Effects of classwide peer tutoring (Cwpt) on social interactions of children with and without English proficiency

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EFFECTS OF CLASSWIDE PEER TUTORING (CWPT) ON SOCIAL INTERACTIONS OF CHILDREN WITH AND WITHOUT ENGLISH PROFICIENCY

by

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A dissertation submitted in partial fulfillment of the requirements for the

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May 2003

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Effects of Classwide Peer Tutoring (CWPT) on Social Interactions of Children with and without English Proficiency

is approved in partial fulfillment of the requirements for the degree of

Doctor of Philosophy in Special Education

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ABSTRACT

Effects of Classwide Peer Tutoring (CWPT) on Social Interactions of Children with and without English Proficiency

by

Yaoying Xu

Dr. Jeffrey Gelfer, Examination Committee Chair
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Learning and Education occur in social contexts. The quality of children’s peer relationships is an important indication of children’s current and later social adjustment. Children with peer problems tend to experience higher levels of loneliness and other undesirable affective consequences, including social dissatisfaction and worrying about peer relations. Because of the limited language proficiency and cultural and ethnic differences among children with LEP, some of their social behaviors are considered inappropriate by their non-LEP teachers and peers. On the other hand, children with LEP may feel that they do not fit in a group or class activity. As a result, these children tend to have less social interaction with their peers than non-LEP children.

The purpose of this dissertation study was to evaluate the effects of Classwide Peer Tutoring (CWPT) on social interaction behaviors of children with Limited English Proficiency (LEP) and children who are native English speakers (non-LEP). Two second-grade classrooms from an elementary school were selected as the research setting for this
study. CWPT was used as the independent variable and children’s frequency of social interactions (defined and measured by Social Interaction Observation System) was the dependent variable.

One classroom (Class 1) included 13 children with LEP and one child with non-LEP. The other classroom (Class 2) included 13 children with non-LEP and one child with bilingual language capabilities. Seven children with LEP from Class 1 and 7 children with non-LEP from Class 2 were selected as the subjects in this study. Subjects’ ages ranged from 7 to 8 years old. All children from the two settings were observed and videotaped during the study.

Findings of this study indicated that CWPT was effective for both children with LEP and children with non-LEP. Statistical tests showed no significant difference between these two groups or between boys and girls on the effects of intervention. Single subject data indicated that the intervention was relatively more effective for children with LEP (295% of increase) than children with non-LEP (118% of increase). In both groups, children were engaged in very few negative behaviors. Strategies of pairing did not influence the effectiveness of CWPT. Questionnaires from the teachers and students indicated that both teachers and students enjoyed the process of CWPT and they intended to continuously use CWPT on a regular basis.
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ACKNOWLEDGEMENTS

For every step during the journey through my graduate studies and doctoral program, I have been supported and guided by a group of outstanding scholars and professionals. I wish I had enough space here to acknowledge all the people who have made my dream come true. First of all, I would like to thank my advisor, mentor, and spiritual father, Dr. Jeffrey Gelfer. Without his continuous encouragement, guidance, support, knowledge and skills, this project was not possible. I would like to thank Dr. John Filler for his unique way of encouraging me making progress. Dr. Nancy Sileo, for her charming but directed mentoring, Dr. Peggy Perkins, for her sweetness and gentle professional guidance, and Dr. Tom Pierce for his witty and strong way to prepare me as a professional.

I would also like to thank Dr. Kit-Hung Lee, my godmother. With her professional help as a scholar, her motherly love and care, I completed this process successfully. I thank my colleague and friend Catherine Lyons who was always supportive and helpful during my doctoral studies, especially the data collection process.

Of course, I can never thank enough my beloved father and my mother, who not only brought me life, but always give me their unconditional, unselfish love and support. I especially thank my dearest son, Xuxu, who makes me the happiest mother and a caring educator. I would like to thank a special individual in my life, Robert Trent, for his time, intelligence, patience, emotional support, and love. At last, I would like to thank everybody who has made my life meaningful.
CHAPTER 1

INTRODUCTION

Learning occurs in a social context. The social nature of learning starts from infancy and continues throughout adulthood. Because the domains of children’s development—physical, social, emotional, and cognitive—are closely related, the education of young children is across all developmental areas within the social context.

John Dewey, the leader of the Progressive Movement in American education, strongly believed that learning is strengthened through social interactions with peers and adults (Henniger, 2002). According to Dewey, the school is a community where children should be engaged in meaningful activities with each other on problem solving rather than kept isolated at individual desks for academic assignments (Phillips & Soltis, 1998). Vygotsky also stressed that learning takes place in social settings and we all learn from each other (Phillips & Soltis, 1998).

Piaget’s constructivist approach has had a significant impact on early childhood education. His theory on intellectual development implies active learning during the early childhood years. Based on the theories of Dewey, Piaget, and Vygotsky, the National Association for the Education of Young Children (NAEYC) (Bredekamp & Copple, 1997) strongly favors Developmentally Appropriate Practice (DAP) in early childhood programs.
The DAP guidelines convey a message that exploratory play activities are critical for the development of young children and that formal instruction beyond the child's current developmental level is not appropriate. The nature of developmentally appropriate practices allows for the inclusion of children with individual needs in the same setting, which is consistent with the Division for Early Childhood (DEC) position on inclusion of children with disabilities in general education settings (Sandall, McLean, & Smith, 2000). Both DEC and NAEYC emphasize the importance of social context for child development and learning.

The ecological model developed by Bronfenbrenner (1979, 1989, 1993) explains child development within the sociocultural context of the family, educational setting, community, and broader society. Because all these contexts are interrelated, one aspect can have a strong impact on other aspects of the developing child. Also because the child is a social person, the interaction of the child with other children is not only critically important for developing social skills, but also skills in all other areas.

In the United States, early childhood programs (birth to eight years of age) serve children and their families from different ethnic, cultural, and linguistic diversities. The term Linguistically and culturally diverse is used to define children enrolled in educational programs who are either non-English-proficient (NEP) or limited-English-proficient (LEP) (NAEYC, 1996). These children are from homes and communities where English is not the primary language of communication (Garcia, 1991).

More and more linguistically and culturally diverse children enter the early childhood programs and public schools. According to a report by the U.S. Department of Education (1997), 2.1 million limited-English-proficiency (LEP) students (5% of the total
student body) were enrolled in public schools in 1993-1994. Waggoner (1994) estimated that about 9.9 million of the 45 million school-age children (more than one in five) from families where languages other than English are spoken and this number is growing. During the 1980s, the number of students considered to be limited English proficient grew 2 1/2 times faster than the general school enrollment (Minicucci & Berman, 1995). Students with LEP are concentrated in large urban areas in a few states such as California, New York, Texas, Florida, Illinois, and New Jersey; and in the rural areas of the Southwest (Torres, 2001).

Most children with LEP are members of racial or ethnic minority groups and most of them live in communities plagued by poverty and violence (Torres, 2001). Children in these communities often do not have access to adequate nutrition, housing, or health and dental care. These communities usually do not have the necessary connections with the school. The disconnections between the school and the community, coupled with the lack of economic opportunity, create an atmosphere of alienation between the home and the school.

Further, teachers are not prepared to teach students with LEP. For example, 42% of all public school teachers across the nation had students with LEP in their classes; however, only 3 out of 10 of these teachers had some level of training for teaching students with LEP. Fewer than 3 out of 100 of these teachers had a bilingual or English as a Second Language (ESL) degree (Frey & Doyle, 2001). It is very common to find LEP students in a classroom where the teacher does not have any training to teach them effectively.
The unprepared teaching professional and/or inappropriate curricular have put children with LEP into a separate group with less advantages than others. Being labeled as a student with LEP is the beginning of a vicious cycle. The LEP label highlights a particular deficiency. It implies a lower quality of education for these students in terms of materials, interactions, activities, and expectations, which themselves create deficiencies in many other dimensions (Faltis, 1997). The student is tracked in the cycle and has fewer opportunities of escaping from it. Therefore, what began as a limitation in the second language may become a permanent problem of cognitive, academic, and social/emotional development for the child and put the child at risk for developmental delay due to environmental factors (Henniger, 2002). The child may have to be involved in special education programs that could be avoided. Furthermore, the negative effects from the vicious cycle, combined with the economically disadvantaged background of these children and cultural obstacles, may last into adolescence and adulthood for these children.

In addition to deficiencies in reading, writing, mathematics, and science, one serious problem is the lack of positive peer interaction for children with LEP with their peers. Many children with LEP consider themselves less welcomed or accepted by their peers (Minicucci & Berman, 1995). Teachers need to create a supportive environment for helping these children adapt to a new school system and language, and also to deal with the internalized negative feelings. While the teacher is a facilitator in creating this environment, peers are the central component of this interaction. Positive peer interaction is the central part of social competence of young children and peer-mediated instruction.
whereby children work together to support each other to learn is a promising alternative to conventional instructional methods (Fuchs et al., 2001).

Social Competence of Young Children

Researchers have found links between social skill deficits in children and delinquency, school dropout, substance abuse in adolescence (Greene et al., 1999; Parker & Asher, 1987), and mental health problems in adulthood (Cowen, Pederson, Babigian, Izzo, & Trost, 1973; Strain & Odom, 1986). Guralnik (1990) defined social competence as “the ability of young children to successfully and appropriately select and carry out their interpersonal goals” (p. 4). Social competence includes five general areas: independence, assertiveness, social sensitivity, friendship building, and social problem solving. Howes and Matheson (1992) defined children’s social competence with peers as behaviors and cognition that reflect successful social functioning with peers.

A critical period for social development is 6-8 age span (Dodge, Jablon, & Bickart, 1994; Flavell, 1977). Children at this age start to feel “fitting in” at school and start developing friendships, so they are motivated to learn social skills (McCay & Keyes, 2001/2002). Erikson’s psychosocial theory emphasized the psychological development through the person’s interactions within his social environment (Schickedanz, Schickedanz, Forsyth, & Forsyth, 1998). His first four stages of human development are important for early childhood education. During the elementary school age years, children’s development might be delayed if their potential abilities are not evoked and nurtured (Erikson, 1963). Children at this age want to pursue goals and feel a sense of accomplishment.
Vygotsky's sociocultural theory suggests that learning is a social process and social interaction is important for cognitive development (Vygotsky, 1978). Vygotsky viewed human beings as meaning makers. He believed that a child co-constructs meaning through social interaction (Mahn, 1999). Development is primarily influenced by the social and cultural activities in which the individual grows up.

Vygotsky's concept of the zone of proximal development implies two levels of development: the actual level of development achieved by independent problem solving and the potential level of development reached with the guidance or collaboration of an adult or a more capable peer. This concept underlines the interdependence between individuals and the social processes in the co-construction of knowledge (John-Steiner & Mahn, 1996). Interactions with other children and adults are the primary vehicles children have for learning about the world around them. Vygotsky's thinking about the relationships between language and thought in childhood has also influenced teaching and language learning in the early years. He also believed that value of play in the development of symbolic thinking and the overall growth of children.

As children are engaged in more positive interactions through effective communication, become more self-aware, and better at understanding the thoughts and feelings of others, their social skills have improved (Berk, 1999). Social play with peers is one of the most important areas that children develop positive social skills. Young children experience all kinds of learning activities during peer interaction. Children also establish positive peer relationships by forming friendships with peers during the interaction.
Mildred Parten (1932) differentiated the social development of children into three steps. The first is nonsocial activity—unoccupied, onlooker behavior, and solitary play. The second step is parallel play, which is a limited form of social participation. Children play side by side with similar materials, but not talk about the play activity. The third step is true social interaction including two forms of play: associative play and cooperative play. The difference between associative and cooperative play is that in associative play children engage in separate activities but interact with each other about the activity; whereas in cooperative play children act together toward a common goal such as a project or a make-believe theme.

In early childhood education, social play is viewed as a means to foster and enhance language, cognitive, social, and emotional development (Ivory & McCollum, 1999). This is true for all children, regardless of the developmental level or linguistic/cultural backgrounds of children. Play is an essential ingredient in early childhood programs and it enhances every aspect of child development.

Traditionally, grades 1 through 3 in the elementary schools are referred to as primary education. Instruction was mainly teacher-directed including small- and large-group teaching combined with independent work for students. Beginning in 1960s and 1970s, developmental theories of Piaget, Bruner, Dewey, and Erikson have become popular in the American education (Henniger, 2002). Professionals have realized that primary-aged children are more like preschool and kindergarten children in their thinking rather than older elementary children. Hands-on manipulation of objects and interacting with peers were emphasized.
However, because of the limited language capability or different cultural background for children who are not native English speakers, the social behaviors of these children may be different from or less than that of their English-speaking peers. Most previous studies have focused the interventions on academic improvements for children with LEP (e.g., Greenwood, Arreaga-Mayer, Utley, Gavin, & Terry, 2001; Gersten & Baker, 2000b). Very few researches have examined the social interaction behaviors of these children. One need for educators is to develop an appropriate instructional method in the general education setting to identify the social behaviors of children with and without English proficiency and to improve the social interactions of these two groups of children.

Classwide Peer Tutoring

The NAEYC guidelines for developmentally appropriate practice in early childhood programs (1997) support child-initiated play within the framework of teacher planning. The social interaction during child-initiated play helps children develop positive social skills. This interaction involves peer acceptance, the extent to which a child is viewed by peers as a worthy social partner (Berk, 1999).

Peer acceptance is a powerful predictor of current and later psychological adjustment. Researches show that social behavior plays a critical role in causing a child to be liked or to be rejected (Berk, 1999). For example, popular children have very positive social skills by communicating with peers in sensitive, friendly, and cooperative ways and are appropriately assertive. On the other hand, rejected children display a wide range of negative social behaviors. Social play and peer imitation are thought to be a
basic developmental process to facilitate learning social skills (Garfinkle & Schwartz, 2002; Ivory & McCollum, 1999).

Classwide Peer Tutoring (CWPT) is a specific form of peer-mediated instruction that encourages children to learn from each other, facilitated and supported by the teacher. Originally CWPT was developed to prevent a lower rate of academic development in poor, culturally diverse children in federally funded Title I schools (Delquadri, Greenwood, Stretton, & Hall, 1983). CWPT has been used in general and special education settings, worked with children from diverse backgrounds and different developmental levels.

CWPT is a peer tutoring system involving tutor-tutee pairs working together on a classwide basis. It is a form of intraclass, same-age, reciprocal peer tutoring. Unlike other forms of peer tutoring, CWPT is designed to operate only with the children in one particular classroom or age group. It typically involves selection of instructional content and materials, pairing of students for reciprocal tutoring, regular changes of partners, immediate error correction, points contingent upon performance, allocation of tutoring pairs into teams competing for highest point totals, public posting of individual and team scores, and social rewards for winning teams (Greenwood, Delquadri, & Carta, 1988). It is designed to accelerate student learning by increasing students’ opportunities to respond and thereby increasing their levels of academic performance.

CWPT has been extensively researched. According to the Educational resources Information Center (ERIC), at least 25 published CWPT intervention studies report CWPT’s superiority to conventional forms of teacher-mediated instruction for
accelerating reading fluency/comprehension and mastery of other basic academic skills (Greenwood et al., 2001).

It has also been found useful in producing gains in spelling performance among low-achieving students (Greenwood, Delquadri, & Hall, 1989; Maheady & Harper, 1987). Large-scale and long-term research has also been undertaken in this area and findings indicate that CWPT yields greater learning gains than traditional teacher directed instruction (e.g., Greenwood, 1991). Moreover, CWPT has been successfully extended to curricular areas other than spelling. Areas covered include reading, assorted other language abilities, and mathematics (Chun & Winter, 1999). Also, peer tutoring has been studied for children with attention deficit hyperactivity disorder (ADHD) and children with learning disabilities in the past twenty years. Similarly, results from empirical studies in these areas have supported the effectiveness of CWPT (DuPaul & Eckert, 1998).

Despite the fact that almost all studies that have been done on peer tutoring focus on academic performance rather than social skills, the relationship between academic performance and social interaction has been identified (DuPaul & Eckert, 1998). An active peer interaction exists in this instructional process because CWPT provides heightened opportunities to respond and higher response rates. Research in education conducted for over a decade focused on the important relationship between language, cognition, affection, and social interaction (Frey & Doyle, 2001). For example, Lewis, Schaps, and Watson (1996) explained that students would “work harder, achieve more, and attribute more importance to school work in classes in which they feel liked, accepted, and respected by the teacher and fellow students” (p. 18).
CWPT involves reciprocal interaction between the pairs in the whole class level. Each student has an equal chance to be the tutor or tutee within the time limit (usually 20 minutes) (Greenwood, Delquadri, & Carta, 1988). By asking and answering questions to each other, they are not only learning the assigned academic material, but also learning social skills such as turn-taking and being patient by modeling and imitating during the process (Greenwood, 1991).

While most studies have produced positive findings for peer tutoring either on academic performance, disruptive behaviors, or positive peer interactions, no studies to date have specifically investigated the effects of peer tutoring on social interactions of children with LEP in a general education setting. It is known that many children with LEP experience problems with their non-LEP peer group (Torres, 2001). Poor peer relations caused by social interaction problems can deprive the child of a number of important learning experiences, including the principles of egalitarian interactions (i.e., being fair, to "give and take" with others) and the necessity of inhibiting inappropriate aggressive behavior (Hartup, 1983; Landau, Milich, & Diener, 1998).

Because of the limited language proficiency and cultural and ethnic differences among students with LEP, some of their social behaviors are considered inappropriate by their non-LEP peers (Torres, 2001). Thus, children with LEP often feel they do not fit into the group or classroom activities. It was hypothesized that by actively interacting with a peer in a well-designed peer tutoring process, children with LEP would increase the social interactions with their peers. Similar behaviors would be found among children with non-LEP.
Statement of the Problem

The purpose of the present study was to examine the effects of CWPT on social interactions of children with LEP and children with non-LEP in two general education classrooms. This has received little attention in previous studies. Academic performance in math (e.g., counting, adding), spelling, and reading was used as the content for CWPT process, as supported by previous research. Because of the reciprocal influence during the peer-tutoring procedure, children with LEP and with non-LEP from the two classrooms were expected to benefit from this positive interaction.

The hypothesis was that CWPT would be effective in increasing social interactions of children with LEP and with non-LEP in two classrooms (measured by Social Interaction Observation System). Positive findings would enable classroom teachers to generalize CWPT to different settings, and provide other researchers with data leading to further research on the long-term effectiveness of this technique.

Specifically, the following research questions were addressed:

1. Does CWPT have a positive effect on social interactions of children with LEP and with non-LEP as measured by Social Interaction Observation System in each of the two classrooms?

2. Does CWPT have a different effect on the social behaviors of children with LEP and children with non-LEP as measured by Social Interaction Observation System in the two classrooms?

3. Is there a difference in active and passive social behaviors between boys and girls when using CWPT process in LEP and non-LEP groups, respectively, as measured by Social Interaction Observation System?
4. Do strategies for selecting tutor-tutee pairings influence the effectiveness of CWPT?

5. Do children and teachers from the LEP and non-LEP classrooms have similar perceptions about the use of CWPT as measured by Teacher/Student Satisfaction Questionnaire?

Significance of the Problem

Social competence determines the social skills of children and their social behaviors. The quality of children’s peer relationships has been identified as an important indication of children’s current and later social adjustment. Studies indicate that a variety of positive developmental outcomes are associated with peer acceptance, whereas negative outcomes are linked to rejection by peers (Ladd & Price, 1987; Locke & Fuchs, 1995). Such patterns of association have been found as early as the toddler and preschool years (Ladd & Price, 1987).

Children with peer problems tend to experience higher levels of loneliness and other undesirable affective consequences, including social dissatisfaction and worrying about peer relations (Crick & Ladd, 1993; Parkhurst & Asher, 1992). Furthermore, children who are rejected by members of the peer group may also be the frequent recipients of teasing (Shapiro, Baumeister, & Kessler, 1991).

Positive peer interaction is directly related to social skills of children. Peer interaction research consistently concludes that the most productive collaboration results from learning contexts in which peers’ decision making occurs jointly, with a balanced exploration of differences in perspectives (Landau et al., 1998). The collaborative process
often leads to a level of understanding unavailable in a solitary endeavor or non-collaborative interaction.

In spite of the effectiveness of peer tutoring for children with and without disabilities, few empirical studies to date have been done on relationships between CWPT and social interactions, specifically with primary grade students with LEP in general education settings. This study afforded an opportunity to examine the applicability of CWPT to this growing population in the United States. What’s more, for the first time the present study compared the effects of CWPT on social behaviors of children with LEP and children with non-LEP. The findings would provide general education teachers information on working with children with individual needs in inclusive settings.

Although some previous studies (e.g., Locke & Fuchs, 1995) have reported the effects of peer tutoring on peer interactions when it was combined with positive reinforcement or rewards, the individual effectiveness of peer tutoring is unknown because of the possible interaction between reinforcement and CWPT. This study focused on the social aspects of CWPT.

Previous studies have provided few findings on comparing the social behaviors between boys and girls who are LEP or non-LEP. It is known that primary school age children extend gender-stereotyped beliefs that they had acquired in early childhood years (Berk, 1999). Further, children with linguistically and culturally different backgrounds may hold different beliefs on social behaviors for boys and girls. This study compared social interactions between boys and girls from both LEP and non-LEP groups.
As mentioned before, social skills affect peer interactions of children, which in turn, affects their other developmental areas. The results of this study helps teachers design appropriate educational plans to improve students’ skills in different developmental areas. Teaching in a multicultural and multilingual setting constitutes a challenge for any teacher. More and more teachers have realized the importance of using different teaching strategies to meet the specific needs of individual students. This study provides teachers alternative strategies in addition to traditional teaching methods to teach students with LEP and children with other special needs.

Results from this study also provide researchers further information on peer tutoring. Future research can be compared and contrasted with the effectiveness of this strategy with other approaches in a more comprehensive way.

Most importantly, this study will benefit children with LEP directly in both the short and long term. In short term, children would develop improved peer relationships. In long term, this study should contribute to the successful future life of children. It is clear that students with LEP in some ethnic groups drop out of school at a high rate. For example, the dropout rate for Hispanic immigrants is estimated to be 43% (Minicucci & Berman, 1995). As young adults, many students with LEP are prepared inadequately for higher education or high wage/high skill employment.

Recent reports have called for making the needs of students with LEP more central to the national school reform effort (Minicucci & Berman, 1995). At a time when America seeks to reform its schools so that all students meet higher standards, the challenge of educating language-minority students assumes even greater importance.
Compared to traditional teacher instruction, CWPT may meet the needs of all children, regardless of their cultural/ethnic backgrounds.

Finally, the results of this study will benefit both children with LEP and their non-LEP peers. DuPaul and Eckert (1998) mentioned that the interaction of peer tutoring is bi-directional: inappropriate social behaviors from one child (whether the tutor or tutee) will lead to inappropriate behaviors from the other child during the process. Therefore, it is assumed to be true the other way: an appropriate behavior from one child will affect the behavior of the other child. So a positive peer interaction was expected from this study.

Assumptions

To conduct the study systematically, the experimental design and data collection were based on following assumptions:

1. Permanent documents from the school such as teacher evaluation forms or teacher tests were assumed to be identical for students with LEP and non-LEP.
2. Students’ grade reports from standardized tests such as IQ tests or language proficiency tests were assumed to be reliable.
3. Classroom teachers involved in the study were assumed to be equally proficient in English.
4. Students with LEP and non-LEP were assumed to have equal educational opportunities in school activities.
Definitions

For the purpose of this study and also for future studies in the same area, some definitions were clarified.

*Children with Limited English Proficiency (LEP).* Children with Limited English Proficiency (LEP) referred to English Language Learners (ELL) defined by the Clark County School District according to the following three categories: 1). Primary language is not English; 2). Proficiency in English is below the average proficiency of pupils (more than 2 standard deviation below the mean in standardized tests) at the same age or grade level whose primary language is English; and 3). Probability of success in a classroom in which courses of study are taught only in English is impaired because of his limited proficiency in English (added to NAC by Board of Education by R063-97, eff. 12-10-97). The primary languages of children with LEP in this study included Spanish, Bulgarian, and Yugoslavian.

*Children with Non-LEP.* Children with non-LEP were students whose primary language is English and who were not eligible for ELL programs.

*Classwide Peer Tutoring (CWPT).* CWPT is defined as an instructional strategy at the same class level in which all students are arranged as dyads who are working together on an academic activity (e.g., math, spelling), with one student providing assistance, instruction, and feedback to the other. Each side of the pair switches roles within the preset time period.

*Positive Social interaction Behaviors.* Positive social interaction behaviors refer to children’s linguistic, physical or gestural interactions with peers in a positive way. Specifically, these behaviors included: playing or conversing with other children,
physical signs of affection, engaging in interactive games such as “catch,” “chase,” associative and/or cooperative play, positive linguistic interaction, interaction initiations, and positive responses to peers (Kreimeyer, Anita, Coyer, Eldredge, & Gupta, 1991).

**Negative Social Interaction Behaviors.** Negative social interaction behaviors included: negative behaviors and negative responses to peers, for example, hitting, kicking, throwing toys, biting, pushing, shouting, taking materials or toys without permission, disrupting or interfering with play activity, using negative sign or oral communication such as “no,” “don’t do that,” “stop it,” “hate you,” or displays negative inflection in gestures, voice or signs (Kremeyer et al., 1991).

**Active Social Interaction Behaviors.** Active Social Interaction Behaviors referred to a child initiates interaction to peers or a peer initiates interaction to the child (Kremeyer et al., 1991).

**Passive Social Interaction Behaviors.** Passive Social Interaction Behaviors referred to nonplay, solitary play, parallel play, and no responses to a child or peers (Kremeyer et al., 1991).

**Social Competence.** Social competence was the ability to successfully and appropriately select and carry out interpersonal goals (Guranik, 1990).

**Peer relationship.** Peer relationship referred to the interaction between a child and his/her peers in the same educational setting (e.g., classroom, playground).

**Tutor-tutee pairings.** Tutor-tutee pairings in this study referred to dyads in a class wide level. Each dyad was formed by one of two strategies: random or skill pairing.
Non-CWPT settings. Non-CWPT settings referred to settings in which children are given instructions and work together as a whole class or a large/small group (e.g., math instruction to the whole class or group reading).

General Education Setting. General education setting referred to classrooms or playground where all children are present, including children with LEP and non-LEP, children with and without disabilities.

Primary age or low elementary age children. The terms primary age or low elementary age children were used interchangeably in this study to refer children who were 6 to 8 years of age.

Play. Play referred to any child-initiated activities such as free reading, games, math blocks, story telling, word cards, clock games, singing, measuring, and money game.

Video Camera. The video camera used in this study was Sony Video Camera Recorder, Digital 8, DCR-TRV 140. It was used to record the social interactions of the children in the observed two classrooms.

Limitations

1.) Intra-subject variability. Because of the developmental characteristics of young children and the period of study (8 weeks), maturation existed as an extraneous variable and may reduce the confidence in the effectiveness of the treatment.
2.) The limited language. The majority (all but two) of children with LEP from the observed school were limited as native Spanish speakers. Children from other language backgrounds were not typical in the observed school.

3.) LEP and non-LEP classrooms. Because one of the studied classrooms primarily included children with LEP and the other was primarily children with non-LEP, there was limited interaction between children with LEP and children with non-LEP. Further research should focus on the interactions between these two groups in the inclusive setting.

4.) There were only two children with disabilities in one classroom and none in the other classroom. So this study was not able to compare the social interactions between children with and without disabilities, only limited to children with LEP and non-LEP.

5.) Because of occasional absences of children and national holidays or track breaks during the study, data were collected and analyzed only three times a week for an eight-week time period. Longer time period would be necessary to examine the maintenance of the effectiveness of CWPT.

6.) No control group was involved in this study because 100% of parental consent was not achieved in a possible control group. Future studies should be designed to compare the difference between experimental group of children with LEP who will receive intervention and control group of children who will not receive intervention.
Summary

Learning is a social process and peer interaction is important for cognitive, language, and social/emotional development of young children (Vygotsky, 1978). While all developmental areas occur within the social contexts, the social competence in young children differs in individuals, especially for children with linguistically or culturally diverse backgrounds.

To increase and improve the social interactions of children with limited English proficiency (LEP) and English speaking children, a peer-mediated instructional procedure, Classwide Peer Tutoring (CWPT), was used as the intervention in this study. Instead of focusing on the academic performance of children with different needs, as supported by most previous studies, the present study was to investigate the effects of CWPT on the social interaction behaviors of children with LEP and non-LEP. Because of the reciprocal feature of this procedure, children were expected to learn and imitate from each other on social skills as well as academic performance.

Details on CWPT strategy and procedure were discussed in the subsequent chapters. A review of literature relevant to this study is presented in Chapter 2. Methodology used for implementing this study is discussed in Chapter 3. The results and discussion of their implications are reported in Chapter 4 and 5.
CHAPTER 2

REVIEW OF RELATED LITERATURE

Introduction

There were four purposes for this chapter. The first was to summarize and analyze existing professional literature related to social competence of young children. The second purpose was to summarize and analyze existing professional literature related to CWPT. The third purpose was to summarize and analyze existing literature related to interventions used for children with LEP. Finally, the eventual purpose was to identify and analyze existing literature on CWPT used for promoting social competence of children with diverse needs, especially children with LEP. Knowledge of these four literature bases was needed to understand the developmental characteristics of children with LEP and non-LEP and how their social interaction affects other developmental areas.

The chapter began with a discussion of Vygotsky’s sociocultural theory on child development reported in the literature. Then, the literature review procedures used to locate experimental studies involving social competence, CWPT, and children with LEP were described. Next, experimental studies related to the above areas were summarized and analyzed. Finally, a summary and synthesis of the research on social competence and CWPT is provided.
Promoting young children's social competence is a critical component in a developmentally appropriate early childhood program. Children who are considered popular and liked by their peers often have positive social skills, whereas children who are rejected or disliked by peers exhibit deficit social skills. Researches have indicated that positive developmental outcomes are linked to peer acceptance and negative outcomes are related to peer rejection (DeRosier, Kupersmidt, & Patterson, 1994).

According to Vygotsky's sociocultural theory, social interaction plays a significant role in a child's cognitive, language, and social/emotional development (Mahn, 1999). Language is a crucial tool for learning because it is the primary way we communicate and interact with others. It allows us to talk about our social interactions and is essential in the thinking process. Children construct new knowledge through participating in social activities and establish social interaction through words that have meanings (Vygotsky, 1987). The major focus of Vygotsky's research was the relationship between language and thought. Although language and thought become more and more connected along the developmental continuum to form verbal thought, language and thought never totally merge. Both children and adults continue to use noverbal thought and nonconceptual speech.

Vygotsky's concept of the zone of proximal development suggests that children learn best through social interactions with others. The interactions with adults and more capable peers help children reach their potential level of development. Vygotsky believed that play is the ideal social context in which children engage in challenging activities within the zone of proximal development. In play situations, the child becomes able to act independently of his/her perceptions. Play is important in the development of
consciousness because it enables a child to develop rules based on ideas and meanings rather than on objects themselves (Smith, 1993).

For young children birth to 8 years of age play is one of the major ways in which children learn about the world around them. Play is not only an enjoyable experience for young children, more importantly, it is a crucial way for children to learn about language, develop intellectual concepts, build social relationships and understandings, strengthen physical skills, and deal with stress (Henniger, 2002). Therefore, play is encouraged in early childhood education programs as a highly purposeful activity which allowed the development of representational thought (Smith, 1993).

Literature Review Procedures

A systematic search through two computerized databases (Education Resources Information Center and Academic Search Elite) was conducted. The following descriptors were used: social interaction, early childhood education, social competence, peer interaction, peer relations, English language learners, classwide peer tutoring, peer tutoring, social play, children at risk, children with special needs, NAEYC, DEC, culturally and linguistically diverse, second language, limited English speaking, teaching methods, cooperative learning, peer teaching, tutoring, inclusive schools, developmentally appropriate, individual needs, developmental delay, developmental areas, peer-mediated instruction, teacher-directed instruction.

Next, a manual search of the latest issues (from 1998 to 2003) of journals that emerged from the computerized search tool place was conducted. Included among the manual journal search were: Exceptional Children (2000 to 2003), Childhood Education...
Another procedure in the search process involved an ancestral search through the reference lists of the obtained articles and books. Both non-experimental, literature-based information and empirical studies have been obtained through the above mentioned search procedures.

Selection Criteria

Studies were included in this review if: (a) the procedures and data-based results were closely related to at least one of the three research areas: social competence, CWPT, and children with LEP, (b) the subjects were mostly birth to eight years of age with or without LEP, (c) the study was conducted by both group and single subject design, and (d) the study was one of the original studies in the related area even if the publication date was considered old.

Studies were excluded from this review if: (a) the subjects were secondary age children, (b) the study was conducted in a segregated classroom, and (c) the study was a simple replication of previous studies.

Review and Analysis of Studies Related to Social Competence

One of the earliest studies on children’s social play was conducted by Parten (1932). Although Parten’s researched subjects were preschool age children, it still has a significant impact on social behavior studies of primary age children (6-8 years of age).
Parten (1932) conducted the study on a group of preschoolers to investigate children's peer play in terms of meaningful developmental sequences. Subjects were 42 children from the Nursery School of the Institute of Child Welfare at the University of Minnesota. These children were categorized according to intelligence, gender, occupational category of the father, age, and sibling numbers in the family. Their average mental ability was above normal, with the IQ range from 81 to 145. The father's occupational category was divided into five groups, with Group I as the highest or professional class and Group V as the semi-skilled laborers. The number of children from these families ranged from one to five.

The observations extended about 9 months, from October 1926 to June 1927. The majority of the observations were taken during the months from January to April. The investigation was carried on at the same hour every day when the children were in the nursery school, from 9:30 to 10:30 a.m. during the free-play period. Social participation was categorized into two aspects: extensity and intensity. Extensity referred to the number of social contacts made by a child and intensity was the kind of groups participated in and the role of the child in those groups. Social play was organized into six categories: unoccupied, onlooker, solitary, parallel, associative, cooperative or organized supplementary play, from the least to the most on the continuum of social interaction.

Each child was observed for one minute daily using the method of repeated short samples. The order of observation was determined by a prearranged list of the children's names that was systematically varied from day to day. Each child was observed an equal number of times by five-minute intervals and rotating observations. Each of the four
observers made seven notations: type of group participation, name of playmates, number of children in group, leadership status, conversation, type of game or toy, and comments of child. The agreement percentage between the primary researcher and the other three observers was 89%. Teachers’ estimates were obtained from three teachers and two research assistants who had spent varying amounts of time with the children during the free play time between 1926 and 1927. The agreement between the Social Participation ratings from the general impressions of teachers and the systematic one-minute sampling method was very close: the correlation estimates of five teachers and the scores from sampling method was .88.

The group participation of the children was categorized into lack of group behavior and presence of group behavior. Unoccupied, solitary, and onlooker activity was considered negative indices of social behavior; parallel, associative, and cooperative or organized supplementary play was considered as positive indices of social participation. Among the 42 children being observed, unoccupied behavior was observed only in five children. Solitary play was common to all the children but with much variation. Onlooker behavior was not as frequently engaged in as were solitary and cooperative play, although all but two children were found in onlooker situations. Almost all the subjects engaged frequently in parallel activity, and the younger children engaged more in parallel behaviors than older ones.

All children but one participated in associative play. Children engaged in cooperative play varied from 1 to 57 percent during the observation. It was found out that older children were more frequently participating in social types of play and it seemed to be a correlation between children’s IQ and cooperative play.
Overall, Parten (1932) summarized that the three unsocial play types, unoccupied, solitary, and onlooker, made up about 25% of the observations; the social types of play, parallel, associative, and cooperative or organized supplementary made up 75% of the observations. Age was an important factor influencing social participation. The older the child, the more group social plays he/she engaged in. For example, parallel play was observed most often among the two-year-olds and least often among the 3- to 4-year-olds. Associative group was most frequent in the oldest group.

The reliability of the sampling method of Parten’s study (1932) was tested by the even-odd day correlation. The correlation coefficient obtained was .90 with 20 even and odd day samples.

Although Parten’s study was conducted over 70 years ago, her classification of children’s social play is still viewed as one of the most comprehensive descriptions on young children’s social behaviors. In early childhood education, Parten’s theory on social play has been used as a general guideline in understanding young children’s social interaction behaviors. Social play provides the means for children to interact with others and learn social skills. Instead of an isolated, individual skill practicing, social play provides a context in which children learn skills in different areas simultaneously, such as literacy skills, impulse control skills, and problem solving skills.

However, in the United States today children with culturally, ethnically, and linguistically diverse backgrounds served in early childhood programs may be very different from children over a half century ago. Further, inclusive education supported by NAECY and DEC has emphasized the right of every child’s receiving appropriate education and viewing children with special needs as children first. Therefore, early
childhood education programs today are designed or at least intended to serve all children and their families. Parten’s study was limited in terms of diversity of the subjects and the targeted population. All her subjects were typically developing children with average or above average IQs. No description was given on the subjects’ ethnic or cultural backgrounds. Therefore, generalization of the findings on children’s social play to different population should be cautious.

With a similar purpose as Parten’s study, Howes and Matheson (1992) conducted two studies of peer play development to observe children’s developmental sequences in terms of social play. They extended Parten’s study by encompassing a wider age range including several developmental periods rather than focusing solely on preschool period. Their purpose was to examine the ability of a peer play scale to assess developmental sequences in children’s peer play from the infant through the preschool periods.

Howes and Matheson (1992) started the longitudinal Study One with 72 children (32 girls). Among the subjects about two thirds were from middles class and one third from working class; 61% European-American, 14% African American, and the others were Latino and Asian American. The eventual sample size was reduced to 48 (23 girls) during the 3 years of the study. In terms of ethnicity, family background, or behavior toward peers, these 48 subjects were no different from those who dropped out.

Two criteria were used to enroll the subjects: they were 13-24 months old and they had been enrolled in the child-care arrangement for at least 2 months. During the course of study, the researchers observed the subjects from 54 different child-care centers due to the frequent change of settings for these children. The Early Childhood
Environmental Rating Scale (ECERS) (Harms & Clifford, 1980) was used to evaluate the quality of the child care centers, with 1 as the lowest and 7 as the highest score for each individual item. A rating of 3 indicated minimally acceptable quality and 5 indicated very good quality. The total ECERS scores showed that the quality of child care overall was good but not excellent.

The data were collected on the subjects six times, with each data point approximately 6 months apart. During each data collection point, each child was observed on 2 separate days by each of the two observers in the free play period when the child was free to interact with adults and peers. The observer coded three 5-min samples of a child’s social behaviors, producing 15 min of coded behavior for each visit, with a total of 60 min of coded behavior. Each 5-min sample was broken into fifteen 20-s intervals. Within each interval, behaviors were coded as present or absent. First, the interobserver reliability between all observers was established to reach 82% agreement for all scale points in the interval before each data point. Then, interobserver reliability was re-established at monthly intervals. All observers were beginning graduate students who were unaware of the hypothesis of the study.

Two standardized measures were used to interview each child on his or her social cognition about peers: The Harter and Pike (1984) Pictorial Scale of Perceived Competence and Acceptance for Young Children and a procedure involving enactment of social dilemmas developed by Mize and Ladd (1988). The complexity of social play was measured with the original Howes Peers Play Scale (Howes, 1980). Four of the original five scale points were used in this study: parallel play, parallel aware play, simple social play, and complementary and reciprocal play. In addition to these four
types of play, Howes and Matheson (1992) added cooperative social pretend play and complex social pretend play from the Social Pretend Play Scale developed by Howes, Unger, & Seidner (1989).

The frequency of play, the proportion of the peer play at each scale level, and the highest play form exhibited were recorded to examine the emergence and development of peer play forms. The researchers also divided the subjects into three age groups in order to contrast age changes. Group 1 included 13 children between 13 and 15 months of age when they were first seen; Group 2 had 17 children between 16 and 18 months of age; and Group 3 had 18 children between 19 and 23 months of age.

Results from multivariate analysis suggested that the play forms would emerge in the predicted sequence. All children developed cooperative social pretend play forms after they developed complementary and reciprocal play forms. Seventy-five percent of the children who engaged in the highest form of play developed forms sequentially. Fifty-eight percent of the children in the youngest age interval (13-15 months) engaged in complementary and reciprocal play. Only 80% of the children engaged in the highest form of peer play.

Children who showed earlier emergence of complementary and reciprocal play engaged in more and a greater proportion of complex social pretend play, and had an earlier emergence of complex social pretend play. These children were observed and rated as more prosocial and sociable, less aggressive and withdrawn in subsequent periods, more gregarious, and less difficulty interacting with peers at 44-60 months.

Findings from Howes and Matheson’s Study One (1992) show that continuity exists within the peer play scale. Children who exhibited earlier emergence of
complementary and reciprocal play as young toddlers also showed earlier development of cooperative social pretend play forms as older toddlers. Similarly, children who developed cooperative social pretend play earlier as older toddlers showed earlier emergence of complex social pretend play as preschoolers. Their findings also suggest that complex peer play may serve as an indicator of social competence with peers, as measured by frequency, proportion, and age of emergence.

To replicate the findings from Study One regarding the age of emergence and patterns of development of peer play forms, Howes and Matheson (1992) conducted a second study with the purpose to investigate the influence of the quality of the child-care setting on peer play. Two additional sample groups were included in Study Two: sample Group 1 comprised children in below-average child-care centers, and the sample Group 2 consisted of children enrolled in a model child-care center. Group 1 included 259 children (125 girls) between the ages of 10 and 59 months. Thirty-six percent of the children were African-American and 61% were European-American, with 80% of the children came from two-parent families. Group 2 had 48 (24 girls) children between the ages of 10 and 60 months. These children were predominantly European-American and were from two-parent middle- to upper middle-class families.

Children from Group 1 were enrolled in 45 different child-care centers. The average ECERS scores for the appropriateness of these centers were 3.5 for infants, 3.6 for toddlers, and 4.1 for preschoolers. Average ECERS scores for developmentally appropriate activities were 2.7 for infants, 3.3 for toddlers, and 3.3 for preschoolers. These scores indicated that quality of care in these centers was minimally acceptable. Children from Group 2 were all enrolled in a single, model, on-site corporate child-care
Average ECERS scores were 5.95 for infants and toddlers and 5.46 for preschoolers. Average ECERS scores for developmentally appropriate activities were 5.82 for infants and toddlers and 4.36 for preschoolers. This indicated children from Group 2 were receiving better-than-average quality child care.

The observation procedure for children's peer play was identical to that in Study One with the exception of reduced number of observers and the observation time. In this study children's social competence with peers were measured by only one observer who made one visit and each child's behavior was coded for a total of 20 minutes.

Univariate $F$ and post hoc Scheffe tests showed that the frequency of parallel play did not change with age but the frequencies of all other play forms increased with age. Multivariate $F$ tests indicated that frequencies and proportions of peer play forms were different between sample Group 1 and Group 2. The frequencies and proportion of play forms and the emergence age of these play forms varied as a function of the children's child-care setting. Children enrolled in minimally adequate care (Group 1) engaged in less complex peer play and more often developed complex peer play forms at later age than children in model or good-quality care (Group 2). This finding suggests that children's social development is influenced by the quality of their child care, as supported by previous studies.

In these two studies, Howes and Matheson (1992) suggested that children's social competence with peers may be assessed by observing their play with peers during free play activities. Children's developmental sequence can be observed and recorded through systematic observation methods. They summarized that children appear to exhibit continuity over developmental periods when they engaged in different play
forms. The limitation of this study was that similar comparisons could not be made between the proportions of each play form across age intervals in Study One and Study Two because of the longitudinal nature of Study One.

Social competence is critical for all children in inclusive educational settings. Supporters for inclusive education believe that the benefit of inclusions for all children is the social integration of children with disabilities. Peer interactions have been found more frequent in inclusive classrooms than in self-contained special education settings (Guralnik, Gottman, & Hammond, 1995). However, children with and without disabilities may have shown different ways to learn social skills. For example, some children learn best during free play through active peer interactions; others may learn best by observing a peer or an adult playing or acting. Further, what seems to be appropriate for a typically developing child may not be effective for a child with disabilities. Early childhood educators who believe developmentally appropriate practice often hold a constructivist orientation that values the child's active exploration and interaction with the environment and peers; whereas many practices in special education are typically grounded in behavioral theory (McCay & Keyes, 2001/2002).

No matter from which theoretical perspectives, early childhood education and special education professionals must at least agree upon that the common goal of education for young children is to help each child reach his or her own potential by providing appropriate, high quality programs for all children. Professionals need to recognize the importance of social development in educating the whole child. During the social interaction of young children, modeling of adult or peers and respecting the needs and interests of the individual child are equally important.
Garfinkle and Schwartz (2002) conducted a single subject research across four subjects to evaluate the effectiveness of a peer imitation intervention in inclusive preschool classrooms. The theoretical ground of their research was the social learning theory developed by Bandura (1977) who suggested observational learning, or learning a new response by observing the behavior of a model. Observational learning has been used to teach young children with disabilities a variety of skills including delayed imitation skills. In order to be an observational learner, the target child must watch a model and imitate the model’s response. For a child in the classroom, to become a successful observational learner where the models are peers, the child must imitate his or her peers. In this study, Garfinke and Schwartz (2002) used peer imitation as the intervention.

The four subjects in this study were all boys enrolled in an integrated university affiliated preschool. Their ages ranged from 3 years 7 months to 5 years 5 months old. Among the four subjects, three were diagnosed with or were in the clinical range on diagnostic tests for autism. The other child did not have a formal diagnosis but had a documented developmental delay. All the four subjects had significant social, communication, and cognitive delays, and all were qualified for special education services. Their social deficits were defined as poor social skills and the inability to interact with their peers.

The four subjects attended three classrooms (two subjects were in the same classroom). The intervention tool place in the children’s classrooms as part of the ongoing classroom activities. All the participating classrooms had a similar schedule of daily activities: small-group activities, large-group circle, snack, outside time, free play,
and a second large-group circle. All the four subjects had attended the school in these classrooms for a minimum of 4 months before the start of the study. The assistant teacher was responsible for implementing the intervention in all cases.

A multiple baseline design across four subjects in three classrooms was applied to this study. After a baseline period, the peer imitation training was initiated. Baseline data were collected simultaneously for children. The intervention was initiated the same time for the two subjects who were in the same classroom. Three subjects participated in a post peer imitation training follow-up condition. During small group baseline condition, each child was encouraged to participate in the small group activity for 15 minutes. Children had identical materials, and teachers provided examples of how the materials could be used. During free play baseline condition, the subjects, the small-group peers, and the rest of the students in the classroom all participated in free play learning centers such as a sensory table, a book area, a computer area, music, a free art shelf, gross motor activity area, and the materials from the small-group activity.

During small-group peer imitation training (intervention), the same peers and teachers who participated in the baseline small groups were involved in the training groups. Same as baseline, the training also took place in the same space using the same environmental artifacts that were used during baseline and the children had identical sets of materials. The intervention included four steps: 1) teacher instructions to the small group; 2) leader selection; 3) prompts to promote imitation; and 4) praise of imitative acts. The intervention was continued until each child in the small group (including the subject) had the opportunity to be the “leader” twice. The whole intervention procedure lasted 10 minutes of each small-group time.
Generalization and maintenance data were collected during free play and follow-up periods. Even after the small-group training sessions were started, the conditions at free play remained the same as they were during baseline. No intervention-specific training or prompting occurred during free play. After small-group training was discontinued, the follow-up phase started. During follow-up, small group returned to baseline conditions. The children received no prompts either to volunteer to be the leader or to imitate any peer’s actions. Data were collected at small group and at free play for all but one subject due to excessive absenteeism.

Data collection was conducted for baseline, interaction, and follow-up phases during small group activities and free play time. Although the target child was the focus of the data collection, data were collected on the peers when they imitated or socially interacted with the target child. Ten-second interval observational system was used to collect data. During each interval in small-group measures, the observers recorded the following social interaction or imitation of peers: social initiations, positive responses, negative responses, no responses, independent peer imitations, and prompted peer imitations. During each interval in free play, three more categories of behaviors were coded: nonsocial engagement, proximity, and prompt.

Interobserver agreement was assessed by having two observers code behaviors independently, but simultaneously. The reliability for small-group observations (all the observations on all behaviors across subjects) ranged from 96% to 100% with a mean of 98%. Interobserver agreement for the free play (all the observations on all behaviors across subjects) ranged from 83% to 90%, with a mean of 86%.
The data for all subjects show that the independent variable (small, peer imitation training) was implemented sufficiently (and not implemented at baseline or follow-up phases). The data indicate that there is variability in all the subjects’ behavior, but all subjects were able to imitate their peer’s behavior. Further, at least for a portion of the time these imitations were independent. The data also indicate that social behavior was not greatly influenced by the training protocol during small group. The findings suggest that for all subjects, their rate of nonsocial engagement increased from baseline levels during intervention and maintained above baseline levels through follow-up.

The results of the social validity questionnaire show a high level of satisfaction with the intervention. Social validity was measured by five questions arranged on a 5-point Likert scale (1=not at all and 5=a lot) and by four open-ended questions. The results of the scaled portion of the questionnaire indicate that the adult participants in the study found the intervention easy to implement and important for the children. The answers from the open-ended questions indicate that the adult participants made observations that support the results of the quantitative data without seeing the data.

One limitation of Garfinkle and Schwartz’s study (2002) was about the multiple baseline design across four subjects. The intervention was initiated for two of the subjects from the same classroom at the same time. In multiple baseline design, implementation of the intervention to different subjects occurs at different times sequentially. One of the criteria to start the intervention to a new subject is when the previous subject has reached the preset criteria to establish a functional relationship between the intervention and the change of behavior. In this study, the functional
relationship between the peer imitation and the two subjects’ social behavior was not strongly established because of this weakness in design.

Another study on social play of children between preschoolers with and without disabilities was conducted by Ivory and McCollum (1999). Some indications suggest that children with disabilities may not benefit as easily and naturally from their play as children without disabilities (Kohl & Beckman, 1984). Children with disabilities may be less likely to initiate play with their peers or the different types of toys may not provide sufficient opportunity for children with disabilities in social play or object mastery. Ivory and McCollum (1999) conducted this study to evaluate whether the availability of particular types of toys would influence the level of interactive play of children with disabilities in an inclusive preschool classrooms.

According to Ivory and McCollum (1999), although previous studies suggested that the careful selection of toys may be a useful tool for influencing the frequency of interaction between children with and without disabilities in mainstream or inclusive settings, most studies did not address the question whether the same type of systematic provision of toys also influence levels of social play. If a relation could be found between the types of toys available and the level of social play, then toys could be used as an unobtrusive approach for assisting children with disabilities to experience higher levels of social play.

Eight children (5 girls) with disabilities in two inclusive preschool classrooms were selected as the subjects in this study. Each classroom had a total of 14 children, including four children with disabilities and ten children from families of low economic status. The chronological ages (CAs) of the subjects ranged from 3.8 to 5.1, with a mean
of 4.5. The eight subjects had been identified as eligible for special education services based on the state's eligibility criteria. The information from the subjects’ school records indicated that only one child had a categorical disability (cerebral palsy). Of the other seven subjects, one had general motor delay, two had cognitive delays, two had language delays, and the remaining two had both cognitive and language delays.

Two sets of toys, social and isolate, were delineated and then systematically varied across 4 weeks. The social toys included blocks, dress-up clothes, dolls, dollhouse, housekeeping materials, puppets, and vehicles. The isolate toys included playdough, legos, books, paints, paintbrushes, paper, scissors, crayons and markers, and puzzles. The types of toys were all play materials readily available for teachers to use in preschool settings. All observations were made in a specific play center in each of the two classrooms during the free play period. The play center was stocked alternately with social or isolate toys using a specific rotation schedule, with types of toys counterbalanced weekly across the two classrooms. Children were free to enter and leave the center as they chose, with the maximum number of children present of four at any one time because of the limited size of the center.

During the observation procedure, each classroom was observed three times a week for four weeks with a total of 12 observations for each classroom. Data were collected during 30-minute free-play period. A focal-child, time sampling observation technique was used with each child with disabilities being observed for 5 minutes at 10-second intervals. The observer recorded the highest level of social play exhibited during each 10-second interval.
Codes for levels of social play were adapted from Parten's (1932) social participation code. The levels of social play were arranged as follows: onlooker, child watches the other children but does not join in the play; isolate, child play alone and independently with toys that are different from those of other children and makes no effort to get close to others or converse; parallel, child plays with similar toys but independently, not attempting to influence the play of the other children; and cooperative, child plays with other children, mutually using or exchanging materials, and may talk about the activity.

Interobserver agreement was achieved by having the experimenter and another trained observer simultaneously but independently record the children's play behavior. The two observers reached an agreement level of 87% on the videotapes of free play similar to the actual setting before moving to the classrooms to practice. Then the observers reached an agreement level of 81% across 3 weeks of practice in the classroom before beginning the research study. Interobserver was maintained at a minimum of 85% with M=91% and range=85% to 100%.

One of the subjects only came to the center twice during the observation. Therefore, data for this subject were not included for analysis because of the extreme absence. The percentages of intervals accounted for by each of the four codes across all seven remaining subjects and both conditions were: onlooker, <1%; isolate, 13%; parallel, 69%; and cooperative, 19%. Percentages used in all analyses were based on the number of intervals for each of the three levels of play: isolate, parallel, and cooperative under each condition separately. A wilcoxon sign test performed on each level of play across the two conditions indicated that cooperative play occurred significantly more
with social toys than with isolate toys. Parallel play was the most common level of play for all seven subjects. However, cooperative play was more likely when social toys were available than when they were not.

Whereas under the isolate toy condition parallel play was significantly more common than either isolate or cooperative play, under the social toy condition parallel and cooperative play were both more likely to occur than isolate play and did not differ significantly from one another. The findings of this study indicate that thoughtful selection of toys may influence the level of social play of preschool children with disabilities in inclusive classrooms.

The question whether toy use would be influenced by the type of play partner available (with or without disabilities) or by the presence of an adult was not answered. In this study, because there was little variation in these variables: children without disabilities were almost always present, and adults were seldom present. Generalization also may be limited by the particular characteristics of the children with whom these children with disabilities were included. All peers were identified as being at risk for academic failure due to some environmental factors such as low family income. This study could not address the question whether the influence of toys varied depending on differences in developmental status due to its reliance on developmental information available in the subjects’ school records.

Recognition of the importance of peer relationships to children’s social functioning has led researchers to question the origins of children’s social status among peers. Given the fact that children’s earliest social interaction occurs within the family, researchers have turned their attention to examine possible links between patterns of
interaction within children’s family of origin and children’s peer relationships. In addition to the interaction between children and their siblings, parent-child interaction has been identified as a major contributor to children’s social behavior with peers.

According to family systems theory, family functioning is constructed through the patterns of behavior displayed between members of particular family subsystems and through interactions between family subsystems, so the family as a whole is greater than the sum of its constituent subsystems (von Bertalanffy, 1968; Minuchin, 1985). Lindsey and Mize (2001) conducted a study to examine possible associations between processes of interparental agreement and children’s social competence based on literature on linkages between the family and children’s peer relationships.

Lindsey and Mize (2001) hypothesized that interparental consistency would be linked to children’s social competence with peers, and that this association would be mediated by responsive parent-child interaction. First parents completed the Raising Children Questionnaire (RCQ), a 49-item instrument focusing on parents’ childrearing beliefs. Thirty-one items used a 5-point scale ranging from 1 (not at all descriptive of me) to 5 (highly descriptive of me) and 18 items were a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

The questionnaire portion of the study included 169 parents (87 mothers and 82 fathers) of 3-, 4-, and 5-year-old children. These children were enrolled in a university-sponsored preschool program that served predominantly White, middle-income families in a small southeastern city. Then the study focused on 40% of the mother-father pairs who had completed questionnaires: 33 mother-father pairs (18 with boys; 29 White, 2 African American, 2 of other ethnicity).
Observations of parent-child interaction were taken in a comfortably furnished room where parent-child pairs were videotaped from behind a one-way mirror. There were a total of four interaction sessions. Each session included a one-hour period: a puzzle task, book reading, pretense play, and physical play. The data were focused on parent-child interaction during the third and fourth sessions where 20 minutes of parent-child pretense and physical play occurred. Parent-child pairs were provided toys during the play sessions to elicit pretense play or physical play.

Videotapes of parent-child play sessions were coded using an event-based coding scheme for the occurrence of initiations and responses to initiations for both parent and child (Lindsey & Mize, 2000). Overall interrater reliability for initiations and responses was $K=.90$ and $K=.83$, respectively. Initiations were identified as belonging to one of the five categories. These categories included: leads, requests for information, requests for information, polite commands, and imperatives. Each initiation also was identified as being a play initiation or a nonplay initiation defined by the intent and action. A parent-child responsiveness score was also created for both mother-child and father-child dyads based on the average ratings dyads received across all intervals.

Children’s classroom peer acceptance was assessed using sociometric interviews. Each child rated his or her classmates as “like a lot,” “like only a little, sort of,” or “don’t like very much.” To assess children’s general social skills and behavior with peers, the head teacher in each classroom was asked to complete the Teacher’s Checklist of Peer Relationships (Dodge & Somberg, 1987) including 17 items rated on 5-point Likert scales.
The results of the study by Lindsey and Mize (2001) show association between peer acceptance and parental interparental agreement. Parents who were in relative agreement in beliefs about the use of control with children and parents who were similar in their use of controlling behavior had children who were better liked by peers. However, associations between measures of interparental agreement and children’s social competence were reduced after taking into consideration the effect of parent-child responsiveness on children’s social competence. Therefore, the results of this study suggest that interparental congruence contributes to higher levels of responsiveness between parent and child, which in turn influences children’s social competence with peers. These findings indicate associations exist between multiple family subsystems and children’s relationships with peers.

One limitation about Lindsey and Mize (2001)’s study was the structured setting where parents and children were observed for the study purpose. Thus generalization of the findings to more naturalistic settings should be cautious. Different patterns of associations might be observed in natural settings such as home.

Summary of Research Related to Social Competence

Both Parten (1932) and Howes and Matheson (1992) examined the developmental sequences of children’s peer play. Parten focused her study on a group of preschoolers between ages 2 and 5. Extending Parten’s study on preschoolers, Howes and Matheson (1992) conducted a longitudinal study of peer play development from infancy through preschool. Howes and Matheson also replicated their first study in the second study assessing the peer play of children ages 10 to 59 months.
Parten (1932) defined children’s social participation from the least to the most social interaction with peers in six categories: unoccupied behavior, onlooker, solitary independent play, parallel activity, associative play, and cooperative or organized supplementary play. In similar order from simple to complex social interaction with peers, Howes and Matheson (1992) categorized peer play as: parallel play, parallel aware play, simple social play, complementary and reciprocal play, cooperative social pretend play, and complex social pretend play.

Because Howes and Matheson (1992) extended the study that included a wider age range and several developmental periods from the infant through the preschool periods, they were able to order their observations of children’s peer play into meaningful developmental sequences. They found out that children develop play forms in the expected sequence and at the expected ages. Children’s patterns of play form emergence and proportion of time in more complex play forms are linked to subsequent indexes of social competence. They also found that the frequency and proportion of play forms and the ages at which they emerged varied as a function of the children’s childcare setting, which supporting previous findings that children’s social development is influenced by the quality of their child care.

Garfinkle and Schwartz (2002) and Ivory and McCollum (1999) also conducted their studies on children’s social play based on Parten’s theory of peer play and her categories of social participation. Moreover, they examined the social interaction behaviors of children with disabilities or delays in an inclusive preschool setting. They both focused their studies on social play skills of young children with disabilities and how to increase the social interactions between children with and without disabilities.
The educational implication of their studies lies in that social play skills of children with and without disabilities are not only critical for young children in inclusive settings, but also important for general and special education early childhood professionals to prepare developmentally and individually appropriate programs for all children.

Different from the above studies that all focused on social behaviors of children, Lindsey and Mize (2001) viewed children’s social behaviors from the perspective of family system theory. Their study examined the associations between interparental agreement, parent-child responsiveness, and children’s social competence with peers. They found out that parental agreement on beliefs about the use of control and parental similarity in the use of control was positively associated with children’s social competence. Parent-child responsiveness also was positively related to children’s social competence. This study again has an educational significance that values the critical role of family involvement for educating the child in all developmental areas.

Review and Analysis of Studies Related to CWPT

Over 20 years in the past, a rather extensive and rich knowledge base has emerged to support the use of peer-mediated instruction and intervention (PMII) with students of varying abilities, interests, and backgrounds. PMII are a set of alternative teaching arrangements in which students serve as instructional assistants for classmates and/or other children. In PMII, the teacher’s role changes from primary deliverer of instruction to facilitator and monitor of peer-teaching activities (Maheady, Harper, & Mallette, 2001).
Peer-mediated instruction and intervention has been researched in many areas. Significant improvements have been found in literacy competence, academic and interpersonal performance, peer-interaction patterns, and self-help skills (Maheady et al., 2001). Children involved in these studies included children with mild disabilities, students with behavioral problems or disorders, young children with hearing-impaired disabilities, children with autism, and students with low achievements (Maheady et al., 2001). Classwide Peer Tutoring (CWPT) is one of the most well-researched peer-mediated approaches that have been used widely with students with diverse needs in different areas. What follows is literature review related to CWPT.

One of the earliest investigations of peer tutoring as part of an intervention was conducted by Robinson, Newby, and Ganzell (1981) for students with ADHD. The purpose of this study was to investigate the effects of a classwide token reinforcement program on the academic performance of 18 hyperactive third-grade boys placed in a special education classroom.

A single-subject BAB reversal design was used (with B as treatment, A as baseline) in this study. The independent variable was the combination of token reinforcement and peer tutoring. The dependent variable was to pass a given level of vocabulary test. The combination of token reinforcement and peer tutoring led to immediate and significant gains in vocabulary performance for most students.

In addition to the improved academic performance, this study showed an improved cooperation between the student with ADHD and the peers. Classroom disruptive behavior decreased dramatically even though it was not a direct target of the
intervention. However, the specific effects of peer tutoring cannot be determined because it was combined with token reinforcement.

Greenwood and colleagues (1989) conducted a four-year longitudinal study to examine the effects of CWPT on academic performance of low socioeconomic students from first to fourth grades. The subjects in this study were selected from four schools. The experimental group consisted of low socioeconomic students in four schools. Teachers employed CWPT in first, second, third, and fourth grades for the experimental group. Their results were compared to an equivalent control group of low socioeconomic students (two schools) and a high socioeconomic control group (three schools). For the control group teachers employed traditional instructional methods.

The students in the CWPT group made significant gains on the Reading, Mathematics, and Language subtest scales of the Metropolitan Achievement Test (MAT). At the end of fourth grade, the students in the experimental group exceeded students in the control group by 10 (reading) to 13 (language) percentile points, whereas the high socioeconomic comparison group was 16 (math) and 22 (reading) percentiles above the control group. The students in the experimental group ended fourth grade at the 44th percentile in reading, 50th percentile in math, and 54th percentile in language. The national median on the test is the 50th percentile. In each area, the students in the experimental group approached or exceeded this level. The same percentiles for the students in the low SES control group were the 34th in reading, 43rd in math, and 42nd in language.

A controlled case study of CWPT was conducted by DuPaul and Henningson (1993). The subject was a 7-year-old boy with ADHD placed in a second-grade general
education classroom. A single-subject withdrawal design (ABAB) was used to evaluate the impact of CWPT (independent variable) relative to baseline conditions on on-task behavior, fidgeting, and math performance (dependent variables).

The observation was conducted in the subject’s regular education classroom, where 28 other students were present. A regular education teacher and a special education teacher were both present in the classroom. A variety of measures were used to document progress associated with peer tutoring. These included tallying of peer tutoring points on an individual student basis, conducting curriculum-based measurement probes (Shinn, 1989) several times per week, and the administration of teacher-made tests on academic material practiced during peer tutoring sessions both prior to and following each week’s tutorial sessions.

The subject was observed during math instruction using a modified version of the ADHD Behavior Coding System (Barkley, 1990). On-task and Fidgets were recorded using a 30-second partial interval coding system. The subject was considered on-task if he did not display visual inattention from instruction or task materials for 3 consecutive seconds or longer at any point during the observation interval. Fidgets was defined as any task-irrelevant motor movement that occurred at least four times in succession. The occurrence of each behavioral category was coded only once per 30-second interval.

During baseline condition, mathematics instruction was provided in accordance with the typical classroom routine. Observations of the subject’s behavior were conducted by an undergraduate research assistant trained by the first author to use the modified ADHD Behavior Coding System. Overall reliability was 92% with reliability.
for the separate categories of On-task (89%) and Fidgets (95%) over 80% throughout the study. CWPT procedures were implemented during intervention condition. After the intervention procedure, CWPT was withdrawn and the procedure was back to the same condition as baseline I. Then peer tutoring procedures were implemented again.

The researchers found out that CWPT led to significant improvements in the on-task behavior and the activity level. During math class, CWPT led to significant increase in on-task behavior and reduction in fidgeting relative to typical instructional conditions. Less consistent findings were obtained with respect to math performance.

The findings of this study are limited because only one student was used, minimal data were available regarding changes in academic performance, and no data were provided about the interactions or relations between the subject and his peer. Further, no assessment was made regarding the acceptability of this intervention to the teacher. In addition, several reinforcers (e.g., small toys) were awarded; thereby, the individual effect of peer tutoring is unknown.

DuPaul, Ervin, Hook, and McGoey (1998) replicated and extended the results of the previously discussed case study with a larger group of students exhibiting significant ADHD-related behaviors. The purpose of their study was to examine the effects of CWPT on the task engagement, activity level, and academic performance of 19 children with ADHD and 10 peer comparison students.

The 19 subjects (16 boys, 3 girls) attended grades 1 through 5 in two school districts, with a range of age from 6 to 10 years old. The subjects were achieving academically in the low average range. Most of them were from families in the lower middle socioeconomic class. Fourteen of the subjects were Caucasian, 3 Hispanic, and 2
African American. One of the boys dropped out of the project after two weeks because his teacher no longer wanted to participate. Therefore, the final data were based on 18 subjects. These 18 subjects with ADHD participated in the study on a voluntary basis. Teachers determined the peer tutoring pairs for all of the students in their classrooms.

In addition to the 18 subjects, 10 peer comparison children were included in the study. These children were enrolled according to following criteria: were matched for gender; were from the same classrooms as participating children with ADHD; and were nominated by their teachers as average in terms of behavior and academic performance. None of these students had ever been referred for learning or behavioral problems and they did not serve as peer tutors for the students with ADHD during CWPT conditions.

An ABAB withdrawal design was used. CWPT was the independent variable; dependent variables included operationally defined classroom behaviors and academic performance. A modified version of Behavioral Observations of Students in Schools (BOSS) (Shapiro, 1996) was used to observe behaviors based on the following categories: active on task, passive on task, off task, and fidgets.

A partial-interval coding procedure was followed. The behavior was observed for 15 s with 5 s for recording. Each observation session lasted for 15 to 20 min during academic instruction and related activities. A second set of measures examined academic performance for 14 of the 18 subjects and all the 10 peer comparison participants. Throughout the study, the classroom teacher administered pretests and posttests of academic material on a weekly basis. For social validation, 17 of 18 participating teachers, 16 of 18 subjects, and 5 of 10 peer comparison students
completed consumer satisfaction ratings at the conclusion of their involvement in the study.

The effects of CWPT were investigated using an ABAB withdrawn design in 18 classrooms over the course of 2 school years. Each subject was studied under four conditions: Baseline 1 (typical classroom activities), CWPT 1 (implementation of CWPT in math or spelling), Baseline 2, and CWPT 2. Each experimental condition lasted from 1 to 2 weeks.

Interobserver agreement was evaluated during 20% of observations across all participants and experimental phases as well as for 100% of weekly pretests and posttests. Agreement was consistently above 80%, with means of 98% for active on task, 94% for passive on task, 98% for off task, and 99% for fidgets. Agreement for pretests and posttests was determined on an item-by-item basis, with 100% agreement obtained across all participants and experimental conditions.

The results of this study indicated that the active engagement in academic activities of students with ADHD significantly increased from an average of 22% during baseline to an average of 82% when CWPT was implemented. Results also indicated that this intervention affected both attentional behavior and academic performance. Furthermore, similar positive changes in behavior and academic performance were exhibited by randomly selected students without ADHD.

The study of DuPaul and colleagues (1998) was limited with several factors. First, weekly pretests and posttests were not collected during the first year of the study. Therefore, a sample of only 14 children with ADHD was included for analysis of these dependent measures. Second, at least one teacher reported that peer-tutoring was not...
efficient and felt the intervention was ineffective. Thus the relationship between teaching styles and individual success or failure of students with ADHD needs to be addressed. Third, no report was given on the social functioning of the participants.

Locke and Fuchs (1995) investigated the effects of a peer-mediated reading instruction (PMI) strategy on the attentional behavior and peer interactions of three boys identified as having attention deficits on their individualized education plans. The three subjects were all 11 years old and were placed in a self-contained classroom for students with behavior disorders. They all were reported to be in the borderline range of intellectual functioning.

An ABAB withdrawal design was used to contrast teacher-led typical instruction with PMI in reading. The PMI strategy was the independent variable and on-task behavior and social interactions were the dependent variables.

Results from this study were consistent with previous studies of peer tutoring with children with ADHD. A substantial increase in on-task behavior associated with PMI was found (88% during PMI compared to 52% during typical instruction) in all three subjects. The very little overlap in the range of data across phases indicated an immediate and consistent difference during PMI in academic engagement. Even though PMI was implemented to enhance reading performance, increases in positive social interactions also were obtained.

Unfortunately, Locke and Fuchs (1995) did not present any data to document the relationship between on-task behaviors and social interactions. Did the increase in on-task behavior lead to the increase in positive social interaction, or vice versa? In addition, no data were documented about the effects on reading performance. It is
unknown whether the subjects had really improved in reading comprehension, or just appeared to be more attentive. Furthermore, the study was not conducted in a general education classroom. Thus the effects of peer tutoring on relations between children with and without ADHD is unknown.

In addition to academic improvement, CWPT was used to teach health and safety facts (Utley et al., 2001). Utley and colleagues (2001) examined the effectiveness of CWPT upon the acquisition and comprehension of names of body parts, body functions, poisons, dangerous situations, and drugs and their effects in a health education curriculum.

Five elementary students with developmental disabilities in a self-contained classroom participated in this study. Classroom personnel included one teacher, a paraprofessional, and a volunteer. Training for the teacher began about two weeks prior to the first CWPT phase. The training session focused on curriculum-based measures, weekly data collection procedures, classroom structure, peer tutoring procedures, and the teacher’s role during the study.

A single subject BAB experimental design was used in this study. The percent correct on weekly pre and posttest scores on curriculum-based measures was the dependent variable. The measure of the independent variable (CWPT) consisted of a procedural reliability checklist. The checklist was administered by the experimenter on two occasions during each tutoring phase of the study. Weekly pre and posttests were administered to all the students throughout all phases of the study. The composite pre and posttests consisted of all the items on the topic content areas to be instructed during tutoring and the traditional (teacher-led) instructional phases.
On two occasions, weekly pre and posttests were initially scored by a second observer and then independently re-scored by the experimenter. During the composite pre and posttests, a second observer randomly scored the tests and these were also independently scored by the experimenter. Two reliability checks yielded 100% agreement between the two observers. A student satisfaction survey and a teacher satisfaction questionnaire were conducted for social validation measures.

The five subjects' weekly mean pretest scores during both CWPT phases ranged from 5% to 62% correct. On weekly posttest scores the mean percent correct increased to a range of 82% to 100%. In contrast, the baseline weekly mean pretest percentage scores during traditional instruction ranged from zero to three percent while the highest weekly posttest score was only 12%.

This study indicated the effectiveness of CWPT procedures in teaching students with developmental disabilities health and safety topics such as names of body parts, body functions, poisons, dangerous situations, drugs and their effects, and comprehension of health and safety topics. However, this study did not examine the generalization and maintenance of the acquired knowledge to behaviors outside of the classroom. Also, the BAB design did not provide baseline data prior to the implementation of the intervention. Therefore, the subjects’ level of functioning prior to the experimental treatment was not determined.

Although inclusion has been the trend in early childhood education with its strong theoretical base and educational significance, the majority of classwide peer tutoring studies for students with mild mental retardation (MMR) has been conducted in self-contained or other special education settings. In 1999, Mortweet et al. investigated
the academic effects of classwide peer tutoring (CWPT) for students with MMR and their typical peers in inclusive classrooms. Data on the curriculum-based spelling tests of students with MMR and their typical peers were collected and analyzed.

Two inclusive elementary classrooms were the setting for the study conducted by Mortweet and others (1999). Twenty-five typical developing students and two students with MMR were enrolled in each classroom. Data were collected on the two students with MMR and two typical peers from each classroom. The four students with MMR were included in the general education classrooms for spelling, a social activity period and lunch period. Two of them were 8 years old and the other two were 10 years old, three females and one male. The four target typical peers were selected by the teachers in response to a request for low and high achievers in spelling. Two of them were described as high achievers and two as low achievers in spelling.

A withdrawal treatment design was employed to compare the effects of teacher-led instruction (A) with CWPT (B) on spelling test performance. During teacher-led instruction (A), spelling instruction in both classrooms consisted of 20 minutes of teacher-specified lessons using a grade-level spelling book. During CWPT (B) phase, tutoring sessions were conducted four times a week for 20 minutes per day using teacher-designed spelling lists. All students were randomly paired as tutor and tutee. Each pair of students was then randomly assigned to one of the two competing teams. Peer partners and team assignments were changed on a weekly basis.

The teachers were trained in the CWPT procedures and materials during one, 2-hr session before the study began. The fidelity of implementation of CWPT procedures was verified by the investigators using direct observation to complete a CWPT Fidelity
Checklist. Students were trained by the investigator and teachers during two, half-hour spelling periods. One, 15-min training session was also conducted at the beginning of the second CWPT condition to remind the students of the procedures.

Weekly lists of spelling words were developed by the teacher and pretested each Friday. Posttests of the words studied during the week were also conducted on Fridays. A momentary time-sampling procedure was used to record observations by using the Code for Instructional Structure and Student Academic Response (Carta et al., 1992). Academic engagement scores were calculated as a composite of the individual student behaviors including: writing, reading aloud, reading silently, task participation, and talk academic. Each target student was randomly observed once during the entire 20-min spelling period for each condition. Interobserver reliability for the observation was 97% across all categories based on 13% of the total observations. Reliability for the student response category was 93%.

Overall, Mortweet and colleagues (1999) found that seven of the eight subjects spelled with more accuracy during CWPT when compared to teacher-led instruction and one subject spelled with the same average accuracy during both CWPT and teacher-led instruction. All of the eight subjects demonstrated greater average pretest-posttest gains during CWPT than during teacher-led instruction. All eight subjects were engaged in higher rates of academic responding during CWPT when compared to rates during teacher-led instruction.

Social validity was reached by the consumer satisfaction questionnaires completed by the two classroom teachers. Both teachers indicated that the CWPT program had academic benefits for their students with MMR and typical peers.
However, the Classroom B teacher reported difficulty working CWPT into her general schedule and did not notice a lower rate of inappropriate behaviors during CWPT. Thus the decrease of inappropriate behavior was not satisfactory for the expectations of the teacher in Classroom B. Students in both classrooms also reported positive academic responses to the CWPT program.

The findings of Mortweet and colleagues’ study (1999) indicated that CWPT was effective in improving academic achievements and the level of academic engagement for students with mental retardation in inclusive classrooms. One of the limitations about this study is that no social outcomes were reported during the CWPT procedure. Because CWPT is a peer-mediated approach in which peer interaction is the essential component of the procedure, data on social effects of CWPT would provide important information about its usefulness as a social intervention.

Despite the fact that formal academic education would not begin until children enter grade level schools, children are taught many skills in preschool programs that are designed to prepare them for kindergarten and beyond. Many kindergarten teachers expect children to enter with some basic academic skills, as well as social skills, gross motor and fine motor skills. In addition to the implementation for grade level children, peer tutoring or classwide peer tutoring programs also have been applied to children as young as 4 years old in inclusive settings.

Brady (1997) conducted a reciprocal peer tutoring program for preschool children. Four preschool children with disabilities and four peers without disabilities were the subjects in this study. The purposes of his study were to examine the procedure for teaching peer tutoring skills to preschool children with and without disabilities, to
investigate academic responses during peer tutoring, and to determine whether peer tutoring would help increase the social interaction between the tutor and tutee during play time after peer tutoring was started.

All the eight subjects were from the same integrated early childhood classroom. Their age ranges were 3 to 5 years at the time of this study. Three of the four children with disabilities had delayed speech and language development. One subject had an articulation disorder. The eight subjects were grouped into four peer tutoring dyads. Each dyad was composed of one child with disability and one child without an identified disability. The subjects were escorted from the classroom to a nearby room for both the play observations and the reciprocal peer-tutor teaching. During play observations, play materials were placed on the floor. During peer-tutoring teaching, tutoring materials were placed on the floor or on a small table.

Peer tutoring materials were sets of ten, “5 x 8” cards with stimuli printed and/or drawn on the front. The correct answer was indicated on the back of each card. Pretests were completed prior to peer tutoring. A set of 10 cards in which the student had correctly answered 40% correct prior to peer tutoring were selected. The play materials during social interaction observations included: a toy barn with animals, a Lincoln Log set, Duplo Blocks, coloring crayons, and a coloring book, a toy purse, two dolls and doll clothes, and several picture books.

Children participated in the study at an average of 3 times per week. Each peer tutoring session lasted about 30 minutes per dyad. Tutoring skills included stimulus presentation, appropriate tutee responses, praise and corrective feedback, token delivery, and prompt. The experimenter first modeled the correct behaviors and then the tutor and
tuttee practiced the procedure until they mastered all the steps. Both tutor and tuttee’s
responses were recorded by making a code corresponding to a target behavior with a
pencil. Interobsever reliability for tutoring skills and tuttee responses were calculated on
at least 9 sessions and up to 16 sessions per dyad. Percent agreement scores ranged from
80% to 100%, with a mean of 96.1%.

Data for the subjects’ social interactions were collected during 6-minute play
periods. Play period immediately preceded peer tutor instruction. This was considered a
more conservative measure of social interaction effects because any spillover effects
from peer tutoring would have to carry over at least 24 hours. Categories of social
interaction behaviors were defined as follows: positive initiations, including positive
motor-gestural and vocal-verbal expressions directed toward the peer; negative
initiations, such as hit or shout directed toward the peer; positive responses, negative
responses, and length of interaction between children. The number of sessions for
interobsever reliability during social interaction ranged from 7 to 15 for each dyad.
Percent agreement scores ranged from 95.7% to 99.9%, with a mean of 97.5%.

Multiple baseline designs were used to evaluate the effectiveness of instruction
on learning tutoring components and the impact of peer tutoring on social interactions.
A multiple baseline design across behaviors was used to evaluate the effectiveness of
teaching tutoring components. A multiple baseline design across subjects was used to
evaluate the effects of peer tutoring on social interactions.

Results from Brady’s study (1997) indicated that experimental procedures of
peer tutoring were successful in teaching preschool children to tutor each other for the
most part. The findings also showed that peer tutoring produced consistent academic
gains for all tutees. However, the social interaction effects of peer tutoring were mixed from this study. The social interaction time was increased for two of the four dyads after peer tutoring. Two other dyads did not increase social interaction time until contingencies were directly applied to social interactions. These findings indicate that different subject dyads may react differently to peer tutoring. The weak spillover effects of peer tutoring on social interactions may partly be a function of the conservative measurement employed in this study.

One problem of this study is the isolated setting for both the play observations and the reciprocal peer-tutor teaching during the study. Whenever possible, children should be observed in their natural setting, that is, in the general education classroom or setting where other children are present. Social behaviors of young children from natural settings might be significantly different from their behaviors when they are separated from the regular peers and routine activities.

Summary of Research Related to CWPT

As most of the literature demonstrates, peer tutoring or CWPT has proven to be effective for increasing academic achievements and improving the classroom behaviors of students with different needs. Children involved in CWPT procedures included typically developing children, students with ADD/ADHD (e.g., DuPaul et al., 1998), with mild mental retardation (e.g., Mortweet et al., 1999), developmental disabilities (e.g., Utley et al., 2001), and low SES (e.g., Greenwood, et al., 1989). The settings of CWPT were special education, general education, or inclusive classrooms. Further, previous studies were across a variety of subject contents (e.g., spelling, math, social
Few studies have focused on primary grade children with LEP background, in spite of the impressive research studies available on the effective implementation of CWPT procedures in increasing academic engagement, academic acquisition, and social skills in diverse student populations. Even fewer studies have been done to compare the effectiveness of CWPT on students with and without LEP in their social interactions in the general education setting. Next were reviews of previous studies on children with LEP.

Review and Analysis of Studies Related to Children with LEP

A growing number of children entering U.S. schools have been experiencing difficulties learning to read and becoming literate because they are not native English speakers. Individual differences in children's social skills also influence the rate of language learning, especially second language acquisition. Although children may use similar cognitive processes to acquire a second language, individual differences in motivation and social skills influence exposure to and interaction with native language speakers.

Cooperative learning and peer tutoring strategies are believed to have the potential to effectively and rapidly increase English-language development of English language learners (Gersten & Baker, 2000a). Intervention studies on cooperative learning or peer tutoring strategies indicate that both cooperative learning and peer tutoring interventions led to improved learning outcomes (Gersten & Baker, 2000a).
Peer tutoring offers children acquiring a second language structured opportunities for successful initiation and meaningful interaction with native language speakers.

August (1987) examined the effects of a peer-tutoring intervention on the second language acquisition of elementary school children. August's study (1987) consisted of two experiments. The first experiment was a group of Limited English-speaking (LES) Mexican American children; the second experiment was a group of Limited Spanish-speaking (LSS) Mexican American children. The total number of subjects was 13 boys and 13 girls, all were Mexican American children, with an age ranged from 6 to 10 years. Experiment 1 included 12 subjects who were limited English-speaking, but fluent Spanish speakers (LES). Experiment 2 consisted of 14 subjects who were limited or non-Spanish-speaking, but fluent English speakers (LSS). Children were matched on language proficiency test scores and proportion of interactions with peers in the target language. Members of each pairs were then randomly assigned to treatment and control groups.

The subjects attended an early childhood education program, Grades K-4, in an elementary school. Seven centers in the early childhood education program were provided: visual motor, language, reading, mathematics, cognitive strategies, independent work, and computer.

This was a quasi-longitudinal study that employed a matched-pairs experimental design for the two experiments over a period of 6 months. Experiment 1 examined the effects of a peer-tutoring treatment designed to encourage interaction in English between LES Mexican American children and fluent English-speaking (FES) children.
Experiment 2 examined the effects of the same treatment in Spanish to encourage interaction in Spanish between LSS Mexican American children and FSS children.

Prior to each treatment, LES children in Experiment 1 and LSS children in Experiment 2 were observed during their free time for 2 weeks to determine the amount of their interaction with peers in the target language. Two language proficiency tests were given to each Experiment group: the Peabody Picture Vocabulary Test (PPVT) (Dunn, 1965) and the Language Assessment Scales (LAS). Experiment 1 had the tests in English and Experiment 2 in Spanish. In addition, a nonverbal intelligence test was also given to both experiment groups: the Colored Progressive Matrices Test (Raven, 1963).

The peer-tutoring treatment continued for 6 weeks. It consisted of sessions designed to provide a structured setting for natural language practice between the tutor and the tutee. The tutor was a child acquiring a second language and the tutee was a child fluent in the target language. Posttreatment observations continued for 3 weeks and were made during free time.

Experiment 1 showed significant differences between subjects in the treatment and control groups in frequency of English to peers in the structured setting. The treatment group was found to speak more English. However, differences between treatment and control groups were not evidenced when the children were observed during free play time. Yet 13 weeks after the intervention, the treatment group was speaking substantially more English to peers than the control group. The results from Experiment 2 demonstrate that the peer-tutoring treatment helped to increase the children’s Spanish language proficiency or to prevent it from decreasing. However, the
intervention was not strong enough to change the language-interaction patterns of the children.

Previous interaction patterns may have influenced the treatment group in favor of English. Furthermore, in early childhood programs English had much more status. For example, all teachers but one spoke only English. Language dominance of the teacher has an inevitable impact on the language environment and language use in the class. Nevertheless, the findings from August’s study (1987) suggest that peer tutoring may be an effective means of encouraging interaction between Mexican American children acquiring English and their FES peers.

A recent research conducted by Greenwood and colleagues in 2001 also focused on children who were English language learners. The study was to examine the effect of using a Classwide Peer Tutoring Learning Management System (CWPT-LMS) for elementary-level English language learners.

A single-subject design across classes and teachers was used in this study. Five elementary-level English-language learner (ELL) teachers participated in this study during the 1998-1999 school year. A total of 117 ELL students participated, with 29, 24, 20, 23, and 21 in each classroom, Grades 1 through 5, respectively. Spanish was the primary language of ELL students. All five teachers were White females. Only one teacher had received training in teaching English as a second language.

The dependent variables were students’ pre- and posttest scores on vocabulary and spelling tests representing the material taught using CWPT. Measures of fidelity and satisfaction were collected to monitor the outcome of teacher training and implementation of the CWPT program. Teachers administered weekly pre- and posttest
of the materials assigned to students for peer tutoring. The CWPT-LMS Data Analysis provided a set of graphs for viewing the students’ progress over weeks as a group, as individuals, and by individuals within a week.

Students were classified into four groups according to their weekly pre- and posttest progress information. The successful group included students whose pretest was 40% or less and posttest was 80% or above. The underchallenged group had students whose pretest was above 40%. The third group was undermastery, in which a student’s posttest was less than 80%. The fourth group was underchallenged/undermastery, where a student’s pretest was above 40% but the student did not grow to 80% or above.

Throughout the school year, 33 fidelity observations were conducted, with each teacher receiving between six and eight monthly evaluations. Interobserver reliability checks for fidelity of implementation were conducted for 18% of the total observations. Mean agreement was 98% overall, with a range of 96% to 100%. During the last month of the study, teachers completed a 13-item Likert-type survey for their opinions about academic and social benefits of CWPT. To examine the students’ satisfaction, a 16-item survey was administered in Spanish and English during the last month of the study. Also, a subset of ELL students were interviewed to determine their perceptions about CWPT. Interviews were conducted with a Spanish interpreter in either Spanish or English.

At the beginning of each week, all students in a class were paired for tutoring. The teacher used the Program Support Tool to assign each tutor-tutee pair to one of the two competing team (Greenwood, Delquadri, & Carta, 1997). During tutoring, tutees earned points for their team by responding to the tasks their tutors presented. The
winning team was determined daily and weekly based on which team had the highest point totals. Teachers first learned to implement CWPT by using the manual for teachers (Greenwood et al., 1997) combined with consultant training, to a criterion of 80% or above fidelity on the implementation checklist. Then they were trained to use the CWPT-LMS to guide implementation, enter student progress information, and evaluate weekly progress. The CWPT-LMS software was installed on each teacher’s computer.

After each teacher had successfully established CWPT and used the CWPT-LMS for 5 to 7 weeks, a 1-hour training session was provided individually with each teacher by a consultant during CWPT-LMS consultation procedures. The consultant and teacher used the computer to analyze and evaluate student and classroom progress. Every 2 weeks thereafter, the consultant reviewed the teacher’s progress data and provided written and verbal consultation pertaining to CWPT implementation and students’ performance. Sight word vocabulary was used for first graders because they were not ready for reading. Reading vocabulary was used for Grades 2 through 5. Spelling of reading vocabulary words was selected as a prerequisite activity to enhance reading comprehension. For each word the teacher taught both in Spanish and English.

The mean spelling/vocabulary score across all five classes and weeks in the program was 18.8% at pretest versus 78.6% at posttest after receiving CWPT. Individual gains after CWPT ranged from 51.7% to 66.5%. With minor exceptions, these weekly data reflect relatively consistent progress in mastering the material each week. Students achieved and sustained a pattern of mastering new English sight vocabulary (Grade 1) and spelling word (Grades 2 through 5). Across teachers and weeks in the program, there was a significant increase in the proportion of successful students before (35%
successful) versus after consultation (58% successful). Consultation seemed to reduce the number of children who were undermastering (45% to 28%), and to a much smaller extent, the number who were underchallenged (18% to 13%) and both underchallenged/undermastering (2% to 1%). The CWPT-LMS provided displays of CWPT growth for the entire class, for individual students, for outcome groups over weeks, and for individual students within each week.

Participant satisfaction was indicated by both the teachers and students. All five teachers indicated that CWPT was helpful for students of all ability levels. Seventy percent of students indicated that they liked CWPT and 96% of students indicated that they felt CWPT had helped them learn a variety of lessons.

One of the limitations of this study is that peer interaction in English language was not measured other than the improved academic learning. As a result, whether CWPT is beneficial for peer-tutoring interactions through the use of English language is unknown.

In order to investigate effective instructional practices for English-language learners or students with Limited English Proficiency (LEP), Gersten and Baker (2000b) conducted a multivocal synthesis that involved 13 educators and researchers. They used the multivocal research synthesis because of the variety of perspectives and the limited empirical data in the research literature on effective instructional practices for English-language learners.

In this multivocal synthesis, the first data source that Gersten and Baker (2000b) conducted were a series of professional work groups with practitioners and researchers across the United States to gain a sense of what practitioners and researchers saw as
promising and productive practices. These professionals included teachers, staff-development specialists, administrators, and researchers. The second data source consisted of descriptive studies of effective instruction for English-language learners. Studies were included in the synthesis if they focused on English-language learners in kindergarten through eighth grade and were conducted between 1985 and 1997.

An important feature of a multivocal synthesis is its ability to make comparisons within and among data sources. Six major principles were used in this multivocal analysis and interpretation. These principles were: significant input from practitioners for generation and refinement of interpretations; triangulation across various data sources; constant-comparative method of traversing data sources to develop and refine interpretations; conscious juxtaposition of disparate studies; serious entertaining of rival hypotheses; and reciprocal translation. The data were sorted into six general categories: 1) instructional strategies, 2) collaboration, 3) supports, 4) culture, 5) ideas for dissemination and communication, and 6) unresolved issues.

Three themes related to a deeper understanding of effective instruction for English-language learners were produced from the analysis of professional work groups, the published studies, and other documents. Theme one was the merging English-language development with content-area learning. Findings from this theme suggest that students can learn English while learning academic content, and that this type of learning will build academic language (Cummins, 1994) because students will be learning the abstract language of scientific, mathematical, or literary discourse. An effective English-language Development (ELD) should include a component devoted to helping students learn how to use the second language according to established
conventions of grammar and syntax. Instruction for English-language learners should combine oral language engagement and intellectual engagement.

Theme two was the relationship between promising approaches and the knowledge base on effective teaching. Findings from the professional work groups indicate that principles of effective instruction for native English speakers need to be modulated for English-language learners if the simultaneous goals of English-language development and content acquisition are to be met. A key to this modulation is that English-language learners need frequent opportunities to use oral language in the classroom.

The principles of best practice for effectively instructing English-language learners was called “hybrid model” by Gersten and Baker (2000b). This model had following three features: 1) it captures the essence of structured dynamic teaching; 2) it reflects extensions of validated instructional approaches described in the effective teaching literature; and 3) it incorporates principles of teaching emanating from advances in cognitive psychology. The goal of this approach was the simultaneous development of language proficiency and academic performance.

Five specific instructional variables were identified by Gersten and Baker (2000b). These variables were building and using vocabulary as a curricular anchor, using visuals to reinforce concepts and vocabulary, implementing cooperative learning and peer-tutoring strategies, using native language strategically, and modulating of cognitive and language demands. What is especially worthy to be mentioned here is the cooperative learning and peer-tutoring strategies. Gersten and Baker (2000b) believed that cooperative learning and peer-tutoring strategies have the potential to effectively
and rapidly increase English-language development, particularly decontextualized language concepts with high degrees of cognitive challenge.

Theme three was confusion, tension, and assumption about the role of oral language in academic instruction. The findings from this multivocal synthesis data source suggest that discussions of potentially effective instructional practices for English-language learners overemphasize natural language use and do not clearly articulate the important distinctions involved when language use is the major goal and when cognitive or academic growth is paramount.

The multivocal research synthesis by Gersten and Baker (2000b) integrated the perspectives of teachers and researchers experienced in working with English-language learners with readings of a variety of documents on the topic. The findings they produced may serve as the basis of an effective instructional framework. The major points from this multivocal synthesis were summarized as follows.

1). Distinguishing between language growth and academic growth is difficult and should be more closely studied. 2). The English-language development aspect of bilingual education and bilingual special education is cited as a major problem. 3). A good English-language development program should include three components: a). the development of proficiency and fluency in English; b). the more formal, grammatical aspects of English use; and c). learning new academic content. 4). There needs to be a drastic increase in the quality and quantity of instructional intervention studies of English-language learners, including English-language learners with disabilities. 5). The key for future research is well-designed and valid studies. 6). The work groups with

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Summary of Research Related to Children with LEP

The topic of how to educate children with LEP or English-language learners (ELL) brings high level of passion and low levels of rationale discourse (Gersten & Baker, 2000a). In order to improve the quality of educational services for this group of children, Gersten and Baker (2000b) believed that it is critical to shift the focus of discourse away from broad sociological and political issues towards specific instructional issues.

The qualitative multivocal research synthesis by Gersten and Baker (2000b) examined and analyzed the current state of knowledge about the effective instructional practices for English-language learners. The five specific instructional variables they found included: building and using vocabulary as a curricula anchor, using visuals to reinforce concepts, implementing cooperative learning and peer-tutoring strategies, using native language strategically, and modulating cognitive and language demands.

Using peer tutoring strategy, August (1987) examined its effects on second language acquisition of Mexican American children. correlation analyses indicated a significant relationship between English proficiency and verbal interaction in English with peers. A more recent study reported by Greenwood and colleagues (2001) was on the use of the Classwide Peer Tutoring Learning Management System (CWPT-LMS) in the literacy instruction of elementary-level ELL students. Results indicated that ELL
students made considerable progress in mastering the curriculum over periods ranging from 15 to 21 weeks of school across teachers.

Empirical data in the research literature on English-language learners were very limited. Reviews on effective instructions for English-language learners mostly focus on English-language development involving all types of instruction that promote the development of either oral or written English-language skills and abilities (August, 1987; Gersten & Baker, 2000b) or academic achievements such as spelling or math (Greenwood et al., 2001). What was neglected from previous studies is the social behaviors of children with LEP and how their social development affects other developmental areas.

Review and Analysis of Studies Related to CWPT and Social Competence of Children with Diverse Needs

Social competence has been broadly defined as the ability to perform adequately in social situations. Since home and school are the most frequent social situations for young children, the social abilities of children are often judged by parents, teachers, and peers. Evidence of social competence would thus include evaluation of the effectiveness of one’s behaviors in initiating appropriate interactions, enabling appropriate participation, and conducting appropriate behaviors in a specific social situation (Odom & McConnell, 1992).

As mentioned earlier in this chapter, peer tutoring has been used as an effective intervention in improving children’s academic performance, promoting their academic behaviors, and increasing their verbal interaction in English (e.g., August, 1987;
Greenwood et al., 2001; Mortweet et al., 1999). Studies also have found that improvements in appropriate classroom behaviors and peer interaction contribute to improved social competence (Kamps, Kravits, Stolze, & Swaggart, 1999; Maheady & Sainato, 1985).

Due to the relative few findings about the social effects of peer tutoring, Maheady and Sainato (1985) examined the effects of peer tutoring experiences upon the social status and interaction patterns of both high status tutors and low status tutees. The subjects in this study were six children (3 male, 3 female) enrolled in three regular fifth-grade classrooms in a racially and ethnically integrated school building. Their ages ranged from 10 years 6 months, to 11 years 9 months. Their IQ scores were from 84 to 122, with a mean of 102. These subjects were selected on the basis of social status within their respective classrooms.

The three targeted low status students (one male, two female) were performing approximately two years below average grade expectations in reading and math. They were presently receiving supplementary instruction in the district’s learning disabilities resource room. High status students were working at grade level and were asked to volunteer time to work as peer tutors for their low status peers. This study was conducted in two separate settings. Peer tutoring was done within each of the three regular fifth-grade classrooms for 20 minutes per day. The behavioral effects of peer tutoring on target subjects’ social interaction patterns were assessed via direct observation during lunch period in the school cafeteria.

The social status of all children in the fifth-grade classrooms was assessed using a variation of the How I Feel Toward Others (HIFTO) (Agard, Veldman, Kaufman, &
Semmel, 1978). High status students were those receiving the most “friend” and fewest “don’t like” choices, whereas low status students were the recipients of the most “don’t like” and fewest “friend” ratings. Four basic categories of social behavior were recorded: 1) positive vocal-verbal; 2) positive motor-gestural; 3) negative vocal-verbal; and 4) negative motor-gestural. Social behaviors were coded as to whether they occurred as initiated or responded events in an interaction sequence. The mean reliability scores for each class of behaviors were 86%, 85%, 84%, and 85%.

The three high status target students were asked to participate as math tutors for one of their low status classmates. Tutor training involved a discussion of the instructional format to be utilized during tutoring sessions, as well as role-play activities during which all three tutors practices the roles of both tutor and tutee. A single subject withdrawn design (ABAB) was used to assess the effects of peer tutoring by a high status peer on the academic performance, sociometric status, and social interaction patterns of both high and low status students. In baseline phase, the typical classroom routine in which all students were assigned independent seatwork for 30 minutes was in effect. Peer tutoring was then initiated only for the target students in each classroom over the next-day period. Following two weeks of peer tutoring, each classroom returned to its typical routine. Finally, peer tutoring was reintroduced for the remaining two weeks of the study. A four-week follow-up was also performed.

The results of Maheady and Sainato’s study (1985) indicate that peer tutoring resulted in substantial increases in the daily math accuracy rates of tutees. The use of high status peers as tutors produced slight, but positive changes in the sociometric standing of their low status classmates. The intervention also resulted in an immediate increase in the
number of positive social contacts, and a concurrent reduction in the number of negative social interactions between low status students and their peers. The intervention had no apparent adverse effects upon the social status and/or social interaction patterns of the high status tutors. Peer tutoring also resulted in a partial maintenance of sociometric and behavioral change during a four-week follow-up assessment.

One limitation of this study was the peer tutoring intervention was only applied to the target subjects instead of the whole class. Whenever possible, intervention should be conducted in the natural setting with their peers in the whole class level. Another limitation was that the tutor and tutee did not switch roles. That is, the high status student was always the tutor and the low status student was always the tutee. Thus a reciprocal interaction was limited in each pair. That is why Classwide Peer Tutoring is considered more appropriate to work with children in the general education classroom, where all children have the equal opportunity to be both the tutor and the tutee.

Based on recommendations in longitudinal research for addressing social/behavior issues and academic engagement, Kamps and others (1999) implemented a prevention program that designed to provide multilevel universal interventions in school sites. This multiple-component prevention program included social, behavioral, and academic interventions for students with and at risk for Emotional and Behavioral Disorders (EBD).

The target group (those receiving the interventions) included 28 students from three elementary schools, 11 of whom were identified as having EBD. The target group included 26 boys and 2 girls from Grade 1 through 7, with 23 African American and 5 Caucasian children. The control group (those in a group waiting to have the interventions...
in the next school year) included 24 students from five elementary schools, with 6 students identified as having EBD. The control group had 21 boys and 3 girls from K to Grade 7, with 16 African American and 8 Caucasian children. Children from the target and control groups were from 26 different classrooms across 12 schools located in an urban school district. Students were primarily from low-to-middle SES families. Treatment was provided within the placement classroom for all students.

Direct observation measures were used in this prevention program. Dependent variables observed included students' compliance with academic and behavioral requests, academic engagement, rates of aggression, negative verbal remarks, out-of-seat behaviors, positive and negative peer interactions at recess. Compliance was defined as the student initiating an appropriate response to a teacher's direction or command within 5 seconds. Aggression was defined as purposeful physical contact intended to harm a peer or that could be harmful with force. Threats combined with physical gestures were also considered as aggression. Negative verbal remarks were defined as statements or responses to a peer in which the intent was argumentative, taunting, teasing, or threatening in nature. Out of seat was defined as getting out of the chair during a seated activity without teacher permission. Positive behaviors at recess included both social engagement and appropriate play in a game or specified activity. Negative behaviors included inappropriate verbal statements and physical aggression.

Reliability across variables averaged 95.7% for academic compliance, 93.2% for behavior compliance, 91.8% for academic engagement, 94.2% for aggression, 87.4% for negative verbal remarks, 86.8% for out-of-seat behaviors, and 68% for recess interactions. Teacher's ratings of students' behaviors were collected using a survey with
items to reflect class participation and peer interaction behaviors. An estimated frequency of inappropriate behaviors was also collected from the teachers.

The design for this study was a sequential cohort design, with implementation of the prevention program for the first cohort (targets) followed by the implementation with a second cohort to replicate effects. Treatment consisted of a prevention program designed to provide universal interventions: classroom behavior management, social skills training, and peer tutoring in reading.

Behavior management programs consisted of points/token systems, level systems in which reprimands and consequences for inappropriate behaviors were administered in a hierarchy, home-school communication systems, and miscellaneous programs such as desk charts or marble jars with accumulation toward a reward. Social skills lessons included classroom survival skills such as following directions, task completion, making appropriate choices, and accepting consequences. Social skills also included positive peer interactions such as friendship skills, problem-solving skills, and skills to deal with inappropriate behaviors. Peer tutoring in reading consisted of implementation of the Classwide Peer Tutoring program developed by Greenwood and colleagues (1997).

Training implementation consisted of a standard procedure across teachers and classrooms. The first step was group training in the use of the interventions for school staff. Then project staff members provided consultation to individual classrooms. Baseline was about one half of the school year for the target group and one school year for the control group. The treatment procedures were in place for 1 to 1 ½ years for the target group.
Findings indicated that the prevention program supported improved student performance across several key behaviors for members of the target group. Specific improvements for the target group were noted for appropriate requests for attention, on-task behaviors, and positive peer interaction and play during recess. Aggression, disruptions, and out-of-seat behaviors were decreased. It seems that all the three components of the treatment—classroom behavior management, social skills instruction, and peer tutoring—contributed to the improved performance.

Because a component analysis was not conducted, one limitation of this multilevel study is that specific effects of the treatments cannot be identified from one intervention or another. Different intervention components may have different effects on different children. More specific, intensive intervention should be conducted in future studies.

Nath and Ross (2001) examined the usage of a peer-tutoring training model to augment cooperative learning methods. Both cooperative learning and peer tutoring are believed to facilitate learning through the powerful influence of peers not only sharing answers but also engaging in the process of finding those answers. A key difference between the two approaches is that in the most widely used forms of cooperative learning, students are expected to help each other but usually do not receive formal training in tutoring skills, whereas in peer tutoring, students typically are trained on how to teach (Jenkins & Jenkins, 1987).

In this study Nath and Ross (2001) designed a practical, comprehensive model for tutoring-skills training to investigate its impact on student behaviors and achievements. The research was conducted in an inner-city school that serves a 100% African American
student population from low-income families. Six teachers and 124 students from grade 2 through 6 participated in this study. There were a total of six ability-grouped classes (high, average, and low). Three classes contained a mixture of students of grade 2 and grade 3. Three other classes contained a mixture of students of grades 4 through 6.

Half of the cooperative groupings within each class were randomly assigned to the control group and the remaining groupings were assigned to the training group. The training group received seven sessions for peer-tutoring skills training. The training program lasted for seven consecutive weeks, with one session being covered each week.

During session 1 the concepts and definition of tutoring were discussed and daily life examples of tutoring were provided. During session 2 the term immediate feedback was introduced and its importance was explained. In session 3, the instructor explained and demonstrated prompting techniques using verbal remarks and body language. Session 4 was used for students to practice unclear instructions. Students were purposely left to wonder about these unclear instructions for a short period of time. Session 5 was a continuation of effective communication skills focusing on the aspects of listening and taking turns. During session 6, the issues of confidentiality and respect for each other in the process of peer tutoring was examined and discussed. In session 7, students were given group assignments and asked to practice staying on task with the purpose of increasing their awareness of time constraints.

While the training group received the seven sessions for peer-tutoring skills training, students from control group participated in a placebo treatment. The placebo treatment consisted of the presentation of short stories and slides in which contents were
completely unrelated to tutoring-skills training. The number and duration of the placebo sessions were the same as those in the training group.

Quantitative and qualitative measures of the effectiveness of tutoring training were combined to achieve triangulation. Quantitative measures were reading test scores, observer's ratings on 16 collaborative skills, and teachers' end-of-year ratings of individual student's group skills. Among the 30 interrater correlations, 24 were above .90, 5 were between .80 and .90, 1 was between .70 and .80. Across all the process, 60 observations for the training groups and 76 for the control groups were conducted. Within each observation the number of training or control groups varied from 2 to 4. Qualitative data were collected from field notes and interviews of teachers. The narratives and teacher interview transcripts were analyzed and reported using inductive analysis.

For each observation, an analysis of variance (ANOVA) was performed to determine if the training group mean differed from the control group mean. To reduce the chances of a Type I error across the eight tests, a .01 significance level was used. A MANOVA was conducted on the 16 items for each observation. A significance of .01 was used to reduce the overall Type I error rate. Follow-up univariate ANOVAs were applied to compare grade levels. A 2 (Treatment) x 3 (Reading Level: below average, average, and above average) MANOVA was used to examine the possible influences of reading skills. A repeated-measure of ANOVA was conducted to compare the performance of the training and control groups on the five reading comprehension test scores that represented final grades for respective six-week periods.

Both quantitative and qualitative analyses from Nath and Ross (2001)'s research suggested that peer-tutoring training generally but not consistently enhanced student
communication and collaborative skills. Students from the training group exhibited more communication and collaborative skills than students from the control group. Specifically, students who received training were more likely to disagree constructively, ask questions of one another, explain the process used in finding an answer, listen, provide one another with immediate corrective feedback, prompt one another, respond to questions asked by teammates, show respect to one another, stay on task, and accept help from their teammates. Nath and Ross (2001) also found that unless tutoring skills training was reinforced on a continual basis, students tended to revert to typical ways of interacting in group settings.

Another finding was that the grade 1-3 students performed better in cooperative groupings than did the grade 4-6 students. In addition to positive behavior, younger students outperformed older students in the following areas: showing respect for one another, using quiet voices, staying on task, and accepting help from their teammates. While students receiving tutoring-skills training outperformed control students in collaborative and communication skills, their reading achievement scores were not found to be significantly different.

One of the limitations of this research was that students from the same classroom were assigned into either control or training group. To reduce contamination of research, future research might assign entire classes to the control or training groups.

Another limitation of this research was the participating teachers’ different attitudes toward cooperative learning. According to Nath and Ross (2001), the upper-grade teachers (grades 4 to 6) did not seem to fully buy into cooperative learning and
were clearly less supportive than the lower-grade teachers. This might explain the result why the upper-grade students did not perform as well as the lower-grade students.

The effects of peer-tutoring training in a cooperative learning environment cannot be fully realized unless teachers buy into the concept of cooperative learning and implement the methodology effectively. Every effort should be made to ensure that teachers accept, understand, integrate, and practice cooperative learning in the classroom.

Summary of Research Related to CWPT and Social Competence of Children with Diverse Needs

Peer tutoring has been supported by various studies as a successful strategy for promoting students' social interactions as well as increasing their academic achievements (e.g., Kamps et al., 1999; Maheady & Sainato, 1985). Peer tutoring was also used to augment cooperative learning (Nath & Ross, 2001).

Both studies from Maheady and Sainato (1985) and Nath and Ross (2001) conducted peer tutoring with only the target students in a classroom, rather than a whole class level. Maheady and Sainato (1985) used a single subject withdrawal design (ABAB) to assess the effects of peer tutoring by a high status student on a low status peer. Only the target students in each classroom were applied with peer tutoring during the intervention phase. In Nath and Ross's study (2001), they examined the effects of peer-tutoring on elementary school student communication and collaboration skills when used in conjunction with cooperative learning. Again the peer tutoring training was only applied to the students who were assigned in the training group. Students from the control group in the same classroom did not receive peer tutoring training.
Different from the above two studies, Kamps and colleagues (1999) conducted the peer tutoring in the whole class level (Classwide Peer Tutoring) where students were paired with a partner in reciprocal tutor/tutee roles in each of the participating classrooms. However, the improved social behaviors cannot be specifically tied to CWPT or other two treatments (classroom behavior management and social skills training) because multilevel interventions were used in their study. Nevertheless, all the above studies indicate a relationship between positive social behaviors and peer tutoring training and other peer-mediated strategies.

The subjects involved in these studies were children with diverse needs. They included children at risk or children having emotional and behavioral disorders (EBD) (Kamps et al., 1999), children from minority and low-income families (Nath & Ross, 2001), and children who were low status at academic performance (Maheady & Saintato, 1985). The grade levels ranged from first to seventh grade. No studies mentioned above were specifically conducted in children with LEP for their social competence, specifically primary age children (6-8 years old) with LEP.

Review of Literature Summary

Vygotsky’s sociocultural theory values the importance of the social and cultural context on children’s thinking. Vygotsky saw the development of thinking as a shared process within a social context. Children are capable of far more competent performance when they have assistance from adults or peers in their zone of proximal development. Studies on social competence have suggested the critical role of social interaction of young children through social play. The sequence of social play was identified from
simple to complex social interaction that indicates the level of social competence (Howes & Matheson, 1992; Parten, 1932). In early childhood education, social play from infancy to primary age children has been examined in both general and inclusive settings.

Early childhood education and care is provided in caring, responsive social contexts where adult-child and child-child interactions and opportunities for play and exploration promote children's social and intellectual development. The educational implication of their studies lies in that social play skills of children with and without disabilities are not only critical for young children in inclusive settings, but also important for general and special education early childhood professionals to prepare developmentally and individually appropriate programs for all children.

From the perspective of family system theory, parent-child relationships were positively related to children's social competence (Lindsey & Mize, 2001). Thus family also plays a critical role in educating the child in all developmental areas.

As most of the literature demonstrates, peer tutoring or CWPT has proven to be effective for increasing academic achievements and improving the classroom behaviors of students with different needs. However, empirical data in the research literature on children with LEP or English-language learners were very limited. Reviews on effective instructions for English-language learners mostly focus on English-language development involving all types of instruction that promote the development of either oral or written English-language skills and abilities (August, 1987; Gersten & Baker, 2000b) or academic achievements such as spelling or math (Greenwood et al., 2001).
What was neglected from previous studies is the social behaviors of children with LEP and how their social development affects other developmental areas.

Although social interactions in peer tutoring were examined in the studies by Maheady and Sainato (1985) and Nath and Ross (2001), peer tutoring was applied with only the target students in a classroom, rather than a whole class level. Kamps and colleagues (1999) conducted the peer tutoring in the whole class level (Classwide Peer Tutoring) where students were paired with a partner in reciprocal tutor/tutee roles in each of the participating classrooms. However, the improved social behaviors cannot be specifically tied to CWPT or other two treatments (classroom behavior management and social skills training) because multilevel interventions were used in their study. No studies mentioned above were specifically conducted in children with LEP for their social competence, specifically primary age children (6-8 years old) with LEP.

According to Fuchs, Fuchs, Benz, Phillips, and Hamlett (1994), relatively young children (early elementary school age) can be trained to enhance their interactional style in peer-mediated instruction. Most previous studies on CWPT were either conducted to improve students’ academic performance, or their social behaviors, but with CWPT combined with other interventions. Furthermore, most of the peer tutoring training only involved the target students rather than the whole class. There is a need to produce information about the specific effects of CWPT on social behaviors of children with diverse needs. In addition, children always behave best in the natural setting, that is, their regular classroom. Children also behave most naturally when interventions occur in the whole class level, rather than being separated into groups with different
treatments. Besides, children receiving different treatments in the same setting might be influenced by each other, which could affect the treatment effectiveness.

Based on the review of literature, this dissertation study contributed to the body of literature by adding to the limited empirical studies on children with LEP, especially social behaviors of children with LEP, which has received very little attention in the research area. Additionally, for the first time in the literature, this study was comparing the different effectiveness of CWPT on children with LEP and non-LEP in terms of social behaviors. The results would provide professional statistical and practical significance in effective instruction for young children with diverse needs.
CHAPTER 3

METHODOLOGY

Overview

Classwide Peer Tutoring (CWPT) is a strategy that involves reciprocal interaction between tutor-tutee pairs in the whole class level. By asking and answering questions to each other, the tutor and the tutee are not only learning the assigned academic material, but also learning social skills such as turn-taking and being patient by modeling and imitating during the process.

This study was designed to examine the effects of CWPT on the social interactions of students with LEP and children who are native English speakers (non-LEP) in two general education classrooms, which has received little attention in previous studies. The hypothesis was that CWPT would be effective in increasing the social interactions of children with LEP and non-LEP in the general education setting. Findings would enable classroom teachers to generalize CWPT to different settings and different students with special needs.

This study examined the social interactions of seven children with LEP from one second-grade classroom during baseline condition (when CWPT was not used) and intervention condition (after CWPT was applied). Among the 14 students, only one child with non-LEP was present in this classroom. The same procedure of the experimental design using CWPT was replicated to another second-grade classroom where children
with non-LEP attended. All the 14 students in this classroom were children with non-LEP. Seven children from this classroom were randomly selected as the second group subjects (Class 2) to be compared with the seven children from the first group (Class 1). The CWPT procedure involved tutor-tutee pairs working together on a classwide basis during math or spelling instruction.

The two groups of children with LEP and with non-LEP were compared in social interaction behaviors by using Social Interaction Observation System (SIOS, see Appendix B). All sessions with and without CWPT in the two classrooms were videotaped. Pre- and post-measurements of social interactions were quantified and analyzed.

What follows next are the research questions with the researcher's prediction on each question. Then, the participating children and teachers, the setting, the interrater reliability process are described. After that, the materials, the dependent variable, and the instrumentation are presented. Following is the training process. Next are information of the design and procedure, data collection, and social validity, followed by the discussion of treatment of data. Finally, the internal validity was discussed.

Research Questions

This study focused on five questions:

1. Does CWPT have a positive effect on social interactions of students with LEP and with non-LEP as measured by Social Interaction Observation System (SIOS) in each of the two classrooms? It was predicted that CWPT would increase positive social interactions of children with LEP and children with non-LEP.
2. Does CWPT have a different effect on the social behaviors of children with LEP and children with non-LEP as measured by Social Interaction Observation System in the two classrooms? It was predicted that CWPT would have similar effect on both groups of children and therefore there would be no significant difference between the two groups.

3. Is there a difference in active and passive social behaviors between boys and girls when using CWPT process in LEP and non-LEP groups, respectively, as measured by Social Interaction Observation System? It was predicted there would be no significant differences between the boys and girls in active and passive behaviors in both groups.

4. Do strategies for selecting tutor-tutee pairings influence the effectiveness of CWPT? It was predicted that strategies for selecting tutor-tutee pairings would influence the effectiveness of CWPT. Therefore, both random pairing and skill pairing were used for selecting tutor-tutee pairings.

5. Do children and teachers from the LEP and non-LEP classrooms have similar perceptions about the use of CWPT as measured by Teacher/Student Satisfaction Questionnaire? It was predicted teachers and students from the two classrooms would perceive similarly on the use of CWPT.

Subjects

Subjects in this study were selected from an elementary school located in an urban city of Nevada. Children seven to eight years of age in two second-grade classrooms were selected to participate in the study. There were 14 students in each of the two classrooms. Seven children from each classroom (4 girls, 3 boys) were selected as the subjects, with a total of 14 subjects in this study. Purposeful selection of sampling
was used in order to reach an equal number of genders in two classrooms. Only the researcher knew who were the subjects. The teacher and other children involved in the class were kept from this information to reduce the research effect.

Only children whose parents signed an informed consent agreement (See Appendix C) were involved in this study. All the seven subjects from Class 1 were children with LEP; whereas all the seven subjects from Class 2 were children with non-LEP (See Table 1). Data collection and analysis only focused on the 14 subjects from the two classrooms, although all children in the classrooms were involved in the videotaping and CWPT process. All the 28 children involved in this study received parental consent.

*Students with LEP*

Ninety-three percent of children in Class 1 (13 out of 14) were students with LEP; and 100% of children in Class 2 (13 with non-LEP and one bilingual) were children with non-LEP. Students with LEP in this study were all qualified and enrolled in the English-language Learner (ELL) program. The criteria for the ELL students were: 1). Primary language is not English; 2). Proficiency in English is below the average proficiency of pupils (more than 2 SD below the mean in standardized tests) at the same age or grade level whose primary language is English; and 3). Probability of success in a classroom in which courses of study are taught only in English is impaired because of his limited proficiency in English (added to NAC by Board of Education by R063-97, eff. 12-10-97). At the selected elementary school for this study, over 50% of children are English language learners, as assessed and identified by the School District ELL programs.
Table 1  Demographics of Subjects with LEP and with Non-LEP

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Class 1 (LEP)</th>
<th>Class 2 (Non-LEP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Female</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>7.8</td>
<td>7.7</td>
</tr>
<tr>
<td>Range</td>
<td>7-8</td>
<td>7-8</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>African American</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Hispanic</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Biracial</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Disability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Language/Speech</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Students with non-LEP

Students with non-LEP were children whose primary language is English and who did not qualify for the ELL program. Social interaction behaviors of students with non-LEP were also examined and compared with social interaction behaviors of children with LEP.
Pretest before CWPT was implemented was taken to assess the prerequisite skills of the subjects in the classroom setting. Prerequisite skills include basic skills at the appropriate level of math (e.g., counting), reading (e.g., letter recognition), or spelling required by the curriculum. If any subject gained a score below 20% correct at the age-appropriate level in each of the two classrooms, a one-on-one activity was applied to help the subject reach the criteria (20% correct at pretest).

Pairs of students with LEP and Pairs of students with non-LEP

Seven pairs of students with LEP in Class 1 were established by random selection or skill selection, with an alternate schedule every day. Each pair could be both the subjects or with one subject and one participant in the class. Although videotaping was taken at the same time for all children, data collection and analysis focused on one subject at a time. For example, if one child in the pair was the subject, data analysis focused on this child only. If both children in the pair were subjects, data were analyzed on one child at a time by repeated observations of the videotape rather than observing both subjects at the same time. In Class 2, students with non-LEP were paired in the same way as in Class 1.

Participating Teachers

The two classroom teachers in Class 1 and Class 2 participated in this study (See Table 2). Teacher A from Class 1 had two years of teaching experiences in an elementary school, with one year experience with first grade and one year with second grade. Teacher B from Class 2 also had two years of teaching experiences, with one year with fifth grade and one year with second grade. Both teachers have a bachelor’s degree
in elementary education. Teacher B from Class 2 (children with LEP) also has a certificate in teaching ELL students. Each teacher signed a consent form to participate in this study (See Appendix D).

Table 2 Demographics of the Classroom Teachers

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Teacher A</th>
<th>Teacher B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Degree</td>
<td>Bachelor’s Degree</td>
<td>Bachelor’s Degree</td>
</tr>
<tr>
<td></td>
<td>in Elementary</td>
<td>in Elementary</td>
</tr>
<tr>
<td>Age</td>
<td>24</td>
<td>26</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Hispanic</td>
<td>Caucasian</td>
</tr>
</tbody>
</table>

Interrater Observers

The researcher of this study was the first observer who was working on her dissertation in early childhood special education. The second observer was a part time instructor in the department of special education from the university. The second observer had an earned doctoral degree in special education and an educational specialist degree in school psychology. She also had experiences in teaching with young
children with and without disabilities. The second observer assisted in viewing and rating 25% of the videos and coding the children's behaviors using the SIOS (Kreimeyer, Antia, Coyner, Eldredge, & Gupta, 1991).

Settings and Arrangements

The Elementary School

The elementary school where this study was conducted was a year round school with a population of 1178 students. The school was located in an urban area of Nevada. This school was designated as both a high minority and high poverty school. The school had 40 primary teachers (K-3) and 14 intermediate (4-5) teachers. Fifty-five percent of the classroom teachers at this school had taught for less than five years.

The mission of the school was to educate students toward worldwide communication and understanding among people and nations for peace in our world. The majority of the students in this school were Hispanic (61% of the total student population) (See Table 3). Children with LEP or ELL students took 51% of school population (See Table 3).

The Classrooms

This study was conducted in two general education classrooms from the above mentioned school. Both classrooms were second grade with children 7-8 years of age. Class 1 included 13 children with LEP and one child who is native English speaker (non-LEP). Class 2 included 13 children with non-LEP and one child who is bilingual (English and Spanish). Adults involved in the classroom included the classroom teacher, a practicum student, a student worker, administrators, the researcher, and a Title I
reading teacher. Both the classrooms were observed and videotaped during baseline and intervention phases, but only the selected subjects whose parents signed a consent form were included in the analysis.

Table 3  Demographics of the school

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Total School Population (1,178)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>17%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>61%</td>
</tr>
<tr>
<td>Black</td>
<td>17%</td>
</tr>
<tr>
<td>Asian</td>
<td>4%</td>
</tr>
<tr>
<td>Native American</td>
<td>.8%</td>
</tr>
<tr>
<td>Special Population</td>
<td></td>
</tr>
<tr>
<td>Regular</td>
<td>43%</td>
</tr>
<tr>
<td>Special Education</td>
<td>5%</td>
</tr>
<tr>
<td>G.A.T.E.</td>
<td>1%</td>
</tr>
<tr>
<td>ELL</td>
<td>51%</td>
</tr>
<tr>
<td>Economic Status</td>
<td></td>
</tr>
<tr>
<td>Low Income</td>
<td>85%</td>
</tr>
<tr>
<td>Others</td>
<td>15%</td>
</tr>
</tbody>
</table>
Target Behavior (Dependent variable)

The target behavior or the dependent variable in this study was the frequency of social interactions exhibited by the subjects during CWPT and non-CWPT process. The whole research process was videotaped and the coded number of social interactions, operationally defined as 15 behaviors by Kreimeyer and colleagues (1991) (See Appendix B), was recorded. The frequency of social interactions before CWPT applied was also videotaped and used as the baseline data.

Materials and Equipment

Materials and equipment needed for this study included Weekly Tutoring List (1 per pair), Tutoring Worksheet, Tutoring Point Sheet, Help Sign (1 per pair), and Timer (1) (See Appendix H). These materials were age and developmentally appropriate because they were modified from the CWPT manual developed by Greenwood, Delquadri, and Carter (1997) to meet the level of the class according to the teacher’s weekly/monthly lesson plans. Learning materials used by each pair were academic items related to the instructional content in the classroom, for example, a list of sight words, a set of counting cards, pictures of animals beginning with the same letter, or upper-lower letter matching cards. The correct answer was indicated on the back of each card or on the tutoring worksheet. This allowed children to tutor responses that they could not yet independently make themselves.
Instrumentation

**Social Interaction Observation System**

Permission was granted to use the Social Interaction Observation System (SIOS) (Kreimeyer et al., 1991) in this study (See Appendix A). The SIOS (see Appendix B) was designed to discriminate 15 social interaction behaviors that might occur during social interactions (e.g., positive peer interactions, negative behaviors directed to peer, nonplay behavior, solitary play, parallel play, cooperative play, positive linguistic interaction, peer initiations of interaction, child responds positively to peer initiation, child responds negatively to peer initiation, no response to peer initiation, child initiation of interaction, peer responds positively to child’s initiation, peer responds negatively to child’s initiation, or peer makes no response to child’s initiation). These behaviors were divided into seven positive behaviors, five passive behaviors, and three negative behaviors. The two active behaviors also belong to the positive behavior category.

Although the SIOS was initially designed to use for hearing-impaired children, the instrument was used to observe children during free play periods when teacher direction is minimal. This is consistent with the design and purpose of the present study. After talking to one of the authors of the SIOS, the researcher was informed that it is appropriate to use the SIOS for children from preschool to primary age (three to eight years old), especially for the observation of children during free play time.

**Consumer Satisfaction Questionnaire**

Teacher Consumer Satisfaction Questionnaire and Student Consumer Satisfaction Questionnaire modified from the questionnaires developed by DuPaul and colleagues.

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(1998) were used to compare the teachers and students' perceptions on the use of CWPT in the two classrooms. The Teacher Consumer Satisfaction Questionnaire included 10-item Likert-type survey and the Student Consumer Satisfaction consisted of 5 items with Yes or No choices (See Appendix F).

Training

Teachers and children from the two classrooms received training sessions regarding the process of CWPT after the baseline data collection and prior to the implementation of CWPT. The training process included four sessions after the first week of baseline. The interrater observers were trained to use the Social Interaction Observation System (Kreimeyer et al., 1991) and criteria were reached on the operational definitions of the 15 social interaction behaviors.

Session One. Each of the two classroom teachers received a copy of the CWPT Process (see Appendix H) prior to the implementation of CWPT in the classroom. The CWPT Process provided an overview of CWPT, including how to schedule the sessions, a breakdown of the time involved, what kinds of content materials to use, and how to pair tutors and assign them to teams. It also included how to give pretests and posttests for each subject area tutored. The researcher met with each teacher about 30 minutes discussing the concepts and explaining the procedure of CWPT.

Session Two. In Training Session Two, the teacher described and modeled peer tutoring procedures to the whole class. Then he/she had the class practice tutoring for about 15 minutes. Each child had an opportunity to be a tutor and tutee during Session Two.
Session Three. During Session Three, children in each classroom were assigned randomly as tutor and tutee working on a list of 15 spelling words. Each child was also assigned by the teacher to one of the two teams in the whole class level. This session lasted about 20 minutes.

Session Four. Children were reassigned by the teacher with different partners as the previous session. They also worked on math (addition with base-ten blocks) instead of spelling words using CWPT procedure. This session also lasted for 20 minutes. Children who were absent the previous day were trained in both spelling and math areas.

Interrater Observer

Two observers (A and B) were involved in this study. Observer A was the researcher and the primary observer. Observer B was a part time instructor in the department of special education.

First, observer B read silently the instructions for the implementation of the SIOS (Kreimeyer et al., 1991). The instructions were discussed between Observers A and B. Each of the 15-observable social behaviors was defined. The use of the SIOS was demonstrated using a practice videotape of a group of children working together during CWPT process and without CWPT process.

Then, using a practice videotape containing four segments of students with LEP in Class 1 during CWPT and without CWPT process, observer B practiced scoring using the SIOS. After each videotape segment, questions were answered regarding the SIOS procedures.

Next, Observer B and Observer A independently used the SIOS to rate the social interaction behaviors of children on a second practice videotape. This videotape was of
four children with LEP in Class 1 during CWPT and non-CWPT conditions, and four children with non-LEP during CWPT and non-CWPT conditions. The two observers reviewed and scored two out of the four children in each class. After viewing the tapes, the Observers A and B compared their observations. Any disagreements regarding the rating of behaviors were discussed and resolved through consensus between the two observers.

Observer B then practiced rating the children's behaviors until 100% agreement with Observer A was achieved using the practice videotape. Eighty-seven percent of agreement was achieved using the SIOS practice tape the first time. After discussing with the disagreement, 100% agreement was reached after viewing the practice tape the second time (See Table 4).

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Interrater Reliability on Training Practice Tape</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>Observer A</td>
</tr>
<tr>
<td>SIOS Practice Tape</td>
<td>120/240</td>
</tr>
<tr>
<td>(First time)</td>
<td></td>
</tr>
<tr>
<td>SIOS Practice Tape</td>
<td>120/240</td>
</tr>
<tr>
<td>(Second Time)</td>
<td></td>
</tr>
</tbody>
</table>
Design and Procedures

Experimental Design

A single subject withdrawal design (ABA) (Barlow & Hersen, 1987) was applied to Class 1 and Class 2, respectively. Phase A was the baseline condition and B was intervention (CWPT) condition. In order to establish a strong functional relationship between the change of behavior and the intervention, Class 1 had been applied five phases: ABABA, with a total of five weeks of data collection. Class 2 had three phases: ABA, with a total of three weeks of data collection. In addition to the single subject withdrawal design within each group, group comparison design was also applied to compare children with LEP (Class 1) and children with non-LEP (Class 2) between the two classes. Three weeks from Class 1 (ABA) were compared with the equal phase of Class 2 (ABA), with A as the baseline or pretest, B as the intervention or posttest, and the second A as back to the baseline or the follow-up.

Phase One

Parental consent in both English and Spanish (see Appendix C) was requested for all children in the two classrooms. Only children with a signed parental form were selected as the subjects in this study. Because the subjects were 7 to 8 years of age, a child assent form in English and Spanish was completed by each child (see Appendix E), as required by the university Office for the Protection of Research Subjects (OPRS). A hundred percent of parental consent and child assent were achieved in both Classrooms. Approval letters were also obtained from the Center for Educational Research and Planning (CERP), the Office for the Protection of Research Subjects (OPRS), the principal of the participated school, and the school district. At the same time, permission

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was given by the authors of CWPT manual and the Social Interaction Observation System, respectively.

Phase Two

The two teachers from both classrooms were trained with CWPT procedures immediately after the baseline data collection. CWPT involves the whole class level and the teacher was the major facilitator in this process. Observational data was not collected on the classroom teacher although videotaping might include the teacher because CWPT was applied during the regular class time. All activities, videotaping and observations of the children took place during the mornings between 9 and 12 in the teacher’s workday at the school. Participation was voluntary and only those teachers who signed an informed consent form were considered for participation in this study (see Appendix D). Both teachers signed for adult informed consent form indicating their willingness to participate in this study.

Phase Three

Phase three was the actual data collection period. Children’s social interaction behaviors from both classes measured by SIOS were collected during free play time. Data were collected from the seven children in Class 1 and seven children in Class 2. After the first week’s baseline data collection, a week of training sessions followed. Beginning in the third week, intervention (CWPT) procedure was applied to each of the classroom. Children were arranged by pairs in both classrooms. There were seven pairs in each classroom. Data collection took place every morning Monday through Friday. On the days when the number of attendance was odd due to students’ absence, three students worked together instead of a pair. Each pair of students sat next to each other and started
working as a tutor and a tutee, as practiced in training sessions. The teacher used CWPT strategy to instruct and practice spelling or math.

During CWPT sessions, procedures described by Greenwood et al. (1997) were used. The tutor and the tutee were seated at separate, adjacent desks and the tutor were provided with a script of academic material (e.g., 10 math problems or a list of 12-15 spelling words) related to the instructional content. Items were dictated one at a time from the script, with the tutee responding orally to the presented item. Two points were awarded by the tutor for each correct response the first time. If the tutee was wrong the first time, the tutor would provide the correct answer and the tutee would attempt to replicate the correct response three times to earn 1 point. No points were awarded if the student was unable to answer correctly three times. The item list would be presented as many times as possible for 10 minutes. Then the two students switched roles, with the original tutor now receiving instruction from the former tutee for an additional 10 minutes.

**Phase Four**

After the intervention phase for a week, CWPT was withdrawn and both classes back to baseline condition, respectively. Any differences of the social interaction behaviors of children with LEP and children with non-LEP during free play time in baseline and CWPT process would be observed and analyzed.

**Phase Five**

All videotapes of CWPT process and non-CWPT procedure were viewed and analyzed. The social interaction behaviors of children were coded using the SIOS by observer A. Observer B reviewed 25% of the tapes and code the children’s social
behaviors using the SIOS to establish interrater reliability. Although only the seven
children who were selected as the subjects were viewed and analyzed during CWPT and
non-CWPT process, all children in each of the two classrooms were participating in the
CWPT procedure and were videotaped.

Data Collection

The social interactions of children with LEP and children with non-LEP during
free play time in Class 1 and Class 2 were videotaped and observed in baseline and
intervention phases of the study. Each class was videotaped 5 times per week, 25-30
minutes per time. The data collection period for Class 1 was 5 weeks and data collection
for Class 2 was three weeks. Therefore, each subject in Class 1 had a total of 625-750
minutes of videotaped observation time by participating in this study. Each subject in
Class 2 had a total of 375-450 minutes of videotaped observation time.

Social Interaction Observation System

Social Interaction Observation Systems (SIOS) (Kreimeyer et al., 1991) was used
to code the occurrence of the 15 social interaction behaviors (see Appendix B). During
baseline, data collection was taken in the free play time immediately after the 20-minute
teacher instruction on a certain academic content (spelling or math). During intervention,
data collection also took place in free play time, but immediately after the 20-minute
CWPT procedure instead of teacher instruction. After the first minute of each 10-minute
free play session following the 20-minute teacher instruction or CWPT procedure, each
subject was rated over four, one-minute intervals. For each one-minute interval, the social
behaviors of the subject were marked as occurred (+) or not occurred (0). This process was repeated for the second subject in the class during a second viewing of the tape.

The process was repeated seven times for all seven subjects in each of the two classrooms. The occurrence of each of the 15 behaviors was quantified and analyzed for each subject in each class to ascertain the number of times each social behavior was exhibited in the two groups by observer A. Observer B then viewed and rated 25% of the sessions independently to establish interrater reliability on the rating of behaviors.

**Interrater Reliability**

Interrater reliability was calculated by comparing the ratings of Observer A to Observer B on 25% of the videotaped CWPT and non-CWPT sessions. Interrater reliability on the SIOS was determined by \[
\frac{\text{agreements}}{\text{agreements} + \text{disagreements}} \times 100 = \text{percent of agreement.}\]

Qualitative data about teachers and students' verbal comments on the use of CWPT in the videotapes were also viewed and transcribed by both Observers.

**Academic Scores**

Permanent product recording such as the points earned during the peer tutoring process was collected by the researcher for the academic performance of the subjects. Weekly pre- and post-tests on academics (spelling and math) were prepared and given out by the teacher every week to all children in the class to examine the positive effect of CWPT on academic achievement, although academic performance was not the focus of this study.

A table with academic mean points of all the students from pre- and post-tests was developed by the teacher to compare with participants' academic performance.
before and after peer tutoring process. Because the focus of the current study was on the social interaction behaviors, academic record was not used to compare the children in both classes. However, the researcher suggested that the teacher kept a record of students’ academic achievement during the whole research period in order to be consistent with her/his goals and objectives in the lesson plan when using CWPT.

Social Validity

At the end of the study in each class, the teacher completed a 10-item survey to examine her/his opinions about the social and academic benefits of CWPT (See Appendix F). Each item was answered on a 3-point Likert-type scale ranging from not true to very true. The teacher was also asked to evaluate the mechanical aspects of CWPT (e.g., time consuming, or ease of implementation).

To examine the students’ satisfaction, a 5-item survey was administered at the end of the study in each class (See Appendix F). These five true-false items assessed the degree to which they enjoyed peer tutoring and believed that it was helpful in peer interactions. The students were also asked about their desire to participate in the CWPT in the future, and how they felt about the CWPT procedure.

In Class 1, the teacher read each item in both English and Spanish to make sure every child understood the meaning of each question. In Class 2 the teacher only read each item in English. Any questions about the survey was explained and clarified before children completed the survey. All children in each class were asked to complete the survey although only the answers from the selected subjects were used for the data analysis.
Social validity data were collected at the conclusion of their involvement in the study. The data were reported in a table with score of each item and a brief description of overall perception.

Treatment of Data

Specifically, data from the SIOS during baseline and intervention were analyzed to answer the following answers:

Research Question One: Does CWPT have a positive effect on social interactions of students with LEP and with non-LEP as measured by Social Interaction Observation System during baseline and intervention phases in each of the two classrooms?

Analysis: A significant difference between baseline and intervention phases in Class 1 and Class 2 would indicate the effectiveness of CWPT on social interactions for both groups: children with LEP and with non-LEP. In order to ascertain significant differences of the social interactions between baseline and intervention conditions in both groups, a repeated measure of two-way ANOVA was conducted to compare the individual positive and negative social behaviors of children in both groups during baseline and intervention conditions using the data from SIOS. Because the repeated measure of ANOVA (on 15 dependent variables) would increase the chance of Type 1 error, an alpha level of .005 was set instead of the normal .05 level. In addition, data from the single subject design within each group (ABABA in Class 1 and ABA in Class 2) for each subject would further indicate the effectiveness of CWPT.
Research Question Two: Does CWPT have a different effect on the social behaviors of children with LEP and children with non-LEP as measured by Social Interaction Observation System in the two classrooms?

Analysis: In order to ascertain a significant difference between the social interaction behaviors of children with LEP in Class 1 and children with non-LEP in Class 2, a repeated measure of two-way ANOVA was conducted to compare the individual positive and negative social behaviors of children from the two intervention groups using the data form the SIOS. An alpha level of .005 was set.

Research Question Three: Is there a difference in active and passive social behaviors between boys and girls when using CWPT process in LEP and non-LEP groups, respectively, as measured by Social Interaction Observation System?

Analysis: In order to ascertain a significant difference between the social interaction behaviors of boys and girls in the two intervention groups, a repeated measure of two-way ANOVA was conducted to compare the individual active and passive social behaviors of boys and girls in the two groups using the data from SIOS. An alpha level of .005 was set.

Research Question Four: Do strategies for selecting tutor-tutee pairings influence the effectiveness of CWPT?

Analysis: Two strategies for selecting tutor-tutee pairings were used in this study: random pairing and skill pairing. During each intervention phase, the two strategies were applied alternately from one session to the next in both groups. By comparing the data points in each intervention within each single subject from both groups, any significant
differences between data points would indicate the different influence of strategies for selecting tutor-tutee pairs.

Research Question Five: Do children and teachers from the LEP and non-LEP classrooms have similar perceptions about the use of CWPT as measured by Teacher/Student Satisfaction Questionnaire?

Analysis: Scores from the Teacher/Student Satisfaction Questionnaire and qualitative data such as comments from the teacher and students recorded in the videotapes would indicate the perceptions of teachers and students from the two classes.

Internal Validity

In intervention with young children, maturation was a major factor threatening the internal validity. If subjects at different age levels (e.g., 5 to 8 years of age) could be selected to participate in the study the effectiveness in all subjects would minimize the problem of maturation.

Attrition could be another factor, because the intervention was applied five times a week for five weeks in Class 1 and three weeks in Class 2. To control this variable, different instructional materials were alternately used in each session. For example, in session one spelling was used during CWPT. Then, in session two math problems were applied, instead of math or spelling every day for the whole week. Although using rewards or reinforcers could reduce the effect of attrition, the reinforcer itself could be another influencing variable because of its possible interaction with the treatment. Therefore, no external rewards or reinforcers were used in this study.
The testing materials of different academic content could influence the internal validity, too. For example, an interesting or exciting reading material might lead to more social interaction between the peers than a set of math problems. To control this variable, the peer tutoring procedure only used spelling and math problems in each intervention session.
RESULTS

The purpose of this study was to examine the effectiveness of Classwide Peer Tutoring (CWPT) on the social interaction behaviors of children with Limited English Proficiency (LEP) and children who are native English speakers. Data collections were conducted in two second-grade classrooms from an elementary school. Seven children (four girls, three boys) in each of two classrooms were selected as the subjects in this study. All children in both classrooms were involved in the CWPT and videotaping procedures, although only the selected subjects were viewed for data analysis.

The social interaction behaviors of children in both classrooms were videotaped during baseline and intervention phases. Class 1 (children with LEP) received a total of five weeks of videotaped observation and one week of training on CWPT procedures. Class 2 (children with non-LEP) received three weeks of videotaped observation and one week of training on CWPT procedures.

The videotaped social interaction behaviors of children were coded and recorded by using the Social Interaction Observation System (SIOS) (Kreimyer et al., 1991). Because of the factors such as holidays, track breaks, or student absences, data analyses were based on three sessions each week, although some weeks included five videotaped sessions. Therefore, each subject in Class 1 had 15 videotaped observation sessions for data analyses and Class 2 had 9 sessions for data analyses.
The teachers' and students' perceptions on the use of CWPT were measured by using the Consumer Satisfaction Questionnaire. Students' verbal comments from the videotapes were also viewed by the two observers.

Interrater Reliability

The social interaction behaviors of children with LEP and non-LEP in two classrooms were videotaped by the researcher in the two classrooms. Then, the videotapes were observed and coded by two observers. Reliability checks were conducted on the scores of children's social behaviors using Social Interaction Observation System (SIOS).

First, Observer A viewed all the videotapes and rated the social interaction behaviors of children from the two groups by using the SIOS. Then, Observer B viewed 25% (6 out of 24 tapes) of the videotapes and rated children's social behavior using SIOS. Interrater reliability on the SIOS was determined by \[
\frac{\text{agreements}}{\text{agreements} + \text{disagreements}} \times 100 = \text{percent of agreement.}
\]
Interrater agreement was 99.4% on the SIOS (See Table 5).

The qualitative data such as children's verbal statements during the CWPT procedures were observed and transcribed by Observer A. Then Observer B also watched all the segments including these qualitative data and transcribed them independently. The interrater reliability on the children's verbal statements was 100% (See Table 5).
Table 5  Interrater Reliability

<table>
<thead>
<tr>
<th>Source</th>
<th>Observer A</th>
<th>Observer B</th>
<th>Percent of Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIOS</td>
<td>2520/10080</td>
<td>2507/10080</td>
<td>2507/2520=99.4%</td>
</tr>
<tr>
<td>Verbal Comment</td>
<td>15/24</td>
<td>15/24</td>
<td>15/15=100%</td>
</tr>
</tbody>
</table>

Social Interaction Observation System

The Social Interaction Observation System developed by Kreimeyer and colleagues (1991) consists of two sections. The SIOS is an interval sampling measure to record the 15 social interaction behaviors of children from preschool to primary grade age.

The first section is to record identification information. It includes observer’s name, school name, the child name or number, and the date. It also has the choice for the number of observations, and time begins and ends. The second section consists of 15 social interaction behaviors with operational definitions and examples for each behavior.

Observers A watched all the videotaped sessions of children in both groups in the baseline and intervention phases and rated their social interaction behaviors according to the SIOS. Then Observer B watched 25% of the videotapes. The data from the SIOS were analyzed to answer the following three questions:
1) Does CWPT have a positive effect on social interaction of children with LEP and with non-LEP as measured by Social Interaction Observation System during baseline and intervention phases in each of the two classrooms?

2) Does CWPT have a different effect on the social behaviors of children with LEP and children with non-LEP as measured by Social Interaction Observation System in the two classrooms?

3) Is there a different in active and passive social behaviors between boys and girls when using CWPT process in LEP and non-LEP groups, respectively, as measured by Social Interaction Observation System?

The researcher predicted that CWPT would increase positive social interactions of children with LEP from Class 1 and children with non-LEP from Class 2. The researcher also predicted that CWPT would have similar effect on both groups of children and therefore there would be no significant difference between the two groups. Boys and girls were predicted not significantly different in active and passive behaviors in both groups.

Among the 15 social interaction behaviors on SIOS, seven behaviors are considered positive, five behaviors were considered passive, and three were viewed as negative. Positive social interaction behaviors include child engages in positive interaction with peers, child engages in associative and/or cooperative play, child engages in positive linguistic interaction, peer(s) initiate interaction towards child, child responds positively to peer initiation, child initiates interaction towards peers, and peer(s) respond positively to child’s initiation.
Negative social interaction behaviors include child directs negatively behaviors to peer(s), child responds negatively to peer initiation, and peer(s) respond negatively to child’s initiation. Passive behaviors include child engages in nonplay behavior, child engages in solitary play, child engages in parallel play, child makes no response to peer initiation, and peers make no response to child’s initiation. Active social behaviors involve child or peer’s initiation in the interaction, which also belong to positive social interaction behaviors.

Repeated measures of two-way ANOVA were used to analyze SIOS data to identify whether there was a significant difference in children’s social interaction after CWPT was implemented in both groups. Significant difference between the intervention phase and baseline phase would indicate the main effect of CWPT. If the significant difference was detected in both groups after CWPT was implemented, it would add to the confidence level about the effectiveness of the intervention. Because the repeated measures of ANOVA were used, the chances of making Type I error were increased. Therefore, the $p$ value was set at .005 for the analyses on the SIOS data.

To determine whether the intervention (CWPT) was effective on both groups and whether there was a significant difference of the intervention between the two groups, SIOS data were analyzed using repeated measures of ANOVA. Results from the repeated measures of two-way ANOVA indicated that there was an overall significant main effect across both groups for the intervention on 8 out of the 15 social interaction behaviors, in which seven were positive behaviors and one was passive behavior. Table 6 summarized the results from tests of ANOVA.
Table 6  Summary of ANOVAs from the SIOS on Main Effects for Groups

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Source</th>
<th>$F$</th>
<th>$P$</th>
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</thead>
<tbody>
<tr>
<td>1. Positive Interactions</td>
<td>Week</td>
<td>70.974</td>
<td>.000*</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>7.194</td>
<td>.020</td>
</tr>
<tr>
<td></td>
<td>Week*Group</td>
<td>3.003</td>
<td>.069</td>
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<td>2. Negative behaviors</td>
<td>Week</td>
<td>.553</td>
<td>.582</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>4.267</td>
<td>.061</td>
</tr>
<tr>
<td></td>
<td>Week*Group</td>
<td>.553</td>
<td>.582</td>
</tr>
<tr>
<td>3. Nonplay Behaviors</td>
<td>Week</td>
<td>4.154</td>
<td>.028</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>4.267</td>
<td>.061</td>
</tr>
<tr>
<td></td>
<td>Week*Group</td>
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<td>.007</td>
</tr>
<tr>
<td>4. Solitary Play</td>
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</tr>
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<td></td>
<td>Group</td>
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</tr>
<tr>
<td></td>
<td>Week*Group</td>
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<td></td>
<td>Group</td>
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<td>.066</td>
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<td>Week*Group</td>
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<td>.162</td>
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<td>6. Associated and/or</td>
<td>Cooperative Play</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Week</td>
<td>152.076</td>
<td>.000*</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>.105</td>
<td>.752</td>
</tr>
<tr>
<td></td>
<td>Week*Group</td>
<td>.630</td>
<td>.541</td>
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<tr>
<td>7. Positive Linguistic</td>
<td>Week</td>
<td>24.227</td>
<td>.000*</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>.215</td>
<td>.651</td>
</tr>
<tr>
<td></td>
<td>Week*Group</td>
<td>1.047</td>
<td>.367</td>
</tr>
<tr>
<td>8. Peer initiates interaction</td>
<td>Week</td>
<td>10.458</td>
<td>.004*</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>.071</td>
<td>.794</td>
</tr>
<tr>
<td></td>
<td>Week*Group</td>
<td>2.136</td>
<td>.140</td>
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<tr>
<td>9. Child responds positively</td>
<td>Week</td>
<td>13.602</td>
<td>.001*</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>.155</td>
<td>.700</td>
</tr>
<tr>
<td></td>
<td>Week*Group</td>
<td>4.092</td>
<td>.030</td>
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<td>10. Child responds negatively</td>
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<tr>
<td></td>
<td>Week</td>
<td>1.839</td>
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<tr>
<td></td>
<td>Week*Group</td>
<td>2.419</td>
<td>.110</td>
</tr>
<tr>
<td>11. Child makes no response</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Week</td>
<td>2.710</td>
<td>.087</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>.136</td>
<td>.718</td>
</tr>
<tr>
<td></td>
<td>Week*Group</td>
<td>1.548</td>
<td>.233</td>
</tr>
<tr>
<td>12. Child initiates interaction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Week</td>
<td>31.421</td>
<td>.000*</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>1.910</td>
<td>.192</td>
</tr>
<tr>
<td></td>
<td>Week*Group</td>
<td>3.239</td>
<td>.057</td>
</tr>
<tr>
<td>13. Peers responds positively</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Week</td>
<td>66.561</td>
<td>.000*</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>16.953</td>
<td>.001*</td>
</tr>
<tr>
<td></td>
<td>Week*Group</td>
<td>3.271</td>
<td>.055</td>
</tr>
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</table>

Table continues
<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Source</th>
<th>$F$</th>
<th>$P$</th>
</tr>
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<tbody>
<tr>
<td>14. Peer responds negatively</td>
<td>Week</td>
<td>4.500</td>
<td>.022</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>4.500</td>
<td>.055</td>
</tr>
<tr>
<td></td>
<td>Week*Group</td>
<td>4.500</td>
<td>.022</td>
</tr>
<tr>
<td>15. Peer makes no response</td>
<td>Week</td>
<td>3.497</td>
<td>.046</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>.688</td>
<td>.423</td>
</tr>
<tr>
<td></td>
<td>Week*Group</td>
<td>5.648</td>
<td>.010</td>
</tr>
</tbody>
</table>

*Significant at the $p < .005$ level. “Week” refers to the baseline or intervention week.
However, there was no significant interaction effect between the week and group on the 15 social behaviors. This result indicates that both groups did not perform differently during baseline and intervention conditions.

The significant main effects for the intervention on both groups were identified on seven positive behaviors. These behaviors were the following dependent variables: positive interaction, \([F(2, 24) = 70.974, p = .000]\), associative and/or cooperative play, \([F(2, 24) = 152.076, p = .000]\), positive linguistic interaction, \([F(2, 24) = 24.227, p = .000]\), peer initiates interaction, \([F(2, 24) = 55.978, p = .000]\), child responds positively, \([F(2, 24) = 82.338, p = .000]\), child initiates interaction, \([F(2, 24) = 31.421, p = .000]\), and peer responds positively, \([F(2, 24) = 66.561, p = .000]\). In addition to the positive effects on positive social interaction behaviors, the intervention had showed a significant reverse effect on parallel play (passive behavior), \([F(2, 24) = 57.386, p = .000]\). This meant that during the intervention week, parallel play was substantially reduced. When the intervention was withdrawn and the groups were back to baseline condition, parallel play was increased again. The frequency of parallel play in both groups showed the similar trend during baseline and intervention conditions.

Although there were no significant differences between the two groups on most of the social interaction behaviors (14 out of 15), there was one significant difference between the two groups on one behavior in the first baseline condition. This was the behavior #13: peer responds positively, \([F(1, 12) = 16.953, p = .001]\). During the baseline before intervention was started, Class 1 (\(M = .17, SD = .068\)) had a lower mean than Class 2 (\(M = .43, SD = .18\)) on this behavior.
In order to determine whether there was a significant difference between boys and girls on the passive and active behaviors after the intervention was implemented, SIOS data were analyzed again using the repeated measures of two-way ANOVA. Table 7 summarized the results of the ANOVA tests on baseline or intervention week and gender.

The results showed that there were no differences between the boys and girls on either passive or active behaviors, indicating that the main effects of the intervention were similar on both boys and girls. The results also showed no significant differences on any of the remaining social interaction behaviors. However, there was a significant interaction effect between the week and gender on behavior # 12: child initiates interaction towards peers.

Although the main effect of the intervention on both boys and girls were not significantly different, indicating both boys and girls' social behaviors were increased during intervention, the interaction effect on this behavior showed a change of rank order between the boys and girls. This difference was indicated by the different means during baseline and intervention. During intervention phase, boys (M = .82, SD = .063) had a lower mean than the girls (M = .91, SD = .094), although both of their behavior was significantly increased from the first baseline, M = .36, SD = .19, for the boys and M = .38, SD = .21, for the girls. However, when they were back to baseline after the intervention was withdrawn, boys (M = .38, SD = .31) had a higher mean than the girls (M = .29, SD = .26).
Table 7  Summary of ANOVAs from SIOS on Main Effects for Gender

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Source</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Positive Interactions</td>
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<td>24.979</td>
<td>.000*</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
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<td>.513</td>
</tr>
<tr>
<td></td>
<td>Week*Gender</td>
<td>2.453</td>
<td>.136</td>
</tr>
<tr>
<td>2. Negative behaviors</td>
<td>Week</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Week*Gender</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>3. Nonplay Behaviors</td>
<td>Week</td>
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<td>.206</td>
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<td>Gender</td>
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<td></td>
<td>Week*Gender</td>
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<td></td>
<td>Gender</td>
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<td>.971</td>
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<td></td>
<td>Week*Gender</td>
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<th>( P )</th>
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<td>Gender</td>
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<td>Week*Gender</td>
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<td>6. Associated and/or Cooperative Play</td>
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<td></td>
<td>Gender</td>
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<tr>
<td></td>
<td>Week*Gender</td>
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<tr>
<td>7. Positive Linguistic</td>
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</tr>
<tr>
<td></td>
<td>Gender</td>
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<td>.565</td>
</tr>
<tr>
<td></td>
<td>Week*Gender</td>
<td>.956</td>
<td>.417</td>
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<tr>
<td>8. Peer initiates interaction</td>
<td>Week</td>
<td>10.458</td>
<td>.004*</td>
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<td></td>
<td>Gender</td>
<td>.196</td>
<td>.6779</td>
</tr>
<tr>
<td></td>
<td>Week*Gender</td>
<td>.111</td>
<td>.896</td>
</tr>
<tr>
<td>9. Child responds positively</td>
<td>Week</td>
<td>13.602</td>
<td>.001*</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>.011</td>
<td>.921</td>
</tr>
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<td>Week*Gender</td>
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*Significant at the $p < .005$ level. “Week” refers to the baseline or intervention week.
The comparison of means between the baseline and intervention showed significant effects of the intervention on seven positive social interaction behaviors on both groups and gender. It also showed a reserve effect on parallel play for both groups and gender, indicating an opposite direction with the intervention. The means and standard deviations for the SIOS main effects of CWPT on two groups and gender are presented in Table 8.

Single Subject Data

The single subject withdrawal design (ABA) was also used in this study and data were collected for each subject from each group. Class 1 had a total of five phases (ABABA). Class 2 started two weeks later after Class 1 with a total of three weeks (ABA) for data collection and analysis. The group comparison mentioned above was based on the three weeks (ABA) data of the two classes. Individual data were also presented next for each subject in each group. The results from the single subject data analysis would not only add to the confidence level of the findings from group comparison, but were also analyzed to answer the following research question:

4) Do strategies for selecting tutor-tutee pairings influence the effectiveness of CWPT?

Two strategies for selecting tutor-tutee pairings were used in this study: random pairing and skill pairing. During each intervention phase, the two strategies were applied alternately from one session to the next in both groups. By comparing the data points in each intervention within each single subject from both groups, any significant different patterns between data points would indicate the different influence of strategies for selecting tutor-tutee pairs.
Table 8  Means and Standard Deviations of the Main Effects for the SIOS

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## 11. Child makes no response

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## 12. Child initiates

interaction

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<td>.37 .34</td>
</tr>
<tr>
<td>Non-LEP (n=7)</td>
<td>.51 .16</td>
<td>.87 .11</td>
<td>.29 .21</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male (n=6)</td>
<td>.36 .19</td>
<td>.82 .063</td>
<td>.38 .31</td>
</tr>
<tr>
<td>Female (n=8)</td>
<td>.38 .21</td>
<td>.91 .094</td>
<td>.29 .26</td>
</tr>
<tr>
<td>Dependent Variables</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>---------------------</td>
<td>------</td>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>13. Peer responds positively</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week*</td>
<td>Baseline (A)</td>
<td>Intervention (B)</td>
<td>Baseline (A)</td>
</tr>
<tr>
<td>Group*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEP(n=7)</td>
<td>.17</td>
<td>.068</td>
<td>.87</td>
</tr>
<tr>
<td>Non-LEP(n=7)</td>
<td>.43</td>
<td>.18</td>
<td>.82</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male(n=6)</td>
<td>.26</td>
<td>.17</td>
<td>.78</td>
</tr>
<tr>
<td>Female(n=8)</td>
<td>.32</td>
<td>.21</td>
<td>.90</td>
</tr>
<tr>
<td>14. Peer responds negatively</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week</td>
<td>Baseline (A)</td>
<td>Intervention (B)</td>
<td>Baseline (A)</td>
</tr>
<tr>
<td>Group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEP(n=7)</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Non-LEP(n=7)</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male(n=6)</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Female(n=8)</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Dependent Variables</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>---------------------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>15. Peer makes no response</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEP (n=7)</td>
<td>.048</td>
<td>.66</td>
<td>.00</td>
</tr>
<tr>
<td>Non-LEP (n=7)</td>
<td>.083</td>
<td>.048</td>
<td>.048</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male (n=6)</td>
<td>.083</td>
<td>.075</td>
<td>.042</td>
</tr>
<tr>
<td>Female (n=8)</td>
<td>.052</td>
<td>.043</td>
<td>.010</td>
</tr>
</tbody>
</table>

*Significant at the p < .005 level. “Week” refers the baseline and intervention week.*
Table 9 lists the frequency of parallel play of children with LEP and children with non-LEP during baseline and intervention conditions. This finding indicates the inverse effect of CWPT on children’s parallel play in both groups. The frequency of the seven positive social interaction behaviors of each subject during baseline and intervention were presented in Table 10, which served as additional data for the main effects of the intervention.

The results of single subject data analysis were shown in Graph 1 and Graph 2. Graph 1 was the data for each individual subject of the seven children with LEP from Class 1. Five phases (ABABA) of data were collected for each subject in Class 1. Graph 2 included data for each individual subject of the seven children with non-LEP from Class 2. Three phases (ABA) of data were collected in Class 2.

Graph 3 showed the mean comparison between the two groups in baseline and intervention phases. The mean comparison was based on the data from three weeks in each of the two classrooms. Although statistical tests did not show significant difference between the two groups during intervention, the single subject data not only indicated an overall main effect of the intervention, but also showed an obvious difference between the two groups during intervention.

Graph 4 showed the frequency comparison between the two groups on parallel play, indicating the inverse effect of intervention on this behavior in both groups. The frequency went down significantly during intervention phase and increased substantially in baseline for both groups. This trend was especially clear in Class One during the five-week baseline intervention period (ABABA).
Table 9  Frequency of Parallel Play during Baseline and Intervention Phases

<table>
<thead>
<tr>
<th>Subject</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>B</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1 (LEP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child 1</td>
<td>3</td>
<td>0</td>
<td>7</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Child 2</td>
<td>6</td>
<td>0</td>
<td>10</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Child 3</td>
<td>5</td>
<td>0</td>
<td>7</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Child 4</td>
<td>8</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Child 5</td>
<td>8</td>
<td>0</td>
<td>11</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Child 6</td>
<td>5</td>
<td>0</td>
<td>7</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Child 7</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>0</td>
<td>55</td>
<td>11</td>
<td>54</td>
</tr>
</tbody>
</table>

Class 2 (Non-LEP)

<table>
<thead>
<tr>
<th>Subject</th>
<th>A</th>
<th>B</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child 8</td>
<td>5</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Child 9</td>
<td>4</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Child 10</td>
<td>9</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Child 11</td>
<td>12</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Child 12</td>
<td>11</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Child 13</td>
<td>6</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Child 14</td>
<td>11</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>5</td>
<td>55</td>
</tr>
</tbody>
</table>

"A" is baseline and "B" is intervention.
## Table 10  Frequency of Positive Behaviors during Baseline and Intervention Phases

(Behaviors 1, 6, 7, 8, 9, 12, 13)

<table>
<thead>
<tr>
<th>Subject</th>
<th>Class 1 (LEP)</th>
<th></th>
<th>Class 2 (Non-LEP)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
<td>A</td>
<td>B</td>
<td>A</td>
</tr>
<tr>
<td>Child 1</td>
<td>31</td>
<td>76</td>
<td>16</td>
<td>77</td>
<td>6</td>
</tr>
<tr>
<td>Child 2</td>
<td>34</td>
<td>75</td>
<td>8</td>
<td>79</td>
<td>18</td>
</tr>
<tr>
<td>Child 3</td>
<td>22</td>
<td>78</td>
<td>37</td>
<td>69</td>
<td>14</td>
</tr>
<tr>
<td>Child 4</td>
<td>18</td>
<td>84</td>
<td>5</td>
<td>71</td>
<td>3</td>
</tr>
<tr>
<td>Child 5</td>
<td>8</td>
<td>73</td>
<td>28</td>
<td>72</td>
<td>5</td>
</tr>
<tr>
<td>Child 6</td>
<td>8</td>
<td>79</td>
<td>2</td>
<td>61</td>
<td>5</td>
</tr>
<tr>
<td>Child 7</td>
<td>15</td>
<td>72</td>
<td>31</td>
<td>72</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>136</td>
<td>537</td>
<td>127</td>
<td>501</td>
<td>65</td>
</tr>
<tr>
<td>Child 8</td>
<td>40</td>
<td>77</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child 9</td>
<td>23</td>
<td>72</td>
<td>32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child 10</td>
<td>23</td>
<td>69</td>
<td>33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child 11</td>
<td>23</td>
<td>71</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child 12</td>
<td>19</td>
<td>76</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child 13</td>
<td>56</td>
<td>55</td>
<td>28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child 14</td>
<td>45</td>
<td>71</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>225</td>
<td>491</td>
<td>156</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

“A” is baseline and “B” is intervention.

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Graph 1  Single Subject data of Class 1

Class 1 - Subject 1

Class 1 - Subject 2

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Graph 1  Single Subject data of Class 1 (Continued)

Class 1 - Subject 3

Class 1 - Subject 4
Graph 1  Single Subject data of Class 1 (Continued)

Class 1 - Subject 5

Class 1 - Subject 6

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Graph 1  
Single Subject data of Class 1 (Continued)

Class 1 - Subject 7

Class 1 - Average

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Graph 2  Single Subject data of Class 2

Class 2 - Subject 8

Class 2 - Subject 9
Graph 2  Single Subject data of Class 2 (Continued)

Class 2 - Subject 10

Class 2 - Subject 11

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Graph 2  Single Subject data of Class 2 (Continued)

Class 2 - Subject 12

Class 2 - Subject 13
Graph 2  Single Subject data of Class 2 (Continued)

Class 2 - Subject 14

Class 2 - Average
Graph 3  Mean Comparison between the Two Groups

Class 1 & 2 Averages
Graph 4  Frequency Comparison of Parallel Behavior between the Two Groups

Behavior 5 - Parallel Play

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Teacher/Student Satisfaction Questionnaire

At the end of this study, the two classroom teachers and all the participating students from both classes were asked to complete the Consumer Satisfaction Questionnaire. The teacher's questionnaire included 10 items to examine her/his perceptions about the social and academic benefits of CWPT (See Appendix F). Each item was answered on a 3-point Likert-type scale ranging from not true to very true.

Both Teacher A from Class 1 and Teacher B from Class 2 answered with very true for the social and academic benefits of using CWPT in their classrooms. Teacher A answered the item 5 (time consuming) with somewhat true. She made an additional comment stating that time consuming was somewhat true in the beginning, but it was not a time consuming issue after the first week of implementing the intervention. Teacher B answered the last item (token economy and time-out) with somewhat true. He also commented that sometimes classroom management was necessary to organize activities. Table 11 was a summary of answers from Teacher A (Class 1) and Teacher B (Class 2).

The students' questionnaire included 5 items with Yes or No choice on each item. These items were used to assess the degree to which they enjoyed peer tutoring and believed that it was helpful in peer interactions. The students were also asked about their desire to participate in the CWPT in the future, and how they felt about the CWPT procedure. All the 28 participating students from both classrooms answered with yes to all the five items, although data were only collected and analyzed on the 14 subjects from both classrooms. Table 12 summarized students' perceptions on CWPT.
### Table 11  Summary of Teacher Satisfaction Questionnaire on Teachers A and B

<table>
<thead>
<tr>
<th>Item</th>
<th>Not true</th>
<th>Somewhat true</th>
<th>Very true</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The students showed significant improvement in the academic</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Teacher A</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher B</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. The students showed significant improvement in social interactions</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Teacher A</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher B</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I will continue to use peer tutoring</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Teacher A</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher B</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I found the manual helpful</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Teacher A</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher B</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Impractical and time consuming</td>
<td></td>
<td></td>
<td>X (somewhat true in the beginning)</td>
</tr>
<tr>
<td>Teacher A</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher B</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table continues
<table>
<thead>
<tr>
<th>Item</th>
<th>Not true</th>
<th>Somewhat true</th>
<th>Very true</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Awarding the points was helpful</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Teacher A</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Teacher B</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>7. I'm satisfied with the results</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Teacher A</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Teacher B</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>8. I would recommend peer tutoring to other teachers</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Teacher A</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Teacher B</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>9. The peer tutoring is preferable</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>all children</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Teacher A</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Teacher B</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>10. Per tutoring is better than economy token or time-out</td>
<td></td>
<td></td>
<td>X (somewhat true)</td>
</tr>
<tr>
<td>Teacher A</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Teacher B</td>
<td></td>
<td></td>
<td>X (somewhat true)</td>
</tr>
</tbody>
</table>
Table 12  Summary of Student Satisfaction Questionnaire

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I enjoyed peer tutoring</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>2. The peer tutoring helped me to be a better student</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>3. I would like to have peer tutoring again</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>4. I would tell a friend about peer tutoring</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>5. I liked getting points for giving the right answers.</td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>

In addition to these questionnaires, students' verbal statements were also viewed and transcripted as qualitative data by the two observers separately. Table 13 summarized the verbal statements of students from the videotaped observation. Specifically, the two questionnaires and the qualitative data were used to answer the following research question:

5) Do children and teachers from the LEP and non-LEP classrooms have similar perceptions about the use of CWPT as measured by Teacher/Student Satisfaction Questionnaire?
<table>
<thead>
<tr>
<th>Child ID #</th>
<th>Source</th>
<th>Verbal Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td># 5</td>
<td>Tape 6</td>
<td>“You know you can do it.”</td>
</tr>
<tr>
<td># 5</td>
<td>Tape 10</td>
<td>“You are doing good.”</td>
</tr>
<tr>
<td># 2</td>
<td>Tape 6</td>
<td>“Can you make a ten? You are great!”</td>
</tr>
<tr>
<td># 1</td>
<td>Tape 11</td>
<td>“Good job. You are a genius!”</td>
</tr>
<tr>
<td># 13</td>
<td>Tape 12</td>
<td>“Try your best!”</td>
</tr>
<tr>
<td># 3</td>
<td>Tape 6</td>
<td>“I like it! This is fun!”</td>
</tr>
<tr>
<td># 5</td>
<td>Tape 15</td>
<td>“You can join us. This is fun.”</td>
</tr>
<tr>
<td># 12</td>
<td>Tape 17</td>
<td>“Try it again. I know you can do it.”</td>
</tr>
<tr>
<td># 14</td>
<td>Tape 17</td>
<td>“You guys are doing better today.”</td>
</tr>
<tr>
<td># 7</td>
<td>Tape 9</td>
<td>“Can you read this to me?”</td>
</tr>
<tr>
<td># 7</td>
<td>Tape 11</td>
<td>“It’s your turn. I will wait.”</td>
</tr>
<tr>
<td># 3</td>
<td>Tape 18</td>
<td>“When will we do CWPT again? I like it!”</td>
</tr>
<tr>
<td># 6</td>
<td>Tape 17</td>
<td>“I got better points today.”</td>
</tr>
<tr>
<td># 9</td>
<td>Tape 9</td>
<td>I want to be the tutor today.</td>
</tr>
<tr>
<td># 10</td>
<td>Tape 9</td>
<td>“Can you say again, please?”</td>
</tr>
</tbody>
</table>
CHAPTER 5

DISCUSSION

Social competence not only indicates the social skills of young children, it also affects all the other developmental areas because children’s development is all closely related to one another across domains. Social interaction plays a significant role in young children’s learning and social skills enable children to be active learners in the interaction with peers and adults.

In early childhood education programs, social play has been emphasized by professionals and parents based on approaches of Dewey, Vygotsky, Parten, and other theorists and educators. Although Piaget believed that a child constructs new knowledge within the child through active exploration with the environment and the association with the child’s own past experience, Piaget also valued the role of play in the child’s social and emotional development. According to Piaget, play pushes children out of egocentric thought patterns by interacting with other children in play situation and being forced to consider the viewpoints of their playmates (Brewer, 1998).

Play theories have been widely accepted by professionals and play activities have been encouraged by teachers and parents in early childhood preschool and kindergarten classrooms. For primary-grade children, however, the expectation that only serious learning should occur is still prevalent among some teachers and parents. Different from the traditional views on formal education, many educators today believe
that play can be serious learning for primary-grade children (Brewer, 1998). Although the form or strategy of play may seem to be different from that of preschoolers and kindergartners, many play activities are appropriate and important for primary-age children because play provides the most natural social context in which learning occurs.

Learning is developed in the social context and it works for all children. The social environment includes the child’s family, school, community, culture, and all other contexts that are reached by the child. Undoubtedly, cultural differences affect how the child thinks. Vygotsky (1978) believed that the child’s cultural and individual history are important factors influencing how the child interacts with others in the social context. Within the social context, children share activities with others first, and then come with individual experiences (Vygotsky, 1978).

Children learn best when they positively interact with peers and adults in a meaningful activity (Phillips & Soltis, 1998). However, because of environmental or developmental limitations or differences, some children were not provided the most appropriate social context in their learning. Among these were children with developmental delays or disabilities, and children who are from culturally and linguistically diverse background.

In the United States, more and more children with diverse backgrounds have been served in the early childhood education programs (birth to 8). Among this diverse population, children with Limited English Proficiency (LEP) are a group whose primary language is other than English and who are included in the general education settings. In addition to the limited English ability, many of children with LEP are from a disadvantaged economic background that often disconnects the necessary interactions.
between the children’s families, the communities, and the school (Torres, 2001). It has been a challenging task for educators to prepare appropriate educational environments and instructional strategies in helping these children reach their potential in developmental areas.

Unfortunately, many children with LEP have received lower quality of education in terms of materials, interactions, activities, and expectations (Faltis, 1997). The limited empirical studies on children with LEP almost all focused on English language development or academic performance of these children (August, 1987; Gersten & Baker, 2000, Greenwood et al., 2001). Little attention was paid to the social interaction behaviors of children with LEP. In educational research field, there is a discrepancy between the critical role of social interaction and the availability of empirical studies.

The purpose of this study was to examine the effects of Classwide Peer Tutoring (CWPT) on the social interaction behaviors of children with LEP. A group of children who are native English speakers (non-LEP) were also observed in order to identify whether there was a difference in social interaction behaviors between children with LEP and children with non-LEP. CWPT is a peer-mediated instructional strategy that has been extensively researched in the past twenty years for children with different needs, especially in interventions for children with developmental delays or disabilities such as ADD/ADHD and learning disabilities (DuPaul & Eckert, 1998).

Most of the previous studies on CWPT primarily examined its effects on students’ academic achievements or its combined effects with other intervention strategies in children’s social behaviors. No studies focused on the distinguished effects of CWPT on the social behaviors of children, specifically children with LEP.
Additionally, for the first time, this study compared the effectiveness of CWPT on children with LEP and children with non-LEP in social behaviors. The results would provide professionals statistical and practical significance in effective instruction for young children with diverse needs.

This study was conducted in two second-grade classrooms with 14 children with LEP in Class 1 and 14 children with non-LEP in Class 2. Seven children from each class were selected as the subjects in the study, for a total of 14 subjects. Baseline data were collected for a week. Then a week of training was practiced in both classrooms, followed by the implementation of CWPT in each of the two classes, respectively. After a week of intervention using CWPT, each of the classes was back to baseline condition as CWPT was withdrawn and teacher-directed instruction was used instead as usual. In the fourth week, Class 1 was applied to second CWPT condition, and finally during the fifth week back to baseline condition. Therefore, Class 1 had a total of five weeks’ videotaped observation for the data analysis (ABABA) and Class 2 had a total of three weeks’ videotaped observation for data analysis (ABA).

It was predicted that children with LEP and non-LEP will both benefit from the CWPT tutor-tutee procedures in terms of 15 social interaction behaviors (Seven behaviors are positive). The researcher also predicted that there was no significant difference between the two groups of children in effectiveness of CWPT on social behaviors. Also, the boys and girls were predicted to be similar in social interaction behaviors.
Social Interaction Behaviors during Baseline and CWPT Procedures

Question one was about the overall effects of CWPT on children with LEP and children with non-LEP in terms of social interaction behaviors measured by the Social Interaction Observation System (SIOS) (Kremeyer et al., 1991). It was predicted that CWPT would be effective in increasing and improving children's social interaction behaviors for all children, regardless of the language status. Among the 15 social interaction behaviors on SIOS, seven of them were positive, five were passive, and three were negative behaviors.

The positive behaviors included child engages in positive interaction with peers, child engages in associated and/or cooperative play, child engages in positive linguistic interaction, peer initiates interaction towards child, child responds positively to peer initiation, child initiates interaction towards peers, and peer responds positively to child's initiation. The negative behaviors included child directs negative behaviors to peers, child responds negatively to peer initiation, and peer responds negatively to child's initiations. The passive behaviors were child engages in nonplay behavior, child engages in solitary play, child engages in parallel play, child makes no response to peer initiation, and peer makes no response to child's initiation. Among the seven positive behaviors, peer initiates interaction towards child, and child initiates interactions towards peers are also considered active behaviors.

Based on the SIOS data observed and analyzed by the two observers, CWPT had a positive effect on the social behaviors of children with LEP and children with non-LEP as predicted. The positive effects could be identified by both the group comparison using repeated measures of two-way ANOVA (Table 6 and Table 8) and the single
subject withdrawn design within each group using frequency and means (See Graphs 1, 2, 3, and Table 10).

In group comparison, there were 15 sessions of observation (five weeks) for Class 1 and 9 sessions of observation (3 weeks) for Class 2. The repeated measures of ANOVA were based on the three weeks’ observation in each group because the researcher wanted an equal number of observation for group comparison. The results from ANOVA tests indicated the main effects of CWPT on social behaviors in two ways. One, the overall number of social interaction behaviors was significantly increased during intervention week in both groups by comparing the means. Two, the quality of social interaction behavior was also significantly improved during intervention evidenced by the significant difference between intervention and baseline conditions on the seven positive behaviors.

There was no significant interaction effect between the baseline or intervention week and group, which indicated that the intervention was equally effective on both groups. In another word, during intervention children from both groups had significant increase in social interaction behavior. Then, when they were back to baseline, children from both groups exhibited fewer social interaction behaviors.

One interesting finding was identified. Among the eight behaviors that had a significant main effect, all the seven positive behaviors were increased during intervention as it was predicted. The other one behavior that was statistically significant was parallel play. However, it showed the opposite direction with all the seven positive behaviors. While all the positive behaviors were increased during intervention and decreased during baseline, parallel play was significantly decreased during intervention.
and significantly increased in baseline condition. This was the case for both groups, except for Child #7 from Class 1 who exhibited 0 (zero) frequency of parallel play during first baseline and the first intervention phases (See Graph 4 and Table 8, and Table 9). But even this child was engaged in parallel play during the most of observation time in the second and third baseline conditions (8 out of the 12 observation intervals; See Table 9).

This finding conflicts with some of the studies on the sequence of children's social play, especially Parten's social play theory. According to Parten (1932), children's social or peer play could be sequenced in a meaning order from simple, minimum social interaction to complex, maximum social interaction and the complexity increases with the age. For younger preschoolers parallel play may dominate and associative play is limited. Then older preschoolers start play associatively and by the time they reach pre-kindergarten and primary grades, associative and/or cooperative play dominate, although the other simpler form of play may never disappear (1932). In this study, children in both groups engaged more in parallel play during baseline conditions. Interestingly, children in both groups exhibited significantly fewer parallel play behaviors during intervention.

This finding could be explained from several points. First, the reduced parallel play may have a negative correlation with the increase of the associative play. Data analysis from the group comparison indicated that both groups had a significant associative and/or cooperative play during intervention (See Table 6 and Table 8). During baseline conditions, children in both groups engaged substantially in parallel play, and very few in associative or cooperative play. When intervention was
implemented, the data changed the other way: associative play was increased significantly, whereas parallel play was reduced greatly. Especially, parallel play in Class 1 was reduced to zero during the first intervention (See Graph 4). The decrease of parallel play indicates the effects of CWPT on positive social interaction behaviors such as associative or cooperative play. This result may imply that CWPT is an effective strategy for children to play associatively or cooperatively.

Second, the tutor-tutee partnership characteristic that CWPT requests may contribute to the increase of children’s associative/cooperative play. Although observation was taken during free play time after CWPT was implemented rather than during the CWPT process, the significant difference can be still counted on the effectiveness of the intervention because any spillover effects from peer tutoring can carry over at least 24 hours (Brady, 1997). Besides, the additional single subject data within each group also supported this finding (See Graphs 1 & 2).

Third, the finding that children from both groups engaged more in parallel play, less associative/cooperative during baseline and more associative/cooperative play, less parallel play during intervention might imply that the natural setting of the routine classroom is more appropriate for parallel play other than associative play. Different from a preschool setting, the primary-grade classrooms are more academically arranged, for example, each child had an assigned desk with his/her name on it. More academic activities were involved in primary–age children’s play (Brewer, 1998). Children may be more used and trained to do their own work for an assignment in class because of the nature of the schedule or the curriculum requirement. Furthermore, although Parten (1932) and Howes and Matheson (1992) all suggested that parallel decreased with the
increase of age, it never completely disappears. Children at different age level always have some type of parallel play.

Regardless of the culturally and linguistically different backgrounds for the participating children, every child in the study showed a significant increase in all the seven positive social interaction behaviors. In addition to the statistical results from the ANOVA tests, the single subject data for each of the 14 children across both classes also indicate the main effect of the intervention (See Graphs 1, 2, and 3). The main effect of the invention was especially obvious on child 1, child 4, child 5, child 6, child 7, child 9, child 10, and child 13 (See Graphs 1 & 2).

Question Two was addressed to examine whether there was a different effect of the intervention on the social interaction behaviors between children with LEP and children who are English speakers (non-LEP). It was predicted that CWPT would have a similar effect on both groups of children. Previous studies have supported the positive effectiveness of CWPT on the academic achievements of children with LEP or children with other specific needs (e.g., August, 1987; Greenwood et al., 2001; Kamps et al., 1999). Social competence of children is developed in the natural settings that involve teachers, parents, or peers. As long as the environment is appropriately prepared and the program is developmentally and individually appropriate for each child, it was assumed that children with LEP are expected to behave similarly as children with non-LEP in social interaction behaviors, although individual differences may always exist.

As predicted, results from the group comparison using repeated measures of ANOVA on the SIOS data indicate that children with LEP and children with non-LEP were not significantly different in all the 15 social interaction behaviors during
intervention. The results conflict with some previous studies indicating that children with LEP often had less social interaction than children with non-LEP (Minicucci & Berman, 1995). The current finding suggests that CWPT was equally effective for children with LEP and children with non-LEP in general education settings.

However, the statistical test did show one significant difference between the two groups on one positive behavior during baseline condition, showing that the two groups were different before intervention was implemented on this behavior. The difference was identified on behavior # 13: peer responds positively to child’s initiation. This finding was illustrated in Table 8 where the means and standard deviations were compared between the two groups on each behavior. The means between children with LEP (M=.17, SD=.068) and children with non-LEP (M=.43, SD=.18) showed that children with non-LEP were involved more in positive peer response to a child’s initiation than children with LEP during the baseline condition. Although it was only different on one behavior during baseline, some implications may be drawn out of this finding.

First of all, results show children with LEP had involved in fewer responses to a child’s initiation in interaction and this may be explained from Vygotsky’s concept of zone of proximal development. According to Vygotsky (1978), a child learns through working in his/her zone of proximal development with others. He believed that children would perform much more skillfully together with others than they could alone. But he also emphasized that until children have acquired competence in developing skills, they require help and supervision.
The concept of zone of proximal development implies a distinction between the actual developmental level of the child and the potential level of the child’s development (Smith, 1993). The child’s potential level of development can be reached through an adult’s or a more skillful peer’s guidance, which often named scaffolding in Vygotsky’s theory, although he never used the term himself. Scaffolding refers to the guidance and interactional support given by a tutor in the zone of proximal development.

Scaffolding has two levels. On one level, it allows the child to do as much as he or she can. On the other hand, what he or she cannot do is filled by a more skillful peer or an adult. In Class 1 for this study, all the children except one were English language learners (ELL) defined by the local school district standardized tests. Their reading levels were at least one grade below the average grade. In this case, the opportunity that they could work with a more skillful peer in the class was very limited, or at least less than Class 2 where all children are native English speakers. In Vygotsky’s theory, when these children could not do a task by themselves, it was not “filled” by a more skillful peer.

The lack of peer modeling, combined with the limited English proficiency, might explain the fewer peer responses to child’s initiation during baseline for children with LEP. When CWPT was implemented, each child worked together with a partner and all children in the whole class work as two teams. Each child has an equal opportunity to be both the tutor and tutee, so that they are able to observe and imitate from each other. This feature of CWPT allows children to learn from each other without having to feel less welcomed or inferior.
As what social learning theory suggests, the nature of learning includes imitation and observation. Bandura believes that many behaviors are developed through the individual's reactions to and interpretations of situations (Bandura & Walters, 1963). Verbal instruction and the individual’s observations within a social context affect that individual’s expectations, abilities, and other inner qualities used to determine his or her response (Wortham, 1998). Therefore, the less peer response to child’s initiation might suggest a less social competence than that of children with non-LEP. However, because of the small number of subjects, cautions should be noticed before taking any conclusions.

In addition, the data from the single subject graphs added more information on the two groups. By visually reviewing the single subject graphs, a difference between the two groups on the 7 positive behaviors does show quite obviously between subjects from two groups, although the statistic tests did not show significant difference. For example, overall, there was a more obvious effect of the intervention on the subjects in Class 1. Five of the seven children in Class 1 had exhibited no overlap between baseline and intervention (child1, child 4, child 5, child 6, child 7).

In Class 2, four out of seven children had an overlap between baseline and intervention (child 8, child 9, child 10, child 13). This indicates that the difference between baseline and intervention for children with non-LEP was not as big as children with LEP. Specifically, in Class 1, the social interaction was lower than that in Class 2 during baseline, but higher than Class 2 during intervention (See Graph 3).

Although the two participating teachers had different teaching styles (Teacher A was more student-centered and Teacher B more instructor-center) that could contribute
to the change of behavior, the data from both group and single subject design did not show the teacher or classroom effect was a factor influencing the results. Comparing the frequency between the two groups indicated a more obvious effect of the intervention for children with LEP (See Table 10).

For Class 1, the total frequency of all the seven positive behaviors during first baseline was 136. During intervention the frequency was increased to 537, with an increase of 75%. Then during the second baseline it dropped to 127, decreased 76% from the intervention. For Class 2, during first baseline the frequency of positive behaviors was 225, then in intervention increased to 491. The increase was only 46% compared to the 75% in Class 1. From intervention to baseline the frequency was again dropped to 156, decreased 68% from intervention.

The frequency number indicated at least two points. One, there was more increase of the intervention for Class 1 than for Class 2. Two, after intervention, both groups’ positive social interaction behaviors dropped even lower in the second baseline than that in the first baseline.

The more effectiveness of the intervention for children with LEP might imply that children with LEP might be more willing to interact with their peers when the environment is appropriately prepared for them. According to Montessori’s theory, children learn best in a well-prepared, child-centered environment in which children can do things for themselves (Morrison, 1998). Children are always curious about new information and knowledge. The diverse cultural and linguistic backgrounds among children with LEP can stimulate children’s motivation to interact each other.
The fact that both groups' frequency of positive social interaction behaviors was dropped lower in the second baseline than when they were started might indicate the influence of research effect. Because children indicated they enjoyed the CWPT procedure during intervention (See Table 12 and Table 13). They might be expecting the same procedure would happen after they were back to baseline. When their expectation was not met (for the research purpose in this study), a disappointment might affect how they behave. The extra two phases (BA) for Class 1 furthered indicated this trend. When Class one was back to intervention in the fourth week, their positive social interaction frequency was increased again from 127 to 501, with 75% increase. Then, the frequency was down again from second intervention to third baseline. This time the frequency was decreased 87% from 501 in second intervention to 65 in third baseline.

The strength of single subject design is to detect the individual difference between subjects and within subjects that group comparison often cannot identify if the number of subjects were too small. In this study, the statistic tests show that the main effect of the intervention was significant on all the positive social interaction behaviors, indicating a strong effectiveness of the intervention, in spite of the small number of subjects. In addition, the single subject data also detected some difference between the two groups that were not identified by repeated measures of ANOVA in group comparisons. These differences, although not big enough to be statistically significant, would enable researchers and teachers to identify some features in the current classroom setting that might contribute to the different behaviors of children.

Furthermore, the single subject design identifies the individual difference for each subject between baseline and intervention that cannot be measured by simply
comparing the means. For example, Child # 6 was observed to exhibit very low level of social interaction in the beginning (almost zero), but his social interaction behaviors were significantly increased during the intervention. This may provide information for the teacher to prepare more peer-mediated instruction for that specific child. Unlike Child # 6, Child #13 showed fairly high social interaction during baseline and maintained at high level in intervention. This information suggests that intervention may not be necessary for this particular child.

In addition, the personality difference of individual children may also have an effect on their social interaction behavior. However, the data from this study show that all children’s social interaction behaviors were increased during intervention. This finding indicates that a child may choose to be alone due to the environment rather than the lack of social skills of interacting. When the environment is appropriate for social interaction, the child would be able to do it, such as the CWPT condition.

Although the group comparison only compared the ABA phases from the two groups, the two extra phases from Class 1 added more confidence to the significant level by showing the increase in a second B and decrease in another A. The whole single subject data for Class 1(ABABA) combined with that of Class 2 (ABA) added power to this study.

Question Three was to measure whether there was a difference in active and passive behaviors between boys and girls when using CWPT process. As early as preschool years, gender typing is formed. Gender typing refers to the process of developing gender roles, or gender-link preferences and behaviors valued by the larger society (Berk, 1999).
The two major approaches that explain children's gender typing are social learning theory and cognitive-developmental theory. Social learning theory emphasized modeling and reinforcement through interaction, whereas cognitive-developmental theory views children as active thinkers about their social world.

Another theory that combines these two approaches is gender schema theory. This theory is an information-processing approach that emphasizes both environmental pressures and children's cognition together in shaping gender-role development (Bem, 1984, 1993; Martin, 1993; Martin & Halverson, 1987). Because of environmental pressures, children pick up gender-stereotyped preferences and behaviors and responding to instruction from others. Cognitively, however, children start to organize their experiences into gender schemas to interpret their world (Berk, 1999). Gender schemas are masculine and feminine categories that children apply to themselves once they can label their own sex.

Starting at age 2, children begin to label their own sex and that of other people. Once gender categories are formed, children begin to sort out what they mean in terms of activities and behaviors. This is how gender stereotypes are established and usually a wide variety of gender stereotypes are mastered quickly (Berk, 1999).

Beginning from preschoolers, children's gender-stereotyped beliefs are becoming stronger. Boys are seen to be more active, assertive, and overtly aggressive. Girls tend to be more fearful, dependent, compliant, considerate, emotionally sensitive, and relationally aggressive (Brody & Hall, 1993; Eisenberg & Fabes, 1998; Feingold, 1994; Saarni, 1993).
Children's same-sex peer relationships are powerful environments for strengthening stereotyped beliefs and behavior. At preschool age, children also develop different styles of social influence in sex-segregated peer groups (Berk, 1999). For example, boys are more often relying on commands, threats, and physical force to get their way with male peers. In contrast, girls learn to use polite requests and persuasion (Borja-Alvarez, Zarbatany, & Pepper, 1991; Leaper, 1991). By the end of early childhood, boys’ “masculine” gender identities strengthen, whereas girls’ identities are more flexible with a wider range of options that have some “other-gender” characteristics, such as joining sports team, or a science project. Findings from gender-typing studies reveal that in most societies, boys were dominant and aggressive and girls were dependent, compliant, and nurturant (Whiting & Edwards, 1988a, 1988b).

Although gender typing is widely accepted in all cultures in terms of activities and behaviors, gender stereotyping in children can be reduced. For example, parents and teachers can explain to children that interests and skills should determine a person’s occupation and activities other than gender regarding the variety of gender stereotypes in the society.

In a small society such as a classroom, if the teacher or other adults could set a model for children that both boys and girls have an equal opportunity in all kinds of activities rather than group them by gender-preferred activities, children should be able to reduce these kinds of stereotypes. Based on these assumptions, the researcher predicted that there would be no difference between boys and girls in their social interaction behaviors. The tutor-tutee pairs were formed either randomly or by skill levels.
As predicted, results from the SIOS data show that there was no difference between boys and girls in active or passive social interaction behaviors. Overall, both boys and girls across two classes increased their positive social interaction behaviors during intervention and decreased in baseline conditions. The main effects of intervention as indicated by the repeated measures of ANOVA were significant in all the seven positive behaviors and one passive behavior (parallel play) as described as above.

However, there was significant interaction effect between week and gender on behavior # 12: child initiates interaction towards peers, as shown by ANOVA tests. The significant interaction effect indicates that during first baseline and intervention, girls (M= .38 for first baseline and M=.91 for intervention) engaged more than boys (M=.36 for first baseline and M=.82 for intervention) on behavior #12: child initiates interaction towards peers. Yet, when they were back to baseline after the intervention was withdrawn, boys (M=.38, SD=.31) were more engaged in this behavior than the girls (M=.29, SD=.26), although the overall main effect did not change (See Table 8).

Although statistically the intervention was equally effective for both boys and girl, the week-gender interaction effect shows girls’ social initiation behavior was reduced greatly during second baseline, even lower than they had during first baseline. On the other hand, although boys’ social initiation was also significantly reduced during second baseline, the level was slightly higher than they had during first baseline.

This change of rank order on initiating interaction behavior between the boys and girls could be explained that boys might be more influenced by the learning permanence effect, whereas girls were more influenced by the researcher effect. In another word, girls might be more sensitive and emotionally involved with the
researcher, the person; whereas boys might be more involved in the intervention, the process. For example, during the second baseline when CWPT was not implemented, the researcher was asked by a few girls “Are you leaving? I will miss you!” The questions that the researcher was asked by boys were more like “Are you not doing the CWPT? I want to be the tutor again!” Once again, because of the small number of the sample and limited numbers of observation, any conclusions should be made in a caution. Any reckless conclusion might lead to another gender stereotype.

Question Four dealt with the tutor-tutee pairing strategies. In this study, two strategies were used to pair the tutor and tutee in the whole class level: random pairing and skill pairing (See Appendix H). By random pairing children were allowed to choose their partners or the teacher randomly put two children together as a pair. Skill pairing strategy means children were arranged by the teacher according to their academic level: each pair was in the similar level in the academic area. These two strategies were alternately used during the CWPT process. If in the previous session random pairing was used, then in the following session a skill pairing was used, then the next day random pairing was used again. Most previous studies suggested that random pairing be used for math and spelling, and skill pairing be used for reading for CWPT process (Greenwood et al., 1997).

For this study, however, the researcher applied both strategies because children in this study were at a lower age and grade level than most samples in previous research. Reading comprehension was limited at this level, but spelling and math (one or two digital numbers) were the routine activities for both classrooms. Some studies (e.g., DuPaul & Henningson, 1993; Greenwood et al., 2001) suggested that the academic
content used during CWPT process should be alternated because the material might influence how children interact each other. Based on previous research, this study alternated both the academic contents (e.g., math one day, spelling the next day) and the strategies of tutor-tutee pairing. It was predicted that strategies for selecting tutor-tutee pairings would influence the effectiveness of CWPT.

To answer this question, the single subject data during the intervention phase in both classes were compared and analyzed. By visual reviewing and comparing the data points in the two phases of intervention in Class 1 and one phase of intervention in Class 2, no pattern was found (See Graphs 1 and 2). In other words, although each day a different strategy was used to arrange the pairs, the data did not show preference to either one. That is to say, the strategies of how to arrange the tutor-tutee pairs did not influence the effectiveness of the CWPT.

This finding seems to conflict with most previous studies. However, the result could be explained in terms of children’s age or grade, the content used, and the focus of this study.

Most previous studies were conducted for higher elementary-grade children (third grades or higher) on their academic performance (e.g., August, 1987; Greenwood et al., 2001; Kamps et al., 1999). The present study focused on the social aspect of two groups of second-grade children. Although academic activities were more emphasized than preschoolers and kindergartners, the primary-age children are less academic oriented than the higher elementary grade children. Play is still considered a critical part in the curriculum development (Wortham, 1998). Even for children with a lower level of
development or skill, the academic difference was much less than that for older children. So the focus of children were more on the social interaction instead of academics.

The observation time could be another factor contributing to this finding. In order to examine the effect of CWPT on children’s social interaction, free play period was observed immediately after the CWPT process instead of during the CWPT process. This was done because the spillover effects from peer tutoring would carry over at least 24 hours (Brady, 1997). This indicates that children at free play time may care less about the academic skill level, but more on the social interaction in doing activities. Children are believed to be more active in an interaction if they are highly motivated to do so (Peterson, 1996). Instead of the teacher-directed instruction, the free play provides children an opportunity to choose what they are interested in and therefore they are internally motivated other than motivated by external reinforcers.

The effects of CWPT seem to be carried over to the free play period immediately followed. The observation data show that almost all children remained with the same partner or joined together when they moved to free play time. No child was observed left out during the intervention. Therefore, it can be concluded from this study that CWPT had a positive effect on children’s social interaction regardless of how they were paired.

Teacher/Students’ Perceptions on the Use of CWPT

The last question compared the perceptions of teachers and students on the use of CWPT in the two groups. The Consumer Satisfaction Questionnaires developed by DuPaul and others (1998) were adapted for this study. The Teacher Satisfaction
Questionnaire (See Appendix F) includes 10 items to examine her/his perceptions about the social and academic benefits of CWPT. Considering the fact that teachers always have a very busy schedule so that time would be a big concern for most teachers, the two teachers were also asked to rate how they think about the CWPT process in terms of time consuming and ease of application. Each item was answered on a 3-point Likert-type scale ranging from not true to very true.

Both Teacher A from Class 1 and Teacher B from Class 2 answered with very true for the benefits of using CWPT (See Table 11). Teacher A answered the item 5 (time consuming) with somewhat true, but she explained to the researcher that after the first week of training, the time consuming was not an issue at all. Teacher B answered the last item with somewhat true: This peer tutoring works better than economy token or time-out. This could be explained by the different teaching styles between the two teachers. Based on the observation in this study, Teacher A was more student-centered and Teacher B was more teacher-centered. For example, Teacher A would allow children to ask her questions at any time when she was talking. Teacher B considered it inappropriate for children to interrupt when the adult was talking.

Both teachers answered very true for the academic benefits and social benefits. Although the academic benefits were not the focus of this study, children’s improved academic benefits were indicated by the teachers’ weekly pre- and post-tests on spelling and math during the research. The teachers also noticed that children were more cooperative in group activities after CWPT was implemented.

Both of them were very satisfied with the results of peer tutoring and indicated that they would continue the peer tutoring procedure in their routine teaching practice.
Although for the purpose of the experimental design, the last week in each class ended with baseline condition, both teachers indicated that they wanted to continue using CWPT every week in spelling and math. In fact, two weeks after the end of this study, the researcher found out in Class 2, the teacher used CWPT every day during the center time (Class 1 was on track break).

Both Teacher A and Teacher B answered very true for the meetings with the researcher and the use of the manual. They were very cooperative during the process of the study. In addition to help the researcher in training and preparing children for the CWPT procedure, they asked more information about the use of CWPT. The researcher provided them not only the necessary materials used for the CWPT procedure, but also extra materials for them to use in the future in the more advanced areas such as reading and writing.

During the CWPT procedure, both teachers participated not only as a facilitator, but also a partner. For example, one day Teacher B volunteered to work together with a child in Class 2 as a pair. He also switched the role of tutor and tutee with the child like other children did in the class. In order to help some children understand the process, Teacher A frequently worked together with these children by modeling them how to be a tutor and a tutee. Although teachers’ behavior and the interaction between the teacher and children were not the focus of this study, both teachers’ behaviors set a very positive role model for the children in the class. On the other hand, this also indicates that there might be interaction effect between the intervention and the teachers’ behavior. In another word, did teachers’ social behavior in class contribute to the effects of intervention? Further research is needed to answer this question.
This study ended with satisfaction for the teachers and the researcher. After the researcher shared her study interest, Teacher A decided to present together with the researcher about CWPT in an national/international conference (ACEI), and Teacher B indicated his interest in the future research on CWPT. Both of them indicated they had benefited in terms of research methods and teaching strategies.

The Questionnaire for students’ satisfaction level was also adapted from the survey by DuPaul and others (1998). Because children in this study were younger and in lower grade than the subjects in DaPaul and his colleagues’ study (1998), only five items were used here to examine their perceptions on the use of CWPT. All the 14 children participated in the CWPT process in each class (with a total of 28) answered yes to all items, although only the 7 subjects’ answers from each class were listed in Table 12 and Table 13.

All the 14 subjects in this study indicated that they enjoyed peer tutoring, the peer tutoring helped them to be better students, they would like to have peer tutoring again, they would tell a friend about peer tutoring, and they like getting points for giving the right answers. The immediate effect of CWPT on children’s social interaction behaviors was not only shown by the results of the ANOVA tests and the single subject graphs, children’s perceptions on CWPT were also observed in the videotaped data in the form of qualitative information (See Table 13).

Children from both classes were observed very active in CWPT process and they were willing to be both a tutor and tutee. Many positive linguistic interactions were observed in the intervention (See Table 13). They used encouraging comments such as
"Try it again! I know you can do it." They also initiated an interaction such as "You can join us. Can you say again, please? Can you make it a ten?"

The answer of the last question, therefore, it is very encouraging. Both the participating teachers and students had strong positive perceptions on the use of CWPT and CWPT has been applied in both classrooms on weekly basis at the point of this dissertation was completed.

Conclusions

Based on the data from SIOS, the Consumer Satisfaction Questionnaires, and the qualitative data from the videotaped observation, through both group comparison and single subject design analysis, the following conclusions can be drawn from this study.

1. The use of CWPT was effective on increasing and improving the social behaviors of children with LEP and children with non-LEP. This finding was indicated by the following positive behaviors: child engages in positive interaction with peers, child engages in associative and/or cooperative play, child engages in positive linguistic interaction, peer initiates interaction towards child, child responds positively to peer initiation, child initiates interaction towards peers, and peer responds positively to child's initiation. The positive finding of CWPT was also shown in children's parallel play. When children were engaged in more associative/cooperative play, their parallel play was greatly reduced. Or vice versa.

2. There were no significant differences between children with LEP and children with non-LEP in terms of the effectiveness of CWPT on their social behaviors. All
children’s positive social interaction behaviors were significantly increased during intervention.

3. There was one significant difference between children with LEP and children with non-LEP before intervention on behavior: peer responds positively to child’s initiation. Children with non-LEP was significantly more involved in this behavior before CWPT was implemented indicating that children with LEP may need more role modeling in interacting with peers.

4. There was no gender difference about social effects of CWPT. Both boys and girls had equally benefited from the use of CWPT in social interaction behaviors. An interaction effect between the baseline or intervention week and gender was identified on behavior: child initiates interaction towards peers. This finding was indicated by the reversed rank between boys and girls: during first baseline and intervention girls were engaged more in this behavior than boys, but during the second baseline, boys were engaged more than the girls. The overall main effect of the intervention did not change.

5. Parallel play dominated in both classrooms during baseline conditions. This finding may imply that the educational setting or curriculum design did not encourage for associative or cooperative play.

6. There was a reverse effect of the intervention on children’s parallel play. Both children with LEP and children with non-LEP were primarily engaged in parallel play during baseline. When intervention started, associative/cooperative play dominated and parallel play was significantly reduced. This finding indicated a likely negative correlation between the associative play and parallel play of children. It also suggested
that children were willing to engage in associative or cooperative play if the environment permitted.

7. Children's social interaction behaviors were not influenced by how they were paired as tutor-tutee partners. Children with LEP and children with non-LEP were involved significantly more in positive social interaction behaviors during CWPT intervention, regardless of whether they chose their own partners, or they were arranged by the teacher according to their academic skill level.

8. Very few negative social interaction behaviors were observed in both classrooms across baseline and intervention during this study. This result indicated that the observed classrooms were well prepared with rules and responsibilities and negative behaviors were not tolerable.

9. Both teachers in the two classrooms were very cooperative in this study by being a facilitator and partner during intervention. Both of them indicated their interest to continue using the CWPT strategy in their routine activities.

10. All children involved in this study enjoyed the CWPT process, including children who were not selected as the subjects. All of them wanted to have more peer tutoring in the future.

Recommendations for Further Study

Limited past empirical studies on children with LEP primarily focused on the language development instruction and academic performance (August, 1987; Greenwood et al., 2001). Although researchers and educators all agree upon the critical role of the social competence of children, few studies have been conducted to examine
the social skills of children with LEP and how that would influence the development of the child. Using a fine-designed and well-researched peer-mediated instructional strategy, Classwide Peer Tutoring (CWPT), this study was conducted with a focus on the social aspects of children with LEP and children with non-LEP in the general education setting. Based on the results of this study, the following suggestions can be made for further study.

1. This study only focused on the social interaction behaviors between peers. Further study can be conducted by focusing on teachers’ behaviors and how that would affect children’s social skill development, especially for children with cultural and linguistic minority backgrounds.

2. Since relationship between social interaction and inappropriate behaviors of children with LEP is not the focus of the present study, future study can focus on describing and analyzing the relationship between these two variables.

3. This study indicates a reverse relationship between the intervention and parallel play. Future studies can examine the relationship between children’s parallel play and the educational setting and/or instructor’s teaching style. Further study is also necessary to investigate the relationship between parallel play and cultural differences of children.

4. This study found out that children with LEP were engaged less in peer response behavior than children with non-LEP during baseline. Further study is needed to identify the variables contributing to this difference.
5. Children with LEP in this study were primarily from Hispanic backgrounds. More data are needed for children with LEP from diverse cultural and linguistic backgrounds.

6. Random selection of subjects was not used because of small number of subjects. Further research is necessary for a large number of randomly selected subjects.

7. The data of this study were based on five weeks for Class 1 and three weeks for Class 2. A longer period of study is needed to investigate the long term effects of CWPT on social interaction behaviors.

8. This study observed the social interaction of children immediately after CWPT was implemented. A more conservative design should be developed in terms of the effects of CWPT because the spillover effects of peer tutoring could carry over at least 24 hours. Therefore, the observation may be conducted the next day after CWPT is used in order to examine its lasting effects.

9. Parents are always important in their child's social emotional development. This study did not involve parents' participation. Future research may compare the parenting style and children's social behaviors, specifically children with minority backgrounds.

10. The current study only focused on two-second classrooms with 7-8-year-old children. Children at different age levels have different patterns of social behaviors. Future study can investigate the effects of CWPT on children with a wider age range.

11. Only two children with disabilities were involved in this study, in which one was the subject for the study, but the other one was not included as a subject because of
the frequent interruption by special education classes out of the regular classroom.

Future studies should include more children with disabilities in an inclusive classroom.

12. The single subject designed was ended with the baseline condition (ABA) other than intervention condition (ABAB). Other forms of single subject design can be developed in the future. For example, a withdrawn design with ABAB can be used to avoid the ended baseline condition. Or a multiple baseline design across subjects and settings can be used to control the variable of possible learning permanence. Or these two designs can be used together to establish a stronger functional relationship between the intervention and behavior.

13. There was no control group in this study. Further research should compare the different between the experimental group and control group with a larger number of subjects.

14. The current study was conducted in two separate settings for children with LEP and children with non-LEP, thus the interaction was limited only with each group other than across groups. Further study is needed to compare the social behaviors of children with LEP and children with non-LEP in the inclusive setting.

**Summary**

The present study fits into the literature by using the similar procedure of Classwide Peer Tutoring (CWPT) in academic activities in a classroom setting. Few studies have been done to focus on social interaction behaviors of children with LEP and children with non-LEP in the general education setting by using CWPT procedures.
The results from the current study suggest that peer tutoring may be used effectively in teaching children social skills in a general education classroom.

The goal of education is to help each child reach his or her developmental potential by providing developmentally and individually appropriate programs for all children. Both the National Association for the Education of Young Children (NAEYC) and the Division for Early Childhood (DEC) of the Council for Exceptional Children (CEC) emphasize educating children with disabilities and individual needs in general education settings (Sandall, McLean, & Smith, 2000). Appropriate social skills will enable children interact positively in an inclusive setting.

It is always a challenge for professionals to develop appropriate programs to meet the diverse needs of children in the natural setting. This setting involves any place in which social interaction occurs, including the home, school, community, and other places. Therefore, there is a need in future studies to generalize the strategy of CWPT in multiple settings in addition to the regular classrooms.

Peer tutoring is only one of the peer-mediated instructions and it may not work for all children. The message sent from this study is that children with minority backgrounds have common characteristics in social and other developmental areas with children from the majority culture. They also have their individual needs. CWPT is developmentally and individually appropriate because it can be adapted for children with different age and developmental levels. The best practice is the most appropriate program for individual children. No matter how much the strategy is changed, the common goal of education never changes: help children reach their developmental potentials in all areas.
APPENDIX A

PERMISSION LETTER

FOR THE SOCIAL INTERACTION OBSERVATION SYSTEM
Permission to Use Copyrighted Material

University of Nevada, Las Vegas

I, Shirin Antia, Ph.D.,


authored by Kathryn Kreimeyer, Ph.D., Shirin Antia, Ph.D., Lisa Coyner, M.S., Nancy Eldredge, Ph.D., and Abha Gupta, M.A.


hereby give permission for the author to use the above described material in total or in part for inclusion in a doctoral dissertation at the University of Nevada, Las Vegas.

I also agree that the author may execute the standard contract with University Microfilms, Inc. for microform reproduction of the completed dissertation, including the material to which I hold copyright.

Signature Date

Name (typed) Title

Shirin Antia, Ph.D.

Representing
Social Interaction Observation System

(Kreimeyer, Antia, Coyner, Eldredge, Gupta, 1991)

The purpose of the Social Interaction Observation System (SIOS) is to provide descriptive information on the social behaviors of hearing-impaired children during their interactions with peers. Observations conducted with the SIOS should occur during a free play period of at least 10 minutes. It is important to observe children during free play periods as these are times when teacher direction is minimal and children can choose who they will play with and what they will do.

The SIOS is based on an interval observation system; a child is observed for a specified interval and then all of the listed behaviors that occurred during that interval are recorded. The SIOS obtains data for an individual child over four one-minute intervals during one observation session. We ask that a total of three separate observations, each providing four minutes of data on an individual child, be conducted. Each observation should be conducted approximately one to two weeks part.

OBSERVATION PROCEDURES:

1. Before each observation, complete SECTION IDENTIFYING INFORMATION of this form and then read through the balance of the form to familiarize yourself with the behaviors you will be asked to score and the descriptive information you will be asked to provide.
2. Locate the child whom you will observe, begin the audiotape which will cue you as the end of each on minute interval, and observe the child continuously for the full one minute period.

3. When the audiotape indicates that one minute has elapsed, stop the tape recorder, and complete the TIME 1 column of SECTION B, OBSERVATIONAL DATA. Read each behavior and record a (+) if the behavior was observed during the one minute interval and a (0) if it was not observed. It is extremely important that you score each of the 15 behaviors.

4. After you have scored each behavior, start the audiotape and begin observing the child when the tape indicated that the second minute interval has begun. Observe continuously for the second minute. When the audiotape indicates that the second minute has elapsed, stop the tape recorder, and complete the TIME 2 column of SECTION B. Repeat this process for the third and fourth minutes.
Complete section A before beginning the observation.

SECTION A. IDENTIFYING INFORMATION

Observer_______________________________ School________________

Child_______________________________ Date________________

  first name  last name

Observation  #1  2  3  (circle)

Time begin______________  Time end______________
Complete Section B after completing Section A.

Read each behavior and record a (+) if the behavior occurred during the observational interval and a (0) if it did not occur.

SECTION B. OBSERVATIONAL DATA

<table>
<thead>
<tr>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
<th>Time 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. CHILD ENGAGES IN POSITIVE INTERACTION WITH PEERS (Playing or conversing with other children, physical signs of affection, engaging in interactive games such as “catch”, “chase”.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. CHILD DIRECTS NEGATIVE BEHAVIORS TO PEER(S) (Hits, kicks, throws toys, bites, pushes, shouts, takes material or toys without permission, disrupts or interferes with play activity, uses negative sign or oral communication such as “no”, “don’t do that”, “stop it”, “dumb you”, “I’m not your friend”, “hate you”; or displays negative inflection in gestures, voice or signs.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
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<td>---</td>
<td>---</td>
</tr>
<tr>
<td>3. CHILD ENGAGES IN NONPLAY BEHAVIOR ( Watches peers, wanders, sits or stands away from other children; does not engage in play behaviors; no social contact with peers. )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. CHILD ENGAGES IN SOLITARY PLAY ( Plays alone and with materials that are different from those of other children or plays alone and uses same materials as peers but in a very different manner; no social contact with peers while playing. )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. CHILD ENGAGES IN PARALLEL PLAY ( Plays independently beside peers and engages in similar activities; social contact is only through gaze or imitation. Children do not interact with one another. )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. CHILD ENGAGES IN ASSOCIATIVE AND/OR COOPERATIVE PLAY ( Plays with peer(s) and communicates with them about the play activity (gesture, speech</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
or sign); engages in a cooperative project (i.e. building a block castle); or engages in formal games or dramatic play.)

7. CHILD ENGAGES IN POSITIVE LINGUISTIC INTERACTION (Uses recognizable words or signs during interaction, does not include unintelligible vocalizations, gestures or listening/watching.)

8. PEER(S) INITIATE INTERACTION TOWARDS CHILD (Peer attempts to begin POSITIVE interaction with child; to join child when he/she is already engaged in play; to give instructions to child; or to modify the ongoing play activity. This item does not assess the appropriateness at these attempts.)

9. CHILD RESPONDS POSITIVELY TO PEER INITIATION (When peer(s) attempt to POSITIVELY interact with the child, child responds by interacting)
positively with the peer OR by
attempts to follow instructions given
by peer(s).)

| *10. CHILD RESPONDS
NEGATIVELY TO PEER
INITIATION (When peer(s) attempt to
POSITIVELY interact with the child,
child responds by overtly refusing to
interact with peer(s); by not allowing
peer(s) to join the play; OR by directing
negative behaviors toward peer(s).) |

| *11. CHILD MAKES NO RESPONSE
TO PEER INITIATION (When peer(s)
attempt to POSITIVELY interact with
the child, child looks at the initiator but
does not interact respond.) |

| *12. CHILD INITIATES
INTERACTION TOWARDS PEERS
(Child attempts to begin POSITIVE
interaction with peers; to join peer(s)
already engaged in play to give
instructions to peer(s); OR to modify
the ongoing play activity. (This item

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does not assess the appropriateness of these attempts.)

*13. PEER(S) RESPOND POSITIVELY TO CHILD’S INITIATION (When child attempts to begin POSITIVE interaction, peer(s) respond by interacting with the child OR by attempting to follow instructions given by the child.)

*14. PEER(S) RESPOND NEGATIVELY TO CHILD’S INITIATIONS (When child attempts to begin POSITIVE interaction, peer(s) respond by overtly refusing to interact with the child; by not allowing the child to join the play; OR by directing negative behaviors toward the child.)

*15. PEERS MAKE NO RESPONSE TO CHILD’S INITIATION (When the child attempts to POSITIVELY interact with peer(s), peer(s) look at child but do not interact or respond.)
ACKNOWLEDGING AN INITIATION BY LOOKING AT THE INITIATOR IS NOT CONSIDERED A RESPONSE.
INFORMED CONSENT

General Information:
My name is Yaoying Xu. I'm a doctoral student from the UNLV Department of Special Education. I will be conducting my doctoral research at Ruby S. Thomas School located at 1560 E. Cherokee, Las Vegas. The purpose of this study is to examine the effects of Classwide Peer Tutoring (CWPT) strategy on social interactions of children with limited English proficiency (LEP).

Procedure:
All the participants will be videotaped during CWPT process and immediately after CWPT during free play activities. The children's social skills and social interactions will be assessed before, during, and after the CWPT intervention.

Benefits of Participation:
Anticipated benefits would include the increasing social interactions of children with LEP and their peers, improvement of English proficiency of children with LEP, positive peer relationships between LEP and non-LEP children, and improved performance in math, spelling, and reading for both LEP and non-LEP children.

Risks of participation in the project:
Minimal risk (physical, psychological, social or legal) involves in this study because the observation of children occurs in the natural school setting. All information gathered in this study will be kept completely confidential. To ensure confidentiality, names and any other identifying information will not be used in any reports generated from this research. No compensation for participation in this study is needed because all activities and observations will take place during the child's regular course at school. No extra time or work is required from the child or parent.

Contact Information:
If you have any questions about the study at any time, you may contact Dr. Jeffrey Gelfer at 895-1327 or me at 895-4882.

For questions regarding the rights of research subjects, you may contact the UNLV Office for the Protection of Research Subjects at 895-2794.

Voluntary Participation:
Your child's participation in this study is voluntary. You may refuse to allow your child to participate in the study in any part of this project. You may withdraw your child at any time without prejudice to your relations with the university and Ruby S. Thomas School. You are encouraged to ask questions about this study at the beginning or any time during the research study.
INFORMED CONSENT (continued)

Confidentiality:
All information gathered in this study will be kept completely confidential. All records will be stored in a locked facility at UNLV for at least three years after completion of the study. After three years, all information gathered (i.e., videotapes and other materials) will be destroyed.

Permission:
The proposal for this study has been approved by Clark County School District (CCSD) and University of Nevada, Las Vegas (UNLV). Permission for conducting this study has been obtained from Ruby S. Thomas School.

Please check and sign one of the following:

_____ I hereby authorize Yaoying Xu to observe my child and allow her access to my child’s portfolio and other files within Ruby S. Thomas School for the purpose of conducting research.

_____ I do not wish my child to participate in the study described at this time.

Signature of parent or guardian _______________________________ Date _____

Please check and sign one of the following:

_____ I give my permission for my child to be videotaped for this research study.

_____ I do not give my permission for my child to be videotaped for this research study.

Signature of parent or guardian _______________________________ Date _____

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Forma de Consentimiento

A los Padres o Guardian de: ________________________________

Información General
Mi nombre es Yaoying Xu. Soy una estudiante de nivel doctoral en UNLV en el Departamento de Educación Especial. Yo estaré haciendo mi investigación de Doctorado en la escuela Ruby S. Thomas School.
El propósito de este estudio es examinar los efectos de la ayuda educativa entre estudiantes en las aulas de clase (Classwide Peer Tutoring) (CWPT) la cual es una estrategia en interacción social entre niños que están aprendiendo de Ingles y niños que son nativos del Ingles.

Procedimiento
Todos los participantes serán grabados en video durante el proceso CWPT.
Los habilidades social van a ser evaluadas durante, antes, y después de la intervención de CWPT.

Beneficios de Participación
Los beneficios de participar incluyen aumentar la interacción social a los estudiantes de la lengua Ingles y los otros estudiantes, desarrollo del Inglés en los estudiantes no nativos de la lengua Ingles y la interacción entre los aprendientes y hablantes del Inglés. También, mejorar academicamente.

Riesgos al Participar
Minimo riego (físico, sicológico, social o legal) involucrado al participar debido a que las observaciones ocurren en las aulas de clase. Toda información adquirida en estos estudios serán mantenidos en forma confidencial. Para asegurar la confidencia, nombres y otras informaciones personales no serán usados en ningún reporte relacionado en esta investigación.

Números de Contacto Informativo
Para más información sobre este estudio por favor póngase en contacto con Dr. Jeffery Gelfer al número 895-1327 o conmigo al número 895-4882
Para información sobre el derecho del participante, por favor póngase en contacto con la oficina del programa 895-2794.

Participación Voluntaria
La participación de su hijo(a) en este estudio es gratuita y voluntaria. Usted puede rehusar a que su hijo(a) participe en este estudio o en partes de este estudio. Usted puede hacer preguntas acerca de ests estudio al principio en cualquier momento durante el estudio investigativo.
Confidencialidad
Todo información recopilada en este estudio será mantenida completamente confidencial. Todo información personal será guardada bajo llave en una localidad en UNLV por lo menos tres años después de completado el estudio. Después de tres años la información recopilada (ex. Cinta de video y otras materials) será destruido.

Por favor revisar y firmar una de las siguientes decisión:

_____ Por este medio autorizo a Yaoying Xu para observar mi hijo(a) y para que pueda obtener el portafolio y otros documentos escolares con el propósito de conducir su investigación en PPDS.

_____ Yo no deseo que mi hijo(a) participe en el estudio descrito.

Firma del Padre a Guardian ____________________ Fecha________________________

Por favor revisar y firmar una de las siguientes decisión:

_____ Por este medio autorizo a Yaoying Xu para grabar en cinta de video para este estudio.

_____ Yo no deseo que mi hijo(a) sea grabado en cinta de video en este estudio.

Firma del Padre a Guardian ____________________ Fecha________________________
APPENDIX D

TEACHER CONSENT FORM
ADULT INFORMED CONSENT

General Information:
My name is Yaoying Xu. I am a doctoral student from the UNLV Department of Special Education. I am the researcher on this project conducted at Ruby S. Thomas School located at 1560 E. Cherokee, Las Vegas. You are invited to participate in this research study, *Effects of Classwide Peer Tutoring (CWPT) for Children with Limited English Proficiency (LEP)*. The purpose of this study is to investigate the effects of classwide peer tutoring on social interactions of children with limited English proficiency. All the participants will be videotaped during the course of the study.

Procedure:
If you volunteer to participate in this study, you will be asked to receive training of CWPT for one week and then apply the CWPT strategy to your students in your classroom. You will also be asked to provide weekly pre- and post-tests to your students on math, spelling, or reading in accordance with your weekly lesson plan.

Benefits of Participation:
By participating in this study, you will have an opportunity to practice CWPT strategy, develop skills in research, and observe children as a group and individuals. You will also receive an increased understanding of young children’s social skills and their effects on social interactions of children whose native language is not English with their native English speaking peers.

Risks of Participation in This Project:
Minimal risk (physical, psychological, social or legal) involves in this study because the observation of children occurs in the natural school setting. You might be uncomfortable answering some of the questions asked. You are encouraged to discuss this with me. I will explain the questions to you in more detail.

Contact Information:
If you have any questions about the study or if you experience harmful effects as a result of participation in this study, you may contact Dr. Jeffrey Gelfer at 895-1327 or me at 895-4882.

For questions regarding the rights of research subjects, you may contact the UNLV Office for the Protection of Research Subjects at (702) 895-2794.
ADULT INFORMED CONSENT (continued)

Voluntary Participation:
Your participation in this study is voluntary. You may refuse to participate in
this study or in any part of this study. You may withdraw at any time without
prejudice to your relations with the university. You are encouraged to ask
questions about this study at the beginning or any time during the research study.

Confidentiality:
All information gathered in this study will be kept completely confidential. No
reference will be made in written or oral materials that could link you to this
study. All records will be stored in a locked facility at UNLV for at least 3 years
after completion of the study. After three years, all information gathered (i.e.,
videotapes and other materials) will be destroyed.

Participant Consent:

I have read the above information and agree to participate in this
study. I am at least 18 years of age. A copy of this form has been
given to me.

Signature of Participant Date

Participant Name (Please Print)

Please check and sign one of the following:

_____I give my permission to be videotaped for this research study.

_____I do not give my permission to be videotaped for this research
study.

Signature of Participant Date
APPENDIX E

CHILD ASSENT FORM
Child Assent Form

Dear ___________

My name is Yaoying Xu. I am a doctoral student from the Department of Special Education at UNLV. You are invited to participate in a peer tutoring research project. I'm the researcher for this project. You are chosen to participate in this project because it will help you with your math, spelling, reading, and making friends. During this study, you will have an opportunity to be assigned with another student as a pair. You and your friend will have the opportunity to teach each other math, spelling, or reading. You and your classmates will be videotaped during the course of the study. By participating in this project, you will learn each other with your classmates and make more friends.

The participation in this project is voluntary. You don't have to participate if you don't want to, and you are free to withdraw at any time during the study. You should discuss with your parents whether or not to participate before signing this assent form. Your parents will be asked to consent on behalf of you.

If you have any questions, please feel free to call me at 895-4882. I would like to answer all your questions. You may also keep a copy of this assent form.

For questions regarding the rights of research subjects, you may contact the UNLV Office for the Protection of Research Subjects at (702) 895-2794.

I have read the above information and agree to participate in this study. I also agree to be videotaped during this study.

A copy of this form has been given to me.

_________________________________________  ________________
Signature of Participant                      Date

_________________________________________  ________________
Signature of Researcher                      Date

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Hola ________________________.

Mi nombre es Yaoying Xu. Soy una estudiante del programa Doctoral en UNLV. Me gustaría invitarte a participar en un estudio sobre los efectos de la ayuda educativa entre estudiantes en las aulas de clase (CWPT) para niños con poco conocimiento del Inglés. Te invito a participar en este proyecto porque te va a ayudar con la matemática, deletreo, lectura y a hacer amigos. Durante el estudio, vas a tener la oportunidad de trabajar con otro compañero. Los dos van a poder enseñarse el uno al otro matemáticas y como deletrear. Tú y tu compañero serán grabados en video durante el curso del estudio.

Mínimo riesgo involucrado al participar debido a que las observaciones ocurren en las aulas de clase. La participación en este proyecto es voluntaria. No tienes que participar sí no quieres. Si participas y no te sientes contentos puedes salir del estudio. Debes de hablar con tus padres para decidir si vas a participar antes de firmar la forma.

Para más información sobre este estudio por favor póngase en contacto con Dr. Jeffery Gelfer al número 895-1327 o conmigo al número 895-4882.

Para preguntas acerca de los derechos del participante. Por favor póngase en contacto con la oficina de Protección del Participante al 895-2794.

He leído la información y estoy de acuerdo en participar en este estudio. También, estoy de acuerdo a ser filmado/grabado durante el proceso de esta investigación. Una copia de esta forma me ha sido entregada.

______________________________  ______________________________
Firma del participante             Fecha

______________________________
Nombre del participante
(en letra de molde)
APPENDIX F

TEACHER/STUDENT SATISFACTION QUESTIONNAIRE
Teacher Satisfaction Questionnaire

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not true</th>
<th>Somewhat true</th>
<th>Very true</th>
</tr>
</thead>
<tbody>
<tr>
<td>The students showed significant improvement in the academic through peer tutoring procedures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The students showed significant improvement in social interactions with peers:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I will continue to use peer tutoring procedures with my students in some form:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I found the manual and meetings with the researcher to be helpful:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitoring the tutorial sessions was impractical and time consuming:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awarding the points to the tutor and tutee was helpful:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall, I am satisfied with the results of peer tutoring:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would recommend this peer tutoring procedure to other teachers:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This peer tutoring is preferable to all children:</td>
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<td>This peer tutoring works better than economy token or time-out.</td>
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<thead>
<tr>
<th>Item</th>
<th>Yes</th>
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<tr>
<td>I enjoyed peer tutoring.</td>
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<td>The peer tutoring helped me to be a better student.</td>
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<td>I would like to have peer tutoring again.</td>
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<td>I would tell a friend to about peer tutoring.</td>
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<td>I liked getting points for giving the right answers.</td>
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APPENDIX G

PERMISSION LETTER FOR THE CWPT MANUAL
Permission to Use Copyrighted Material

University of Nevada, Las Vegas

I, Charles R. Greenwood, Ph. D., holder of copyrighted material entitled "Together we can! Classroom peer tutoring to improve basic academic skills" of copyrighted material entitled "Together we can! Classroom peer tutoring to improve basic academic skills" authored by Charles R. Greenwood, Joseph C. Belquadri, Judith J. Carta and originally published in Longmont, CO: Sopris West

hereby give permission for the author to use the above described material in total or in part for inclusion in a master's thesis/dissertation at the University of Nevada, Las Vegas.

I also agree that the author may execute the standard contract with University Microfilms, Inc. for microform reproduction of the completed dissertation, including the materials to which I hold copyright.

Signature

Date

Charles R. Greenwood

Name (typed)

Title

Representing

(33)
APPENDIX H

CLASSWIDE PEER TUTORING PROCESS
Classwide Peer Tutoring (CWPT) Process

(Greenwood, Delquadri, Carta, 1997)

1. Tutoring pairs

Two approaches used to pair students for CWPT:

*Random pairing*—putting students together based on chance (e.g., drawing names from a hat)

*Skill pairing*—choosing students of nearly equal abilities to work with each other, or choosing higher-skilled student to work with a lower-achievement student who needs more intensive help.

In spelling and math, tutors are provided with the correct answers, so all students are in a position of checking the accuracy of their partner’s written responses. Thus, in CWPT students are paired randomly (with answers) in spelling and math.

In reading, tutors are not provided answers because it is a direct reading task. Students’ reading ability must be considered when making pairing decisions, so students are normally paired by skill level (without answers).

2. Weekly teams

If random pairing is used, let students draw for pair assignments and then randomly assign the pairs to two teams. If students are paired by skill level, assign pairs randomly to the teams. This should create nearly equal teams.

Give the teams fun names like the “Jazz” and the “Bulls,” or let the winning team that week name the teams for the week ahead.

3. Move/Stay pairings

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After the pairs and teams are determined, decide which half of the students will move and which half will stay in their places during CWPT. Post the Teams and Partners Chart and indicate the “movers” and “stayers” on it. Change pairs and teams each week to prevent boredom and to maintain high levels of interest.

4. Subjects to teach

It is best to implement the program incrementally, one subject area at a time. It is recommended that spelling be used first, then math facts, and finally, reading.

As a general rule, consider implementing a new subject area when: (1) you have observed gains in students’ academic performances; and (2) you have observed that all students are playing the game correctly.

Divide your content material into lists of 10-30 items. Here are some considerations when developing the content lists:

1). Each item should require an overt response (e.g., orally spelling and writing words or reciting and writing math facts).

2). Items may be drawn from material already scheduled to be covered in a given week. For example, create the spelling list from vocabulary words used in the week’s regular reading lesson.

3). Items should be drawn from those noted in grade level objectives, scope and sequence charts, students’ IEPs, and texts available for the grade level.
4). The number of items on the list should be based generally on the observation that the lowest students can cover the list twice in ten minutes when they are the tutee.

5). The difficulty of the material on the list should be at 20-40% correct at pretest for the class average. Below 20% class average is too hard; above 40% is too easy.

Use the Monthly Subject List (see Figure 3) to organize the content material, then transfer one week’s list to the Weekly Tutoring List (See Figure 4). Give a copy of this weekly list to each pair of tutors. Tutors will use it to present each word and as a basis for making corrections.

5. Pretest and posttests

Pretests are evaluations of students’ knowledge made before tutoring begins. Pretests cover content materials that will be tutored in the week ahead.

Pretests provide a baseline against which you can compare the scores after CWPT and know if the program is really working. The pretests also indicate whether the content to be covered in tutoring will provide a challenge to the students.

Posttests are tests given on the content (e.g., spelling words or math problems) taught during the tutoring sessions. The items on these tests are the same as those on the tutoring lists, but presented in a different order.

Posttests provide feedback on whether students have mastered the content on the tutoring lists. The posttest should be given on the fifth day of the tutoring week in the same fashion as the pretest.
6. Recording tests scores

1). When posting students’ pretest and posttest scores, convert them from raw scores to percentages. Use the Percentage Conversion Table for this purpose.

2). Record all percentage scores on the Pretest/Posttest Score Chart. This chart is posted publicly in the classroom.

3). Record a star sign for anyone who earned 100%.

4). Determine which students gained at least 20 percentage points from pretest to posttest.

5). Determine from the Pretest/Posttest Score Chart who has earned a Happy Gram (See Figure 7) for the week by using the following criteria:

--Anyone earning 100% on the posttest.

--Anyone improving their score from the pretest to the posttest by 20% or more.
APPENDIX I

CWPT WORKING MATERIALS
"TOGETHER WE CAN!"  
MONTHLY SUBJECT LIST

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# "Together We Can!" Tutoring Worksheet

**Student:**

**Date:**

**Subject:**

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"TOGETHER WE CAN!" TUTORING POINT SHEET

STUDENT: ______________ DATE: ______________ SUBJECT: ______________

TIMES THROUGH: 1 2 3 4 5 6 7 8 9 10

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APPENDIX J

HUMAN SUBJECTS ASSURANCE CERTIFICATE
Completion Certificate

This is to certify that

Yaoying Xu

has completed the Human Participants Protection Education for Research Teams online course, sponsored by the National Institutes of Health (NIH), on 06/05/2002.

This course included the following:

- key historical events and current issues that impact guidelines and legislation on human participant protection in research,
- ethical principles and guidelines that should assist in resolving the ethical issues inherent in the conduct of research with human participants,
- the use of key ethical principles and federal regulations to protect human participants at various stages in the research process,
- a description of guidelines for the protection of special populations in research,
- a definition of informed consent and components necessary for a valid consent,
- a description of the role of the IRB in the research process,
- the roles, responsibilities, and interactions of federal agencies, institutions, and researchers in conducting research with human participants.

National Institutes of Health
http://www.nih.gov

http://cme.nci.nih.gov/cgi-bin/hsp/cts-cert4.pl 06/05/2002

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APPENDIX K

APPROVAL LETTER FROM THE PRINCIPAL
November 7, 2002

To Whom It May Concern:

I am writing this letter to support Ms. Yaoying Xu's dissertation study at Ruby Thomas Elementary School. Ruby Thomas Elementary School is a setting with students from diverse cultural and/or ethnic backgrounds. Over half of the students are bilingual or English Language Learners (ELL).

Two to three second grade classrooms will be used for the study. The ratio of ELL students and native English speakers in these classrooms are roughly one to one. The teachers from these classrooms have not applied peer tutoring in the instruction and they are willing to work with the researcher during the process of data collection.

The researcher will be using the regular instruction time (math or reading) to apply Classwide Peer Tutoring (CWPT) in the selected classrooms. Pre- and post-tests will be conducted to compare the academic achievements of students before and after CWPT is used. Social interactions between ELL students and native English speakers will also be observed to examine the effect of CWPT.

The teachers and I believe that this study will benefit our school and students in academic achievements and social skills. We also believe it will encourage more parental involvement in school activities and help parents extend their understanding of our school mission.

If any further information is needed about me or the school, please feel free to contact me at 799-5550 (telephone) or 799-1190 (fax). Thank you for your support.

Sincerely,

Dr. Demerise Hunter
APPENDIX L

APPROVAL LETTER FROM CENTER FOR EDUCATIONAL RESEARCH AND PLANNING (CERP)
September 24, 2002

Yaoying Xu
Special Education, 3014
UNLV

Dear Yaoying,

The Center for Educational Research and Planning (CERP) has approved your research proposal. The proposal should be forwarded to the UNLV IRB committee for their approval. Include your approvals letters from CERP and the IRB in your application to Paradise School.

Please note that I have forwarded electronic copies of this letter to you and Dr. Geller. I will leave a signed copy in your mailbox as well.

Sincerely,

Gregory Schraw, Ph.D.
Director of CERP
Department of Educational Psychology
UNLV
89154-3003

cc: Dr. Jeff Geller
DATE: November 20, 2002

TO: Yuoying Xu, Special Education
M/S 3014

FROM: Dr. Fred Preston, Chair
UNLV Social Behavioral Sciences Institutional Review Board

OPRS# 305S1002-510

This memorandum is official notification that the UNLV Social Behavioral Sciences Institutional Review Board has approved the protocol for the project listed above and research site change has been noted. Research on the project may proceed. This approval is effective from the date of this notification and will continue through November 20, 2003, a period of one year from the initial review.

Should the use of human subjects described in this protocol continue beyond a one-year period from the initial review, it will be necessary to request an extension. Should you initiate ANY changes to the protocol, it will be necessary to request additional approval for such change(s) in writing through the Office for the Protection of Research Subjects.

If you have questions or require any assistance, please contact the Office for the Protection of Research Subjects at 895-2794.

Cc: OPRS File
APPENDIX N

APPROVAL LETTER FROM SCHOOL DISTRICT
November 25, 2002

Yaoxing Xu
University of Nevada, Las Vegas
4505 Maryland Parkway
Las Vegas, NV 89154

Dear Yaoxing Xu:

At its meeting on Thursday, November 21, 2002, the Clark County School District’s Committee to Review Cooperative Research Requests reviewed your proposal entitled “Effects of Classwide Peer Tutoring on Social Interactions of Children With Limited English Proficiency.” I am pleased to inform you that the committee has approved your proposal, with the following provisions:

1) you must obtain the consent of the principal of Ruby Thomas Elementary School;
2) as described in your proposal, you must make provision for excluding from your videotaping children who do not wish (or whose parents do not wish them) to participate in your study; and
3) you must generate an additional parent letter for the parents of non-LEP students, informing them of the possible effects of the study on their children. The parent letter presently contained in the packet is essentially addressed only to parents of LEP students.

In addition, it is suggested that you add to your list of research questions an investigation into the effect of CWPT on the academic progress of non-LEP students, possibly by comparing the progress of non-LEP students paired with LEP students against that of other non-LEP students not paired with LEP students. Final approval of your proposal will be forthcoming when you have made the recommended changes and we have had a chance to review and approve them.

Thank you for inviting the Clark County School District to participate in your research.

Sincerely,

[Signature]

Judith S. Costa, Ed.D.
Chairman
Committee to Review Cooperative Research Requests
REFERENCES


235


boys are exacerbated under conditions of threats to self. *Child Development, 58*, 213-224.


Harter, S., & Pike, R. (1984). The Pictorial Scale of Perceived and Social Acceptance...


spelling test performance of low-income, third- and fourth-grade students.

*Education and Treatment of Children, 10*, 120-133.


the behavior of children aged 3 through 11. In G. Handel (Ed.), *Childhood socialization* (pp. 281-297). New York: Aldine de Gruyter.

VITA

Graduate College
University of Nevada, Las Vegas

Yaoying Xu

Home Address:
3241 E. Flamingo RD, #202, Las Vegas, Nevada, 89121

Degrees:
Bachelor of Arts, English language and Literature, 1987
Huazhong University of Science and Technology
Wuhan, China

Master of Education, Early Childhood/Special Education, 1999
University of Nevada, Las Vegas

Publications:
“How to Improve Chinese Students’ Reading Skills in English” in the

“An Approach to the Translation of Four-character Idioms from Chinese
to English” in Collections of College English Teaching (Beijing, 1993).

“Differences of Language Learning between Adults and Children” in the
Journal of Guilin Medical College (Guilin, 1995)

“An Alternative Undergraduate Teacher Training Program in Early
Childhood Education” in Child Development and Care (2003)

Dissertation Title: Effects of Classwide Peer Tutoring (CWPT) on Social
Interactions of Children with and without English Proficiency

Dissertation Examination Committee:
Chairperson, Dr. Jeffrey Gelfer, Ph.D.
Committee Member, Dr. John Filler, Ph.D.
Committee Member, Dr. Nancy Sileo, Ed.D.
Graduate Faculty Representative, Dr. Peggy Perkins, Ph.D.