The Effects of a Creative Dance and Movement Program on the Social Competence of Head Start Preschoolers

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Abstract

The effects of an eight-week instructional program in creative dance/movement on the social competence of low-income preschool children were assessed in this study utilizing a scientifically rigorous design. Forty preschool children from a large Head Start program were randomly assigned to participate in either an experimental dance program or an attention control group. Teachers and parents, blind to the children's group membership, rated children's social competence both before and after the program, using English and Spanish versions of the Social Competence Behavior Evaluation: Preschool Edition. The results revealed significantly greater positive gains over time in the children's social competence and both internalizing and externalizing behavior problems for the experimental group compared with the control group. Small-group creative dance instruction for at-risk preschoolers appears to be an excellent mechanism for enhancing social competence and improving behavior. The implications for early childhood education and intervention are discussed.

Keywords: dance; early childhood; social competence; behavior problems

Social competence: the capacity for children to attain social goals, engage effectively in complex interpersonal interaction, make and maintain friendships, gain entry to social groups and achieve peer acceptance, is a vitally important domain of child development (Calkins, 1994; Corsario, 1985; Denham, 1998; Eisenberg & Fabes, 1992). Peer groups constitute one of the most important socialization contexts in which children are involved (Bukowski, Newcomb & Hartup, 1996; Corsario, 1985; Harris, 1995; Hartup, 1996). Young children with poor social skills are at considerable risk for experiencing a variety of problems throughout childhood, adolescence and beyond, including rejection from their peers (Coie, Dodge & Kupersmidt, 1990; Dodge, 1983), behavior problems (Rubin, Bukowski & Parker, 1998), delinquency (Rubin et al., 1998), school failure (Parker & Asher, 1987), low self-esteem (McGuire & Weisz, 1982) and emotional maladjustment (Parker & Asher, 1987).

The preschool period is a particularly important time for the development of social skills. It is at this time when children begin to expand their social interactions beyond their parents and take on the developmental task of building relationships and acceptance with their peers (Corsario, 1985; Denham & Burton, 2003; Denham &

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Holt, 1993; Howes, 1987). During preschool, child-directed peer activities provide the context where preschool children are socialized to share, take turns, co-operate, consider others' perspectives and emotions and inhibit aggression. Preschool children's interaction with their friends promotes certain cognitive and learning skills in ways that their interaction with other individuals does not (Azmitia & Montgomery, 1993) and young children's play with good friends is more complex and cognitively sophisticated than their play with others (Howes, 1987).

Delays in the acquisition of social competence at a young age are particularly important for children's transition to elementary school. Children's social and behavioral problems during the preschool years tend to remain stable and continue to predict difficulties in the early school setting (Campbell, Pierce, March, Ewing & Szumowski, 1994; Winsler, Diaz, Atencio, McCarthy & Adams Chabay, 2000). Indeed, children's social skills and behavior problems continue to be the most important factors that go into kindergarten teachers' judgments of children's readiness for school (Carlton & Winsler, 1999; Pianta & Cox, 1999; Rimm-Kaufman & Pianta, 2000). For example, children who lack the skills to communicate their needs, recognize basic emotions and produce appropriate solutions to interpersonal conflicts have difficulty forming positive relationships and benefit less from the learning environment of school than children with stronger skills in these areas (Kaiser, Hancock, Cai, Foster & Hester, 2000; Parker & Gottman, 1989). Children's peer competence during early childhood is predictive of their later school adjustment, attitudes toward school, academic performance, peer rejection in the early school years and school withdrawal (Coie et al., 1990; Ladd, 1990; Ladd & Price, 1987). Finally, children with more friends in the classroom at the time of school entry develop more positive perceptions of school by the second month and children who do not maintain such friendships throughout the school year develop negative attitudes toward school (Ladd, 1990).

Social competence is intimately linked with children's behavior problems. Indeed, preschool children with effective social skills are better able to successfully negotiate interpersonal conflicts and are less likely to act out with others, both during preschool and later in elementary school (Olson & Hoza, 1993; Pettit & Harrist, 1993; Vaughn, Hogan, Lancelotta & Shapiro, 1992). Socially competent children are also less likely to show internalizing symptoms such as depression, withdrawal, and anxiety (Blechman, Tinsley, Carella & McEnroe, 1985; Sanson, Hemphill & Smart, 2004). Because social development is often broadly defined to include not only the acquisition of social competence, but also the origin and trajectory of externalizing and internalizing behavior problems (Sanson et al., 2004), and because ultimately behavior problems are of most concern for preschool teachers and parents, internalizing and externalizing behavior problems were investigated along with social competence in the present investigation.

Regrettably, an increasingly large number of today's preschoolers are raised in poverty (Children's Defense Fund, 2002), a swamping environmental condition that negatively affects practically all domains of child development, including social development (Horowitz, 2003). The attainment of social competence for young children in poverty is made more challenging due to the increased emotional distress, daily hassles and environmental stressors, aggression and antisocial behavior, population density, general instability and strained social service agencies that are characteristics of poverty (Garbarino, Dubrow, Kostenly & Pardo, 1992; McLoyd, 1998; Yoshikawa & Knitzer, 1997; Zill, Moore, Smith, Stief & Coiro, 1991). Children growing up in poverty are more at risk for the development of a wide range of behavioral, social and

academic problems as early as preschool than are children with greater financial advantages (Ackerman, Kogos, Youngstrom, Schoff & Izard, 1999; Arnold, 1997; Garner, Jones & Miner, 1994; Harden et al., 2000; Webster-Stratton & Hammond, 1998). The development of effective prevention and intervention programs for maximizing poor children's social competence is thus critical.

Recognition of the importance of social and emotional competence in early childhood has recently led to numerous applied prevention and intervention efforts towards increasing the social and emotional skills of preschoolers in classroom settings (Chesebrough, King, Gullotta, & Bloom, 2004; Denham & Burton, 2003; Denham & Weissberg, 2004; Hyson, 2004; Joseph & Strain, 2003). Such programs typically offer structured activities and curricula that focus on verbal and cognitive reflection regarding interpersonal encounters in the context of hands-on activities. One area that is surprisingly missing from such efforts is the role of the arts in general, and the role of dance and movement activities in particular, in fostering social competence. Brief mention is sometimes made in these programs regarding music, movement, literature, or tactile activities as being useful for teaching about prosocial behavior (Chesebrough et al., 2004; Honig, 2004; McMath, 1989; Smith, 1993), but dance programs have not been systematically examined as a vehicle for developing social competence in preschoolers in the developmental and early childhood literature. The present study tested the effectiveness of an intensive eight-week dance program for promoting the social competence of Head Start preschoolers.

Creative dance is defined as the interpretation of a child's ideas, feelings and sensory impressions expressed symbolically in movement forms through unique uses of his/her body (Dimondstein, 1971). Creative dance/movement celebrates spontaneity, originality and individuality through structured movement opportunities in which the dancer continuously invents movements according to personal preferences (Joyce, 1994). It is a method of learning about one's own personal strengths and weaknesses, and a means to explore new physical, social and emotional territories. Dance encourages innovation and honors individual experience and resources at whatever stage they arrive (Joyce, 1994).

Dance educators and therapists have long espoused the benefits of creative movement and dance for children of all ages (Bloch, 1977; Chaney & Kephart, 1986; Fleming, 1976; Gilbert, 1992; Karff, 1969; Stinson, 1998). Dance is thought to foster healthy development in a wide variety of domains, including self-image, self-body awareness, and self-esteem (Hanna, 1988; Joyce, 1994; Karff, 1969; Stinson, 1998), coping with emotional and cognitive challenges (Gilbert, 1992), concentration and focus (Stinson, 1998), tolerance and respect for diverse others (Gilbert, 1992; Stinson, 1998), emotional expression and understanding (Fleming, 1976; Karff, 1969), tension relief and emotional release (Karff, 1969), self-control (Stinson, 1998), problem solving, decision making, taking responsibility, making adjustments and adaptations and testing alternatives (Bloch, 1977; Fleming, 1976).

Many of the domains discussed above are clearly relevant components of social competence. Body awareness is seen as an essential step in becoming aware of one's own emotions and body control is the first step toward the development of behavioral self-control (Hanna, 1988; Stinson, 1998). The increased focus and concentration skills that are developed in the context of dance may generalize to other areas of social and academic competence. The increased awareness of, and respect for others that comes from dancing in groups, is thought to help children learn about personal space and social space and distance, both of which are important dimensions of effective social

interaction (Stinson, 1998). And increased self-esteem might enable children to feel confident enough to make new friends or confront difficult social situations (Hanna, 1988).

Von Rosseberg-Gempton, Dickinson and Poole (1998) found that creative dance enhanced children's co-operation, communication, belonging to a group, leading, following and awareness of others. Von Rosseberg-Gempton et al. suggest that creative dance promotes a bond between children through sharing ideas, physical space and accepting individual differences, and that this may help young children be more spontaneous and creative and lead to increased leadership and communication skills. Gilbert (1992) similarly suggests that creative dance enhances social development through boosting imaginative play and co-operative activities such as following and leading.

A number of investigators have also found positive effects of dance programs in improving a variety of different developmental outcomes for special-needs children (Caf, Kroflic & Tancig, 1997; Chamberlain-Rickard, 1982; Jay, 1991; Reber & Sherrill, 1981). Jay (1991), for example, showed that a creative dance program positively affected creativity among a diverse group of preschool children with special needs (speech/language issues, behavior disorders and mental retardation). These authors suggest that creative dance enhances children's nonverbal expression of feelings and leads to increased cognitive and kinesthetic awareness and communication skills, qualities that are fundamental building blocks for social competence.

Theoretically, dance may play a role in the development of children's social competence and prosocial behavior by serving as another cultural tool that can be internalized by the child and used for self-control and self-regulation. Much emphasis within the Vygotskian and Lurian theoretical tradition (Vygotsky, 1930, 1933, 1934/1962, 1935/1978) has been placed on the role of language in the development of children's self-control (Bronson, 2000; Diaz & Berk, 1992; Nelson, 1996; Vocate, 1987; Winsler et al., 2000). The idea is that children's behavior is first regulated by the speech of caregivers but, after speech is internalized by children, they use language in the form of private speech or self-talk as a tool for guiding their own behavior (Diaz, Neal & Amaya-Williams, 1990; Winsler, Diaz & Montero, 1997). According to Vygotsky (1930, 1933, 1934/1962, 1935/1978), any cultural tool or symbol system can be internalized and used by children as a tool for behavioral self-regulation, including music, dance and mathematics. Thus, dance, as another cultural system of symbols and meanings, may also be used by children as a mechanism for attaining behavioral self-control, which in turn would lead to improved behavior and social skills (Eisenberg & Fabes, 1992).

Although there is clearly no shortage of claims regarding the positive benefits of dance programs for children, there is, unfortunately, a dire shortage of empirical evidence to support such claims. Scientifically rigorous empirical research on the effects of creative dance/movement programs for children's development has been minimal. Most of the work cited above is based on personal observations, anecdotes or limited evidence, and has typically appeared in practitioner-oriented or popular books rather than peer-reviewed, scholarly journals. When quasi-experimental designs have been used, they typically suffer from having either no control group or an inappropriate (in-equivalent) control group. Further, self-selection effects are typically present as well, due to a lack of random assignment of children to groups. Finally, informants who rate the children's performance in the studies have typically been either the dance teachers themselves or others who are fully aware of the children's assignment to

experimental condition. Although the literature to date on dance and early childhood has certainly increased our understanding of the roles that dance may play in early childhood development, the field is clearly ready for rigorous empirical tests of hypotheses. One of the reasons that the arts continue to struggle in educational arenas today may be the lack of a solid body of empirical evidence of its benefits.

The present study, to our knowledge, is the first of its kind to use a scientifically rigorous research design to test the efficacy of an early childhood creative dance/movement curriculum. In this particular case, the population under study was a group of diverse urban children attending Head Start preschool programs, and the domains of interest were children's social competence and behavior problems. The novel methodological features of the present study that contribute to the literature in this area include: the random assignment of a homogenous group of at-risk children to experimental and attention-control conditions; multi-informant (parent and teacher) raters of children's competence before and after the curriculum; the use of an accepted and well-standardized, reliable and valid measure of children's social competence (LaFreniere & Dumas, 1995) and the use of essentially a double-blind placebo control feature in which the parents and teachers remained unaware of the children's group placement. The hypothesis tested was simply that participation in the dance curriculum would lead to greater gains in social competence for the child participants and fewer behavior problems relative to children in the control group.

Method

Participants

The participants were 40 preschool children (49 percent girls) between the ages of 39 to 62 months (age pre test $M = 50$ months, $SD = 7.39$, age post test $M = 52$ months, $SD = 7.39$) attending (full-time) a large Head Start program (serving 246 children) in a large metropolitan area in the mid-Atlantic region of the USA, along with their parents and teachers. Standard federal Head Start income eligibility requirements for United States Department of Agriculture Child Care Food Program and Free Lunch programs applied for attendance at this center so the families all had a household income below the poverty line. Two-thirds (67 percent) of the participating children were Hispanic/Latino, 16 percent African–American/Black, 5 percent of Asian descent, 7 percent of Arabic origin and 5 percent Caucasian/Other. The primary language spoken by the children and parents at home was Spanish (56 percent), English (17 percent), Arabic (12 percent), Vietnamese (5 percent), and a combination of Spanish/English (10 percent). Most (73 percent) of the children had siblings (the average number of children in the home was 2.1, $SD = .87$). The distribution of parental education was as follows: 10 percent had elementary school or less, 48 percent had 6 to 12 years of education, 33 percent had some college education and 9 percent had an undergraduate degree. The median household income for an average family of four was about $15 000. Parent marital status fell into approximately equal thirds (35 percent were married, 32 percent were separated or divorced, and 33 percent were single). The average parental age was approximately 28 years. Of all the families, 18 percent were unemployed. Only 12 percent of the children were born in the USA, and 5 percent were diagnosed with speech/language problems, according to the center records.

Procedure

Recruitment and Random Assignment. Participating children were recruited from three classrooms, each with approximately 17 children and two teachers (primary and secondary) who had been working with Head Start children for over two years. Introductory letters and consent forms (in English or Spanish) were distributed to all 52 families in these three classrooms and 43 (83 percent) returned them completed. Originally, all 43 children were randomly assigned to either the dance group or the control group, but because three children moved out of the area before the program started, the resulting numbers were 21 children in the experimental group and 19 in the control group.

Survey Distribution and Collection. The dance program started in February of the school year. Before and after the period of the dance program, parent surveys (in English and Spanish—their choice) were distributed by the teachers for the children to take home. Teacher questionnaires were administered only in English because all teachers were fluent in English. The experimenter (the first author and dance instructor, and who is fluent in English and Spanish) was often present in the classroom at drop-off and pick-up times to answer parents' questions during the survey administration periods. The parents were also invited to call the experimenter with questions regarding the survey or to have the survey read to them or to receive a replacement survey, and approximately 20 such phone calls were received. Within three weeks, 100 percent of the surveys were completed by the parents and teachers at both pre test and post test for each of the pre- and post-assessment periods. In some cases, a reminder or two along with replacement surveys were given. The dance program started a week after all pre test surveys were collected and the post test surveys were delivered one week after the end of the program.

Experimental/Control Groups. The experimental and control groups were divided randomly into two smaller groups of approximately 10 children in each group for more effective delivery of the dance instruction and attention control sessions. Both groups (experimental and control) met twice a week for 35 minutes each session for eight weeks, in the mornings in a separate room at the center. The children, identified only by their names (and not by experimental condition) were escorted out of their regular classrooms individually to come to their 'special activity' session with the instructor. The order of the groups that were assembled alternated (e.g., Experimental a, Control a, Experimental b, Control b—in fixed order) throughout the days and weeks. These procedures helped to insure that the teachers would not learn which children were in the control group and which were in the experimental group. The teachers and parents were never told which children were assigned to which group, although the parental consent form explained how the children would be randomly selected to participate in dance and 'other' activities. The center director, who was responsible for informing the teachers about the study, chose to tell the teachers only that various children would be escorted from their classrooms in small groups by the experimenter to participate in 'dance, movement and other activities'. No mention was made to the teachers about there being different groups engaging in different activities until after the study was completely over, so the teachers essentially believed that all the children were going to dance classes, and the comments they made throughout the program when children were exiting their classes for the program were consistent with that belief. It is possible

that the teachers read the parental consent form that was distributed to the children and learned of the two conditions in that way, but even if that occurred, it is clear that the teachers did not know which children were assigned to which group. For both conditions, the experimenter/dance instructor spoke predominantly in English (about 80 percent of the time) and the rest of the time the language used was Spanish.

Attention Control Condition. The control group went to the same room as the experimental group, except that during the control sessions, the children simply played together and with the experimenter, with a diverse set of the regular curriculum activities and toys (puzzles, games, blocks, balls, manipulatives, etc.) that were available in the room, not unlike what the children would be doing if they had stayed in their classroom or were out on the playground, except that they were in a smaller group of 10 and except for the presence of the experimenter. The experimenter remained in the room with the children to observe, assist and play together with the children and the toys, as desired by the children. Considerable interaction with the experimenter occurred during these control sessions. No music or dancing occurred during the control sessions; however, a fair amount of physical activity occurred in them as many of the boys often played catch or soccer with the soft balls that were available in the room. At the end of each session, the children in both groups received a strongly desired (as evidenced by the children's reactions and choices) sticker or stamp that they took back to the classroom. These tokens were the same regardless of experimental condition so there would be no obvious signs to others as to what condition the children had been assigned.

Dance Program. The dance program offered was designed by the first author to be appropriate for the children's developmental level (three- to five-year-olds). The creative dance/movement program offered structured movement opportunities that allowed the children to continuously invent movements according to their personal preferences and structured by six dance concepts according to Gilbert (1992). These dance concepts, which were incorporated into lessons and weekly themes, included (1) *Body* parts (head, fingers, hand, etc.), shapes (curved/straight, symmetrical/asymmetrical, etc.), relationships (body part to body parts, individual to groups, body parts to objects, etc.), and balance; (2) *Movement*/locomotor (walking, runing, jumping, etc.); (3) *Space*, involving place (self space/general space), size (big/small, far reach/near), level (high, low), direction (forward/backward, right/left, up/down), pathway (curved/straight/zigzag), and focus (single/multi); (4) *Time*, speed (fast/slow) and flow (pulse/pattern/breath); (5) *Force*, energy (sharp/smooth), weight (strong, light), flow (free, bonded), combinations (step-hop, two-step, creep, etc.) and nonlocomotor (staying in one place, however, this could involve bending, twisting in the same place) and (6) *Form*, recurring themes (theme in variation, canon, round), ABA (a = one phrase, b = different phrase), abstract (a geometric form, not representational), narrative (in a form of a story, representational), suite (moderate beginning, slow center, fast end), and broken form (unrelated ideas, often used for humor).

The structure of each dance class consisted of five sections: a greeting, warm-up and stretching, center, short-story and dance improvisation and a goodbye dance/cool down. During the movement sessions, the instructor was always visible to the children by either being in the middle of the circle or in front of the children. In the greeting section of the session, the group held hands in a circle to say hello. In the warm-up, stretching section, most of the time everyone would be in a circle in their magic spots

(an imaginary and special spot, assigned only by them, where the children could perform their creative movements when they were not moving around the room) for warming up and stretching. In the center section, most of the time high-energy exercises (jumping, skipping) were performed. In the short-story and dance improvisation section, the experimenter either read a story or poem from a book or told a free-standing story, and then all would do a dance improvisation based on the story. In the goodbye dance/cool down section, the children cooled down by doing stretching exercises or by playing the game, 'magic box' (an imaginary space around themselves, where the children created their own dance freely around the room without invading somebody else's magic box). The music for this section was always soothing and relaxing.

Every week, basically the same format was presented, with the exception of a change in the dance concepts, although sometimes there was a review of the dance concept from the previous week. In addition, the exercises and games for some sections would also be changed. In some exercises, especially early in the program, the children would copy the instructor's movements. This happened when they were learning the rules of the dance/game. During the rest (and majority) of the time they would create their own movements. As the weeks progressed, the dance teacher gave fewer instructions on how to do the exercises, as the children were familiar with the exercises and were able to do more tasks individually and with a partner. During the eight-week period, the children were able to use different instruments, props and music to emphasize the theme of the week. For instance, in the week going over the concept of rhythm and speed, the groups used a tambourine, xylophone and a triangle. In the week going over the concept of pathways, butterfly wings and scarves were used. Additional details regarding the dance curriculum, lesson plans, learning objectives, materials and the music used are available by contacting the first author.

Measures

Parents and teachers completed the Social Competence Behavior Evaluation: Preschool Edition (SCBE) (LaFreniere & Dumas, 1995) before and after the program. This measure is an 80-item instrument with 6-point response scales, from 'almost never occurs' to 'almost always occurs', which provides scales for overall social competence, internalizing behavior problems and externalizing behavior problems. Sixty-five percent of the parents chose to fill out the Spanish version. Reviews of the SCBE (Madle, 1995; Poteat, 1995) show that the scales have a good inter-rater reliability (.80 to 89), a good internal consistency reliability (.72 to .89) and a good two-week test–retest reliability (.74 to .87), as well as favorable convergent, discriminant and criterion-related validity. The SCBE has been used in numerous studies on diverse groups of children (Brown-Pullam, 1999; Kops, 1999; Kotler & McMahon, 2002; Pettigrew, 1998), including Chinese (Chen & Jiang, 2002), Brazilian (Bigras & Dessen, 2002) and Slovac preschoolers (Zupancic, Gril & Kavcic, 2000). Internal consistency reliabilities with this sample were very good for social competence (parent = .95, teacher 1 = .90, teacher 2 = .96), internalizing behavior problems (parent = .80, teacher 1 = .87, teacher 2 = .77), and for externalizing behavior problems (parent = .83, teacher 1 = .90, teacher 2 = .88).

The Spanish version of the SCBE used was from the original publisher. It has been shown to be very similar to the English version with comparable and favorable psychometric properties of internal consistency and test–retest reliability (Dumas,

Martinez & LaFreniere, 1998). There were no mean differences in this study in children's scores as a function of the language of form, nor did the reliability of the form vary by language. The surveys were distributed and returned to both teachers in the classroom. The scores between the primary and secondary teacher were significantly correlated (.69 for social competence, .70 for externalizing problems and .26 for internalizing problems), so children's scores from each of the teachers were averaged and the composite teacher rating scores were used in the analyses for simplification and data reduction. All three constructs were scaled such that bigger numbers reflected better functioning (better social skills and better behavior). Finally, correlations within parent ratings at pretest were $r = .76$, $p < .001$ for social skills and internalizing, $r = .65$, $p < .001$ for social skills and externalizing, and $r = .63$, $p < .001$ for internalizing and externalizing. Intercorrelations across the three outcome measures for the aggregated teacher ratings at pretest were $r = .16$, *n.s.*, for social skills and internalizing, $r = .38$, $p < .01$, for social skills and externalizing and $r = .60$, $p < .001$, for internalizing and externalizing. Finally, the correlations between parent and aggregated teacher ratings at pretest for the three measures were as follows: $r = .52$, $p < .001$, for social skills, $r = .37$, $p < .05$, for internalizing, and $r = .43$, $p < .01$, for externalizing behavior problems.

Results

Table 1 lists the parent and combined teacher pre-test and post-test scores for children's social competence, internalizing behavior problems and externalizing behavior problems for both groups of children. As seen in Table 1, even though the children were randomly assigned to groups, the experimental and control groups ended up not exactly equivalent at pretest. Slightly more children with lower social skills and greater behavior problems happened to be randomly assigned to the experimental group purely by chance, leading to small group differences on average at pre-test. More specifically, the children assigned to the experimental group were rated by their parents as showing significantly poorer social competence at pre than those in the control group, $t(38) = 2.26$, $p < .05$, and the teachers rated the experimental group children as marginally worse in social competence, $t(38) = 1.78$, $p = .08$ and internalizing behavior problems, $t(38) = 1.75$, $p = .09$ at pretest. Upon seeing these differences at pretest between the two groups in the dependent measures, we investigated whether demographic differences between the experimental and control had also emerged by chance as a result of the random assignment. There were no significant differences between the groups in terms of parental income, education, age, the number of children in the home, or their ethnicity. Because of the above, however, an analysis strategy that examines both pre- and post-scores and change over time was chosen. The data were analyzed via a multivariate mixed (multivariate analysis variance MANOVA) with time (pre, post test) and rater (parent, teacher) as within-subjects factors, group (experimental, control) as the between-subjects factor and all three outcomes (social competence, internalizing and externalizing behavior problems) as three related dependent measures.

This analysis yielded a significant multivariate group-by-time interaction, Pillai's $F(3,36) = 8.47$, $p < .001$, a significant multivariate main effect for rater, $F(3,36) = 9.88$, $p < .001$, and a significant multivariate main effect for time, $F(3,36) = 18.49$, $p < .001$. All other between- and within-subjects effects and interactions were non-significant. Follow-up univariate analyses revealed that, as hypothesized, the children

Table 1. Parent and Teacher Ratings of Children's Social Competence, Internalizing and Externalizing Behavior Problems, by Group and by Time

	Experimental Group ($n = 19$)		Control Group ($n = 21$)	
	Pre	Post	Pre	Post
Social competence				
Parent				
Mean	103.29	139.33	130.16	132.21
(*SD*)	(38.95)	(24.27)	(35.94)	(33.19)
Teacher				
Mean	109.09	132.62	127.84	133.86
(*SD*)	(38.25)	(23.32)	(26.68)	(25.06)
Internalizing behavior[a]				
Parent				
Mean	68.57	81.38	71.63	73.37
(*SD*)	(14.67)	(12.21)	(11.83)	(14.80)
Teacher				
Mean	73.93	82.57	78.94	83.60
(*SD*)	(9.87)	(7.01)	(8.01)	(6.48)
Externalizing behavior[a]				
Parent				
Mean	71.67	81.29	75.37	76.16
(*SD*)	(15.05)	(10.49)	(10.52)	(13.85)
Teacher				
Mean	81.04	86.43	86.03	87.34
(*SD*)	(13.35)	(9.10)	(7.33)	(6.52)

[a]Internalizing and externalizing behavior problems are reverse scaled, so bigger numbers reflect better functioning (i.e., fewer problems).

who participated in the dance program had made significantly greater gains from pre test to post test on all three outcomes (social competence group by time $F[1,38] = 16.25$, $p < .001$, internalizing group by time $F[1,38] = 11.28$, $p < .001$, externalizing group by time $F[1,38] = 14.75$, $p < .001$), compared with the control children. The rater effect was simply that for both types of behavior problems (but not for social competence), teachers rated the children as having more behavior problems than did their parents (internalizing $F[1,38] = 12.27$, $p < .001$, externalizing $F[1,38] = 29.59$, $p < .001$). Although these are not interpretable, given the significant group-by-time interactions discussed above, the univariate main effects for time were also significant in each case (social competence $F[1,38] = 28.06$, $p < .001$, internalizing $F[1,38] = 38.59$, $p < .001$, externalizing $F[1,38]$ 25.96, $p < .001$).

Figure 1 plots the group-by-time interaction for the parents' report of the children's social competence. As hypothesized, children receiving the dance program made considerably greater gains in their social competence from the beginning to the end of the program relative to the control group. According to the parents, the experimental

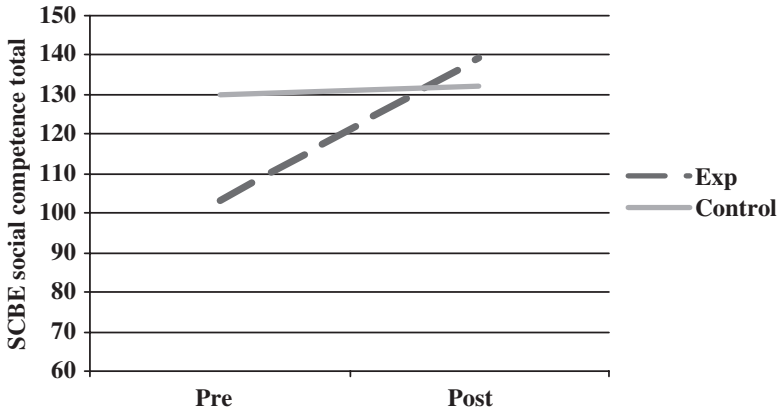

Figure 1. Parent-reported child social competence at pre test and post test, by group.

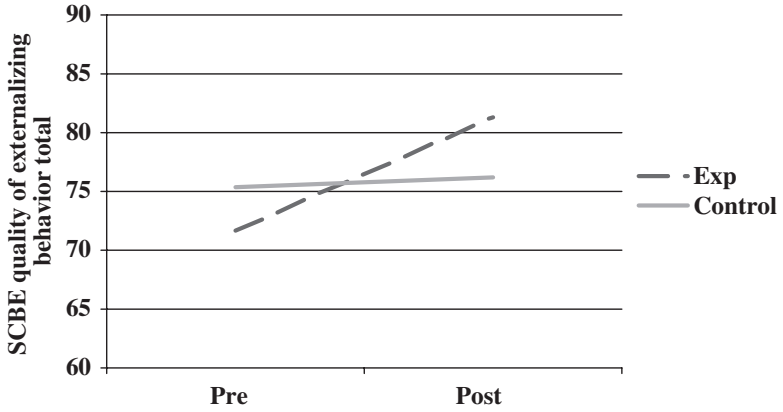

Figure 2. Parent-reported quality of child externalizing behavior at pre test and post test, by group.

group started off below the control group in social competence and surpassed the control group by the end of the dance program. As can be seen from the means in Table 1, the same basic pattern was true for the teachers' report as well. Figure 2 shows the group-by-time interaction for the parents' report of the children's externalizing behavior problems. Again, children receiving the dance program showed considerably greater improvements from pre test to post test in externalizing behavior than did the control group. The same patterns in the means were observed by the teachers, as can be seen in the table. Also, the same patterns of greater gains for the experimental group than the control group were obtained for both parent- and teacher-reported child internalizing behavior problems; however, these means were not plotted in the interest of space.

To see whether the childs' gender mattered, we ran the overall MANOVA again, including gender as another between-subjects factor and found that gender did not interact with time, or with group, nor was there a significant three-way interaction between time, group and gender. So the changes observed over time in the children's outcomes was the same for both genders (and in both groups). There was, however, an overall significant gender effect for internalizing, $F(1,36) = 4.95$, $p < .05$, and externalizing, $F(1,36) = 11.90$, $p < .001$, behavior problems, such that the girls at both times (and within both groups) showed better behavior than the boys.

Discussion

This study is the first to have examined the effectiveness of implementing a creative dance intervention for improving the social competence and behavior of at-risk Head Start preschoolers, using a scientifically rigorous design. Although dance educators and previous authors have long discussed the wide-ranging benefits of dance for young children across many different domains, including social competence (Caf et al., 1997; Dimondstein, 1971; Fleming, 1976; Gilbert, 1992; Hanna, 1988; Von Rosseberg-Gempton et al., 1998), there has not been much solid empirical evidence to support their claims. The present study provides strong scientific support for the utility of dance, music and creative movement programs in early childhood. Children who participated in the twice-a-week, eight-week dance program made both significant gains in their social skills and significant reductions in their behavior problems over the course of the program, whereas the children not exposed to the dance program did not show much improvement. The fact that children were randomly assigned to treatment and control groups, that multiple, independent raters who were blind to children's group status rated the children's competence across two different contexts, that a standardized, reliable and valid instrument was used and that an attention control group was used, rules out many alternative interpretations for these findings and suggests that it was the dance program itself that led to the positive gains observed in the children.

Although it is clear from this study that dance is beneficial for improving children's social skills and behavior, important questions remain as to the mechanisms through which the dance experience had its positive effects on children's social and behavioral competence. What was it about the dance instruction that triggered positive outcomes for these children? Was it simply that the children got more physical exercise from the dance and that made them feel and act better? Was it that the dance movements gave the children a much needed vehicle for expressing themselves? Was it that the dance activities built children's self-esteem, allowing them to take more social risks? Was it that the shared activities and physical touch brought the children closer together with their peers, built trust and fostered friendships? Or perhaps the positive behavioral outcomes that were observed in the children followed from gains made in self-regulation due to repeated experiences using dance as a tool for guiding behavior. Although the answer to these questions will have to await future research, we can offer the following informal observations from conducting the dance program.

Children appeared to show increased self-confidence in using their bodies to express themselves over the course of the program. Initially, many in the class were reluctant to do the exercises, but after one to two weeks they became more confident and began to express themselves verbally and physically and enjoy themselves and each other more. One example was a student, 'Jack', (pseudonym) who at the beginning of the class was quite withdrawn and would not participate in the class exercises. He was in his own world, would talk only to himself and did not appear to be paying attention. As the classes progressed, he started paying more attention and moving closer and closer to the activity circle and finally, fully participated at the end of the third week after he became enthralled with the nutcracker doll and dance. He came out of his shell, started dancing freely and was obviously enjoying the activities and his own movements. The teachers reported that Jack had completely changed in the classroom as well. Nothing similar in the way of large changes over time in child behavior was observed in the control group, yet there were several examples like the one above in the dance group. The dance program was designed to assist students in feeling better about themselves,

to help them connect their mind to their body. Even more important, each child's contribution was valued and the diversity of different ideas was appreciated. The students could not lose or fail but, in fact, were always winners in the sessions. The children appeared to feel very safe in the dance class environment and indeed tried many new things (i.e., they learned dance concepts, they learned to tell a story read by the instructor through their own bodies, to do different shapes (circles, letters, numbers) with their body parts, to compose a musical piece on the xylophone while the rest of the children spontaneously danced accordingly to the music) and to express themselves and share things emotionally and socially through dance; things that perhaps they had not been able to do or communicate in the regular classroom, especially with the significant language barriers present in their diverse classrooms. These factors, it seemed to the instructor, helped the children to develop stronger self-images, self-concepts, and self-esteem. In addition, as the dance classes progressed, the children were getting to know each other better. They were sharing the same special experiences and challenges and this appeared to create bonds between them. For example, although the children were reluctant to hold hands with each other at the beginning of the program, by the end they were spontaneously holding hands all the time and enjoying touching each other in socially appropriate and positive ways. This bond and familiarization between the children may have been partly what helped improve their social skills and behavior in their classrooms. The program appeared to help children take greater social risks, for example, composing a musical piece, creating a dance according to their own interpretation or choosing their own partners for dances (the partners chosen were not from their regular classrooms), all without the fear of being criticized. Props, costumes, and music gave the experimental children the opportunity to expand their awareness in ways that are not traditionally associated with academic learning. The props and costumes not only stimulated their visual sense, but also gave them the ability to pretend and be creative with these items and imagine that they had become, say, a butterfly or a nutcracker. These elements seemed particularly important and impressive for these at-risk Head Start children. It appeared that some of their needs were met through the dance program and the impact translated into better social skills and behavior in the regular classroom setting.

It is important to note that music was a very important element of the dance program as well. Music accompanied most of the dance activities. Music might also have been a cultural tool internalized and used by the children for enhanced behavioral self-regulation (Ducenne, 2004). Early childhood music education is another area full of claims regarding the benefits of early musical experience, but light on rigorous empirical evidence (Ducenne, 2004; Price, 2004). The combined and individual effects of music and dance on young children's behavioral regulation and social competence are certainly interesting and important topics for future research.

One unlikely but potential threat to the validity of this study would be if the teachers and parents went out of their way and learned who was in the control group and who was in the experimental group, and biased their responses on the SCBE systematically in favor of the dance group. This seems unlikely, however, because we took many precautions to ensure that the teachers and parents did not acquire knowledge of the children's group status. Evidence that the teachers did not know who was in the control or experimental groups came from overhearing statements between the teachers and the children. For example, often when the experimenter picked up the control children to go to the 'activity' room, the teacher would say something about going to 'dance classes' and the experimenter never overheard the children correcting their teachers'

statements. The parents, who were not explicitly told about their child's group placement, could have conceivably asked the children if they had been dancing and biased their responses systematically on the survey to favor the dance group. However, there is no reason to believe that these parents, even if they did concern themselves with the children's group status, would bias their answers to favor the dance group. Anecdotal evidence from this center suggests that these Head Start parents tend to prefer that their child's preschool experiences focus more on academic, language and literacy activities rather than the arts and thus, if anything, they might have been biased against dance. Nevertheless, the fact that this possibility could not be definitively ruled out is a limitation of the study.

Recalling the characteristics of the particular population studied here may not only help qualify the extent to which these finding may generalize to other groups but may also help in explaining the strong and positive findings in the first place. The young children studied here were very much at-risk, low-income preschoolers attending Head Start in a resource-impoverished inner-city environment. They were largely from recent immigrant families with limited parental education, and the majority of children (83 percent) had significant language barriers in the school context and the larger mainstream culture. Without a well-developed language to be used as a tool for both interpersonal problem solving in the form of social speech and intrapersonal problem solving in the form of private speech (Winsler et al., 1997), it may have been particularly challenging for these children to express themselves verbally, thus resulting in high levels of frustration and perhaps acting out. Creative dance/movement lessons may have provided the children with additional means of expression, using their bodies to communicate their ideas, thoughts, emotions and feelings.

Although the findings are clear regarding the positive effects of creative dance and movement programming for children's social competence and behavior among the high-risk population studied here, it is not at all clear whether such large effects would be seen with other samples of children with fewer risk factors and no language barriers. It is possible and indeed likely that smaller effects would be observed if similar dance programs were to be offered to more advantaged children. The extent to which these findings can be replicated with other populations of children and early childhood settings is a critical issue that needs to be addressed in future research. Also, the replication of the current findings, even within the same Head Start population but with a much larger sample of children, is an important step for future research. Furthermore, it will be important in future research to measure theoretically inspired mediator or process variables (such as self-esteem, self-control or closeness with peers) to learn more about why dance has positive effects on children's social competence. For example, pre- and post-direct classroom observations of children's peer interactions and closeness or self-regulation could be conducted and self-reported or teacher-reported measures of children's self-esteem could be included in future replications of this work.

The results of this investigation are important on a larger scale as well, as they add strong evidence that young children's social competence and behavior problems, at least among at-risk, extremely low-income, urban, minority children, are responsive to early intervention (Denham & Burton, 2003). The fact that other scholars have found externalizing behavior problems to be fairly stable in early childhood (Campbell et al., 1994; Smith, Calkins, Keane, Anastopoulos & Shelton, 2004), at least among largely Caucasian middle-class children not participating in interventions, does not mean that such outcomes are not modifiable through intervention. It would appear from this study

that the difficulties in social skills and behavior problems experienced by this at-risk community population of largely recent immigrant families in an urban Head Start setting are indeed amenable to modification with intervention. As there are multiple developmental origins, patterns and trajectories for children's early social and behavioral problems (Acosta, 2003; Jones & Forehand, 2003; Shaw, Gilliom, Ingoldsby & Nagin, 2003), it is possible that social and behavior problems in other populations and settings may be less responsive to this type of dance intervention. Clearly, the impressive results found here are in need of replication.

In terms of implications for practice and policy, the present investigation provides clear, strong and scientifically rigorous evidence for the importance of dance and creative movement programs in early childhood, at least for programs serving Head Start populations. In the current climate where budgets are tight, it is often the educational programs that have to do with the arts that are slated first for removal. The results of the present study reveal that dance education can have a significant impact on Head Start children's social competence and behavior. Social competence and effective behavioral control are vital elements for children's school readiness and adjustment to elementary school (Carlton & Winsler, 1999; Pianta & Cox, 1999), as well as their later peer interaction and both academic and personal success (Corsario, 1985). The attainment of social competence is particularly important for children from low-income families who are already at risk for a host of behavioral, academic and social problems (Arnold, 1997; Harden et al., 2000; Webster-Stratton & Hammond, 1998; Yoshikawa & Knitzer, 1997). This study suggests that programs in dance/creative movement, and perhaps in the arts in general, should be supported and expanded to, at a minimum, similar Head Start programs and possibly to other settings as well, should these findings be replicated with different populations. Head Start and other early childhood programs should seriously consider expanding the role of dance and movement in their curriculum. Furthermore, current policy and intervention efforts aimed at increasing the emphasis upon socio-emotional learning in early childhood (Chesebrough et al., 2004; Denham & Burton, 2003; Denham & Weissberg, 2004; Hyson, 2004; Joseph & Strain, 2003) may also benefit from further investigating the role that dance and creative movement can play in early childhood curricula and interventions.

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