now turn over the packet and write your first and last name in the blank at the top of the page. Remember to put your first and last name. When you are done, put your pencil down. Do **not** write anywhere else on the page until I give you some more directions.

(Wait for students to write names. Check to see that students have written both names.)

You will tell me what you think about working with each member of the class by using the following scale. (Display overhead of the scale.)

Really like working with	Kind of like working with	Neither like or dislike working with	Kind of dislike working with	Really dislike working with

Remember, if you really like to work with a student, you would mark the cartoon face that is really smiling and has the words, "really like working with". If you really do **not** like working with a student, you would mark the cartoon face that is really frowning and has the words, "really dislike working with". If you neither like or dislike playing with a student, you would mark the cartoon face that is neither smiling or frowning and has the words "neither like or dislike working with". You can also mark the other cartoon faces if you "kind of like" or "kind of dislike" working with a student.

Listen carefully to me as I read.

> Pretend that your teacher has given you an <u>important</u> assignment to work on. Look at the list of students in your class. For each student on each page, put a <u>big</u> "x" on the <u>cartoon</u> face that tells me what you would think about <u>working</u> with that student on the assignment.

Remember, think carefully about each student before you answer and tell me what you **really** think about working with that student. Also, give an answer for each student on each page. If you don't know who a student is from the name and picture, raise your hand and I will help you.

When you come to your name and picture circle it and go on to the next student.

When you finish, turn the packet over, put your pencil down, and sit quietly while other students complete their answers.

Remember, do **not** look on other student's papers. Your answers are **private**.

Begin now.

(Walk around and monitor students. Mention periodically that students should keep their eyes on their own paper. Answer any questions that they may have. If a student is looking around, remind them not to.)

Now that you are finished, I will collect the packets from you. However, before I collect the papers I want to make sure that you have put your name on the packet. Please check to see that your name is on the front of the packet.

Next, look through your packet to check to see that you have put an "x" on a cartoon face for every student. If you have not, please mark it now.

Remember, the answers that you gave me today are **private**. You should **not** discuss how you answered with other students.

(Collect the packets.)

APPENDIX E: PLAY WITH SCENARIO

"Play With" Scenario

Pretend that your teacher has given you some free time to play a **fun** game in the classroom. Look at the list of students in your class. for each student on each page, put a **big** "x" on the cartoon face that tells me what you would think about **playing with** that student.

APPENDIX F: WORK WITH SCENARIO

"Work With" Scenario

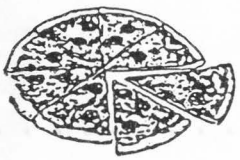
Pretend that your teacher has given you an **important** assignment to work on. Look at the list of students in your class. for each student on each page, put a **big** "x" on the cartoon face that tells me what you would think about **working with** that student.

APPENDIX G: RATING-SCALE TRAINING INSTRUMENT

Likert Scale Training

Name: _____

Pizza

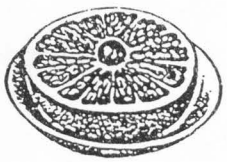


Really like eating | Kind of like eating | Neither like or dislike eating | Kind of dislike eating | Really dislike eating

Asparagus

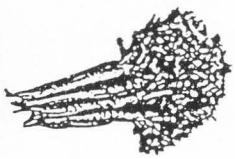
Really like eating | Kind of like eating | Neither like or dislike eating | Kind of dislike eating | Really dislike eating

Grapefruit



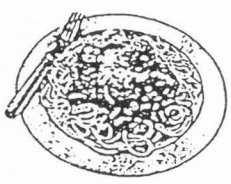
Really like eating | Kind of like eating | Neither like or dislike eating | Kind of dislike eating | Really dislike eating

Carrots



Really like eating | Kind of like eating | Neither like or dislike eating | Kind of dislike eating | Really dislike eating

Spaghetti



Really like eating | Kind of like eating | Neither like or dislike eating | Kind of dislike eating | Really dislike eating

Likert Scale Training 1

Ham

Really like eating | Kind of like eating | Neither like or dislike eating | Kind of dislike eating | Really dislike eating

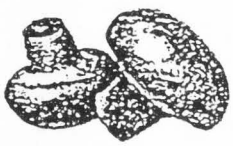
String Beans

Really like eating | Kind of like eating | Neither like or dislike eating | Kind of dislike eating | Really dislike eating

Chicken

Really like eating | Kind of like eating | Neither like or dislike eating | Kind of dislike eating | Really dislike eating

Mushrooms



Really like eating | Kind of like eating | Neither like or dislike eating | Kind of dislike eating | Really dislike eating

Corn

Really like eating | Kind of like eating | Neither like or dislike eating | Kind of dislike eating | Really dislike eating

APPENDIX H: RATING-SCALE TRAINING ADMINISTRATION GUIDE

Script for Likert Scale Training Packet

Note: To conduct the training on the rating scale you will need the following items:

1) a copy of the Likert Scale Training Packet for each child;
2) a sharpened pencil for each child;
3) an overhead projector;
4) an overhead marking pen;
5) overhead slide of first page of the Likert Scale Training Packet.

Hi. My name is _____. Today I am going to ask you to do a job for me. I am not giving you a test --- I am just going to ask you what you think about some things. First, I need to give you some instructions.

I want you to clear your desks of everything. You don't even need to have a pencil. (Wait for students to clear desks.)

Now, I am going to pass out a packet of paper and a pencil to you. The packet will be placed on your desk face down. Do not turn over the packet until I tell you to. (Pass out the pencil and Rating Scale Training Packet.)

Now turn over the packet and write your first and last name in the blank at the top of the page. Remember to put your first and last name. When you are done, put your pencil down. Do not write anywhere else on the page until I give you some more directions.

(Wait for students to write names. Check to see that students have written both names.)

Now I am going to show you how to use a rating scale. You will use the rating scale to tell me what you think, so you will need to know how it works. Listen carefully.

On you page, look at the picture of the pizza. Next to the picture of the pizza is a row of five cartoon faces. The first cartoon face is really smiling, the next cartoon face is smiling a little, the next cartoon face is not smiling or not frowning, the next cartoon face is frowning a little, and the last cartoon face is really frowning.

Also, notice the words under each cartoon face. Under the first face are the words "Really like eating", under the next face are the words "Kind of like eating", under the next face are the words "Neither like or dislike eating", under the next face are the words "Kind of dislike eating", and under the next face are the words "Really dislike eating".

By using these cartoon faces and the words under them you can tell me what you think about eating different kinds of foods.

Let me give you an example. (Display overhead.) Now, look at the overhead. I really like to eat pizza. To show that I really like eating pizza I will put an big "x" over the cartoon face that is really smiling and that has the words "Really like eating". Watch as I do that. (Place an big "x" over the first face.)

Now on your paper, put an big "x" on the cartoon face that tells me what you think about eating pizza. You do not have to mark the same cartoon face I did. Do not look at other student's papers.

(Walk around and see that students are marking the paper correctly.)

Let's look at another example. (Display overhead.) Look at the picture of the asparagus on the overhead. To show that I **really dislike** eating asparagus I will put an **big** "x" over the cartoon face that is **really frowning** and that has the words "Really dislike eating". Watch as I do that. (Place an **big** "x" over the last face.)

By putting the **big** "x" over the cartoon face that is **really** frowning and has the words "**really dislike eating**", I told you that I **really** do **not** like eating asparagus.

Now on your paper, put an **big** "x" on the cartoon face that tells me what **you** think about eating asparagus. You do **not** have to mark the same cartoon face I did. Do **not** look at other student's papers.

(Walk around and see that students are marking the paper correctly.)

Another example. (Display overhead.) Look at the picture of the grapefruit on the overhead. I **kind of like** eating grapefruit so I will put a big "x" over the cartoon face that is smiling a little and has the words "kind of like eating". By putting the **big** "x" over that cartoon face, I told you that I **kind of like** eating grapefruit.

Now on your paper, put an **big** "x" on the cartoon face that tells me what **you** think about eating grapefruit. You do **not** have to mark the same cartoon face I did. Do **not** look at other student's papers.

(Walk around and see that students are marking the paper correctly.)

One more example. (Display overhead.) Look at the picture of the carrots on the overhead. I neither like eating or dislike eating carrots so I will put a big "x" over the cartoon face that is neither smiling or frowning and has the words "neither like or dislike eating". By putting the **big** "x" over that cartoon face, I told you that I **neither like or dislike** eating carrots.

Now on your paper, put an **big** "x" on the cartoon face that tells me what **you** think about eating carrots. You do **not** have to mark the same cartoon face I did. Do **not** look at other student's papers.

(Walk around and see that students are marking the paper correctly.)

Now, for the next picture, mark the cartoon face that tells me what you think about eating spaghetti.

(Walk around and see that students are marking the paper correctly.)

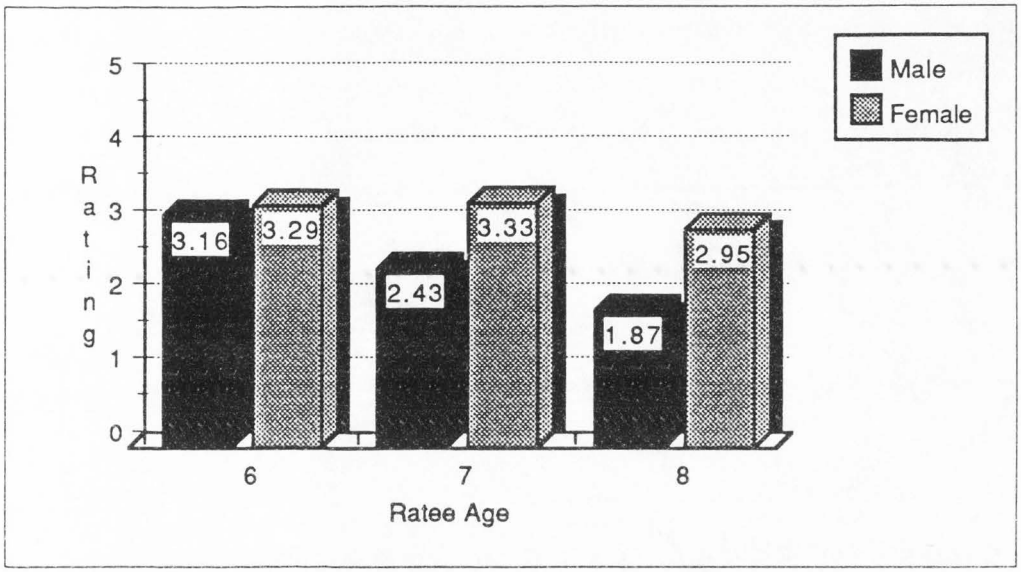
Are there any questions about how to use the rating scale to tell me what you think? (Respond to questions.)

When I tell you to begin, I want you to complete the rest of the questions. Mark each cartoon face to tell me what you think about eating that food. I want you to really think about each food before you mark it. Remember, do **not** look at other student's papers. If you do not know what a food is, raise your hand and I will help you.

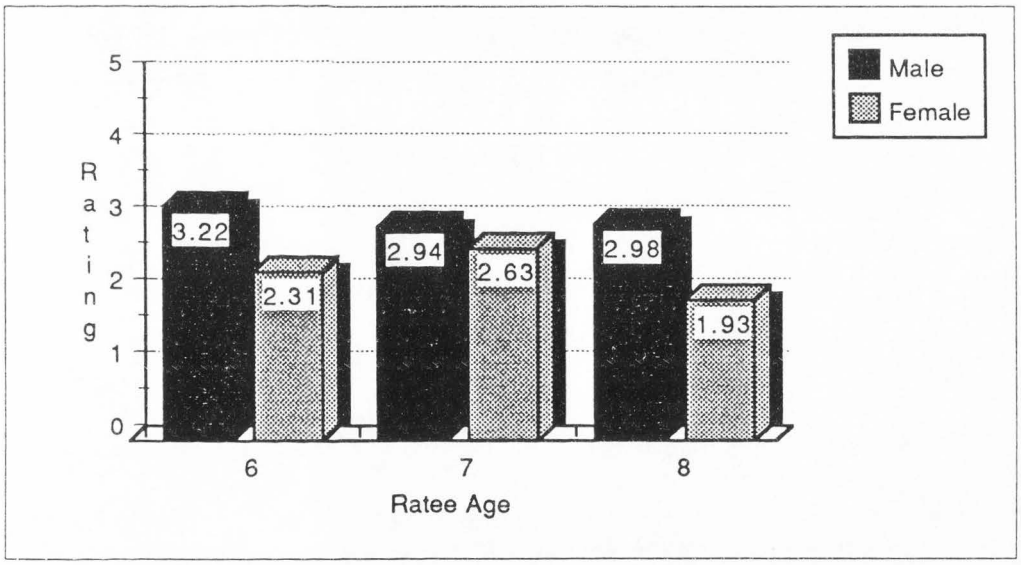
You can begin now. (Walk around room and observe children marking the page. Answer any questions that come up.)

(Praise students for the good job and collect the training packet.

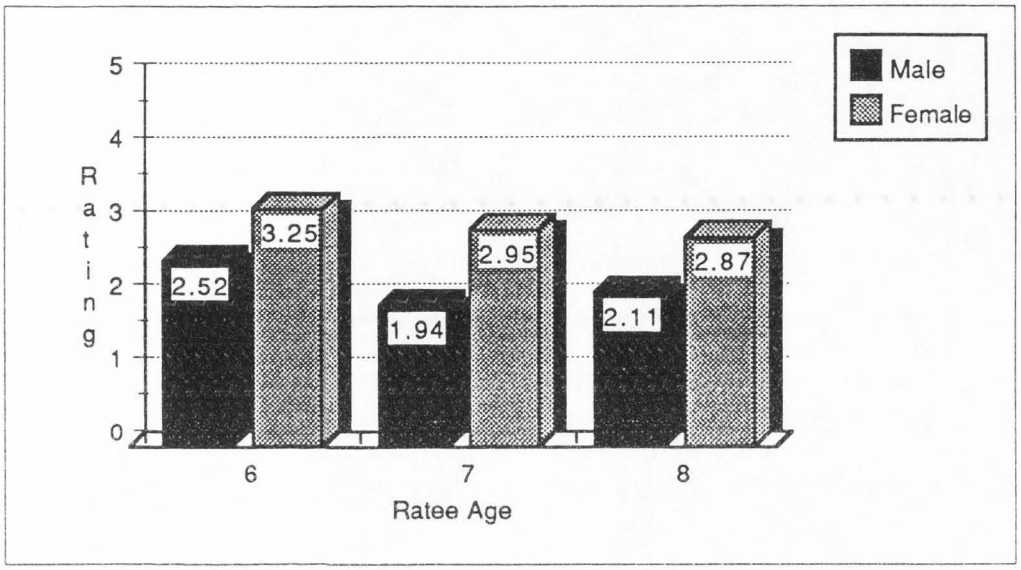
APPENDIX I: GRAPHS OF WORK WITH SCORES



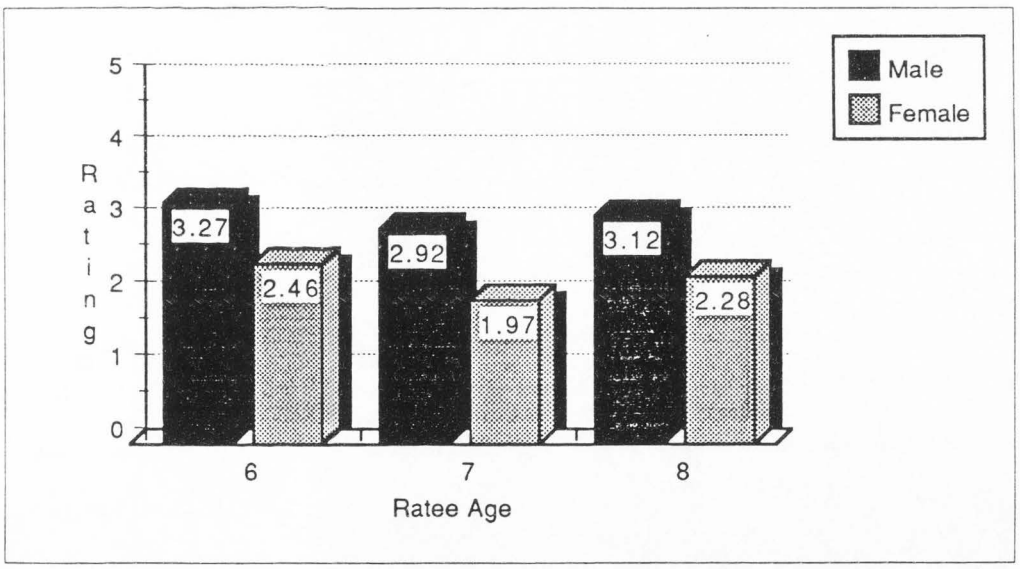
Graph Mean Peer Acceptance Scores on the "Work With" Instrument
8-year-old Male Raters



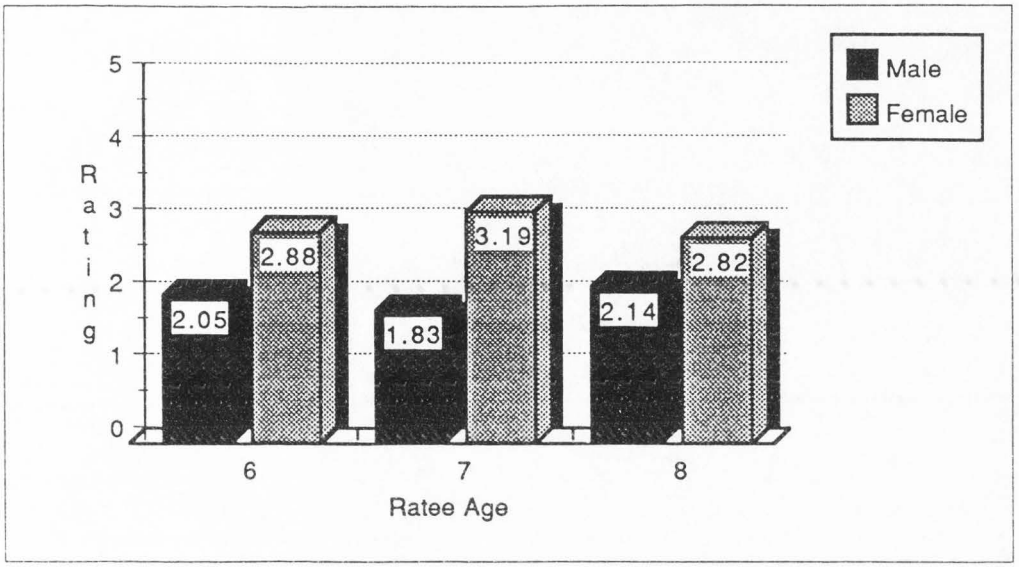
Graph Mean Peer Acceptance Scores on the "Work With" Instrument
8-year-old Female Raters



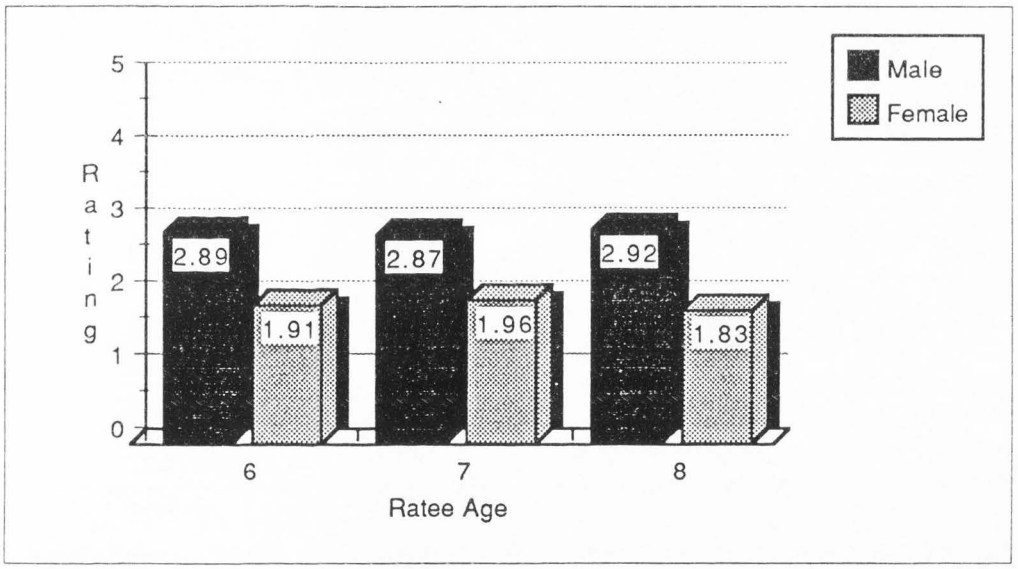
Graph Mean Peer Acceptance Scores on the "Work With" Instrument
7-year-old Male Raters



Graph Mean Peer Acceptance Scores on the "Work With" Instrument
7-year-old Female Raters



Graph Mean Peer Acceptance Scores on the "Work With" Instrument
6-year-old Male Raters



Graph Mean Peer Acceptance Scores on the "Work With" Instrument
6-year-old Female Raters

APPENDIX J: WORK WITH CROSS-GENDER EFFECT SIZES

6-Yr.-Old Male Raters

	Female Ratee Age		
Male Ratee Age	6 yr.	7 yr.	8 yr.
6 yr.	.53	.73	.49
7 yr.	.67	.87	.63
8 yr.	.47	.67	.44

6-Yr.-Old Female Raters

	Male Ratee Age		
Female Ratee Age	6 yr.	7 yr.	8 yr.
6 yr.	.64	.63	.66
7 yr.	.61	.59	.63
8 yr.	.69	.68	.71

7-Yr.-Old Male Raters

	Female Ratee Age		
Male Ratee Age	6 yr.	7 yr.	8 yr.
6 yr.	.54	.32	.26
7 yr.	.97	.75	.69
8 yr.	.84	.62	.56

7-Yr.-Old Female Raters

	Male Ratee Age		
Female Ratee Age	6 yr.	7 yr.	8 yr.
6 yr.	.58	.33	.47
7 yr.	.94	.68	.83
8 yr.	.71	.46	.60

8-Yr.-Old Male Raters

	Female Ratee Age		
Male Ratee Age	6 yr.	7 yr.	8 yr.
6 yr.	.09	.12	.15
7 yr.	.63	.66	.38
8 yr.	1.04	1.07	.79

8-Yr.-Old Female Raters

	Male Ratee Age		
Female Ratee Age	6 yr.	7 yr.	8 yr.
6 yr.	.68	.47	.50
7 yr.	.44	.23	.26
8 yr.	.96	.75	.78

APPENDIX K: WORK WITH WITHIN-GENDER EFFECT SIZES

6-Yr.-Old Male Raters

Ratees Age Comparison	Ratee Gender: Males	Ratee Gender: Females
6 - 7	.14	.20
6 - 8	.06	.04
7 - 8	.20	.24

6-Yr.-Old Female Raters

Ratees Age Comparison	Ratee Gender: Males	Ratee Gender: Females
6 - 7	.01	.03
6 - 8	.02	.05
7 - 8	.03	.08

7-Yr.-Old Male Raters

Ratees Age Comparison	Ratee Gender: Males	Ratee Gender: Females
6 - 7	.37	.19
6 - 8	.26	.24
7 - 8	.11	.05

7-Yr.-Old Female Raters

Ratees Age Comparison	Ratee Gender: Males	Ratee Gender: Females
6 - 7	.22	.31
6 - 8	.10	.12
7 - 8	.13	.20

8-Yr.-Old Male Raters

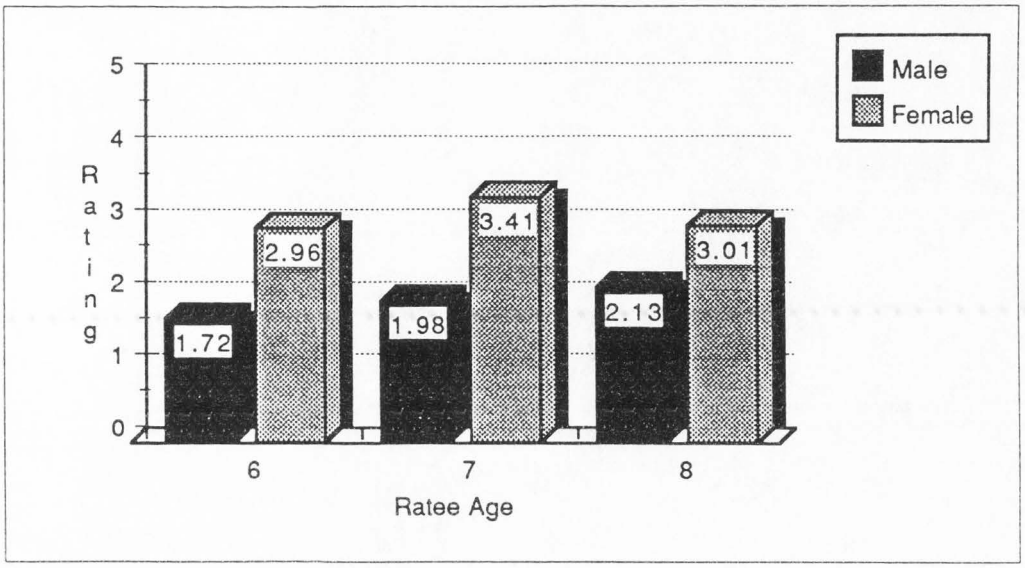
Ratees Age Comparison	Ratee Gender: Males	Ratee Gender: Females
6 - 7	.47	.03
6 - 8	.83	.22
7 - 8	.36	.24

8-Yr.-Old Female Raters

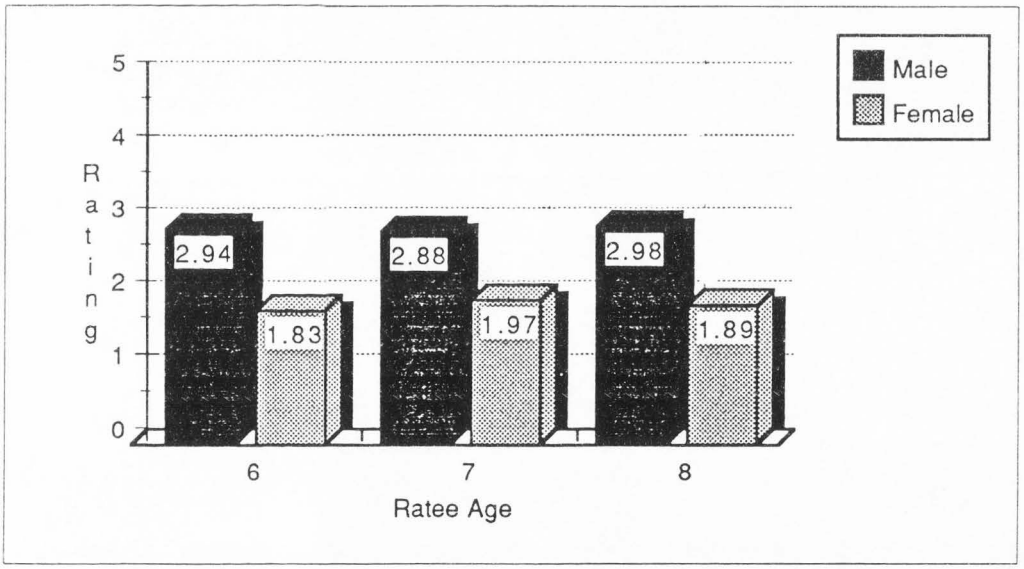
Ratees Age Comparison	Ratee Gender: Males	Ratee Gender: Females
6 - 7	.18	.21
6 - 8	.15	.24
7 - 8	.03	.45

APPENDIX L: GRAPHS OF PLAY WITH SCORES

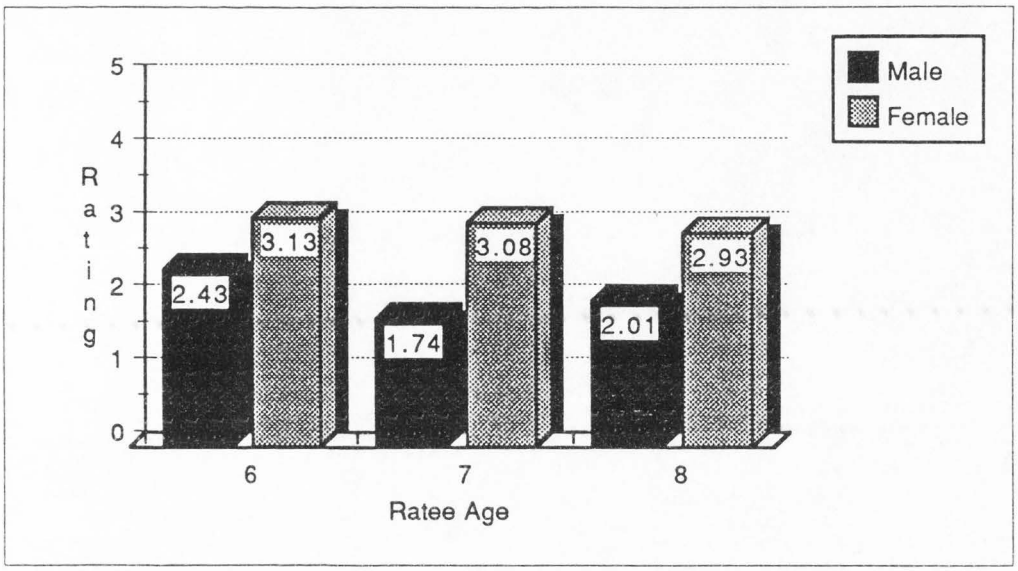
Graph Mean Peer Acceptance Scores on the "Play With" Instrument 6-year-old Male Raters



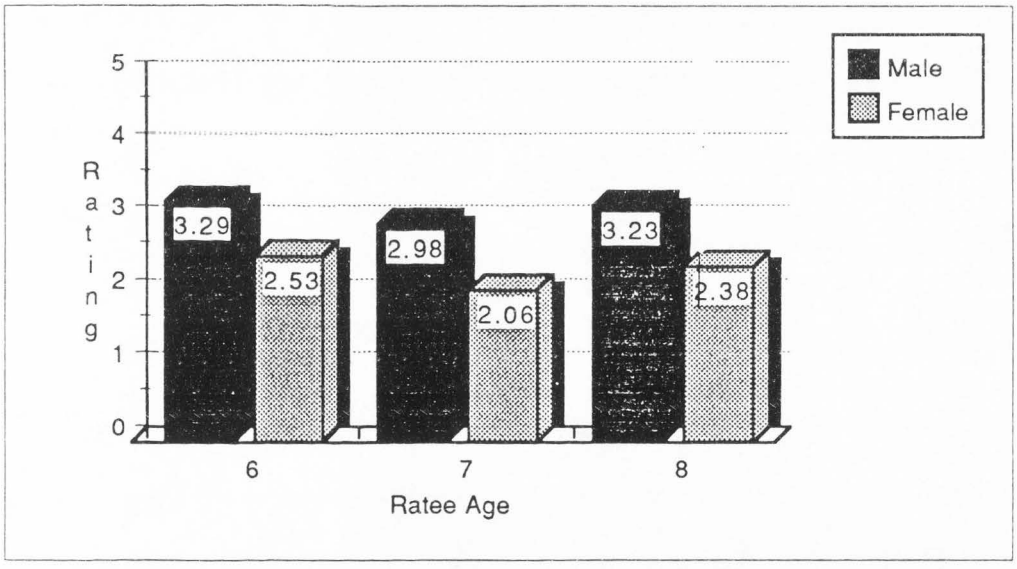
Graph Mean Peer Acceptance Scores on the "Play With" Instrument 6-year-old Female Raters



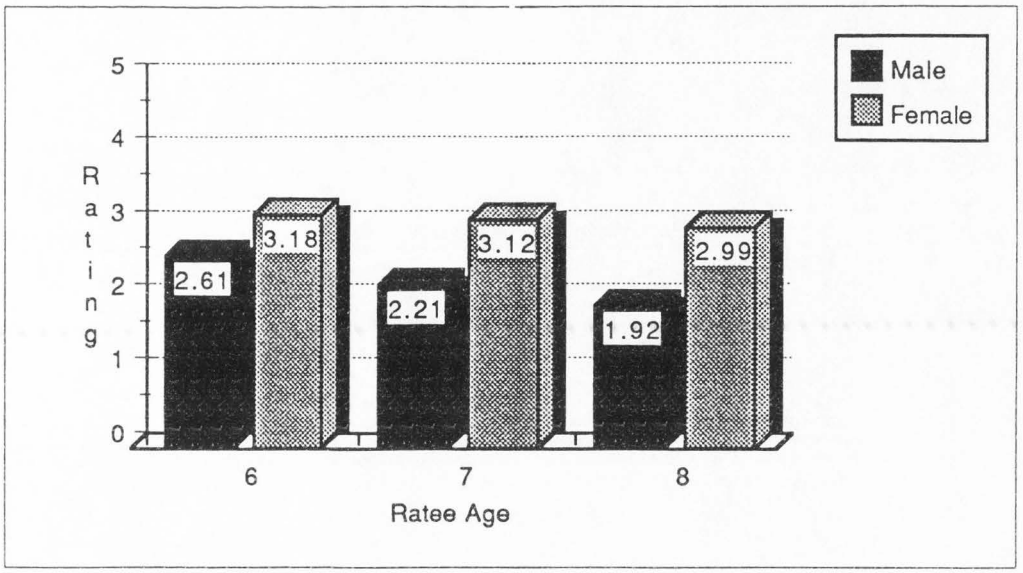
Graph Mean Peer Acceptance Scores on the "Play With" Instrument 7-year-old Male Raters



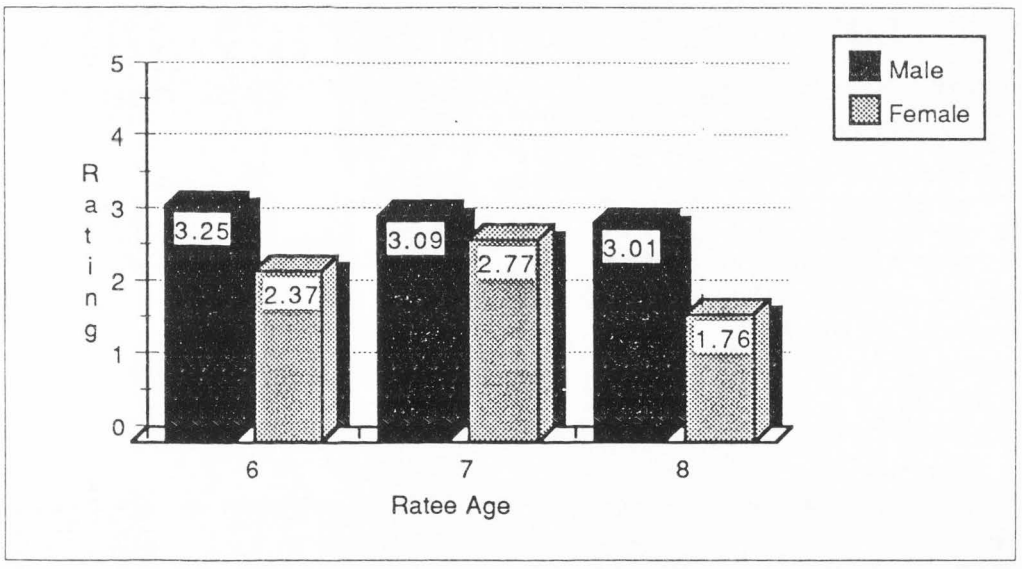
Graph Mean Peer Acceptance Scores on the "Play With" Instrument 7-year-old Female Raters



Graph Mean Peer Acceptance Scores on the "Play With" Instrument 8-year-old Male Raters



Graph Mean Peer Acceptance Scores on the "Play With" Instrument 8-year-old Female Raters



APPENDIX M: PLAY WITH CROSS-GENDER EFFECT SIZES

6-Yr.-Old Male Raters

	Females Ratees		
Male Ratees	6 yr.	7 yr.	8 yr.
6 yr.	.81	1.10	.83
7 yr.	.64	.93	.66
8 yr.	.54	.83	.56

6-Yr.-Old Female Raters

	Males Ratees		
Female Ratees	6 yr.	7 yr.	8 yr.
6 yr.	.77	.72	.79
7 yr.	.67	.63	.70
8 yr.	.72	.68	.75

7-Yr.-Old Male Raters

	Females Ratees		
Male Ratees	6 yr.	7 yr.	8 yr.
6 yr.	.51	.47	.36
7 yr.	1.01	.98	.87
8 yr.	.82	.79	.68

7-Yr.-Old Female Raters

	Males Ratees		
Female Ratees	6 yr.	7 yr.	8 yr.
6 yr.	.57	.34	.53
7 yr.	.92	.69	.88
8 yr.	.68	.45	.64

8-Yr.-Old Male Raters

	Females Ratees		
Male Ratees	6 yr.	7 yr.	8 yr.
6 yr.	.10	.13	.16
7 yr.	.66	.69	.40
8 yr.	1.08	1.11	.82

8-Yr.-Old Female Raters

	Males Ratees		
Female Ratees	6 yr.	7 yr.	8 yr.
6 yr.	.65	.53	.46
7 yr.	.35	.24	.17
8 yr.	1.10	.98	.91

APPENDIX N: PLAY WITH WITHIN-GENDER EFFECT SIZES

6-Yr.-Old Male Raters

Ratees Age Comparison	Ratee Gender: Males	Ratee Gender: Females
6 - 7	.17	.29
6 - 8	.26	.03
7 - 8	.10	.26

6-Yr.-Old Female Raters

Ratees Age Comparison	Ratee Gender: Males	Ratee Gender: Females
6 - 7	.04	.09
6 - 8	.03	.04
7 - 8	.06	.05

7-Yr.-Old Male Raters

Ratees Age Comparison	Ratee Gender: Males	Ratee Gender: Females
6 - 7	.44	.03
6 - 8	.28	.13
7 - 8	.17	.10

7-Yr.-Old Female Raters

Ratees Age Comparison	Ratee Gender: Males	Ratee Gender: Females
6 - 7	.20	.30
6 - 8	.04	.10
7 - 8	.16	.21

8-Yr.-Old Male Raters

Ratees Age Comparison	Ratee Gender: Males	Ratee Gender: Females
6 - 7	.26	.05
6 - 8	.44	.12
7 - 8	.18	.07

8-Yr.-Old Female Raters

Ratees Age Comparison	Ratee Gender: Males	Ratee Gender: Females
6 - 7	.10	.26
6 - 8	.16	.39
7 - 8	.06	.65