

The Promotion of Sociomoral Growth Through Physical Education: Field Testing of a Curricular Model

Gloria B. Solomon

Abstract

The purpose of this study was to implement and evaluate a curricular model designed to enhance sociomoral and psychomotor development in physical education. The curricular content and implementation strategies were grounded in structural developmental theory. Twenty-one 1st and 2nd grade children, who attended a university laboratory school were instructed using the curricular model. The children were tested three times over the course of 12 months on four variables: distributive justice reasoning, perceived competence, fitness, and locomotor skills. Results indicated that children improved in distributive justice reasoning and locomotor skills from pre-test to post-test. Multiple regression analyses demonstrated that post-test distributive justice scores were predicted by perceived competence. Actual ability, defined as fitness level and locomotor skills, did not predict distributive justice reasoning. Results are discussed in terms of the efficacy of the curricular model and adaptations that warrant consideration.

The subject of physical education has existed in the public school curricula for over 150 years. Even before the city of Boston began to require daily exercise for school children in 1853 (Lumpkin, 1998), wide discussion on the purpose, objectives, and outcomes of quality physical education occurred. The thrust of the “New Physical Education” movement promoted education through the physical (Mechikoff & Estes, 2001). The outcome of this movement included the promotion of multiple competencies via physical education. Three educational domains

emerged, which currently serve as a cornerstone of teacher preparation programs throughout the United States. These are labeled the psychomotor, cognitive, and affective domains.

While the emphasis in most physical education programs centers on psychomotor and cognitive maturation, the affective domain is largely neglected. This occurs despite early physical educators’ support of direct inclusion of affective components. For example as early as 1831, professional physical educators requested the serious consideration of character development as integral to the physical education curricula (Solomon, 1997a). Some advocated that the true educational contribution of physical education lay in its ability to improve not only motor skills, but also ensure affective outcomes. This message reverberated for many years without concrete attention until McCloy (1930), in his classic contribution to the first issue of the *Research Quarterly*, declared that physical education would benefit the development of students if specific affective outcomes were addressed. In more recent times, Park (1983) a renowned sport historian, along with other esteemed professional members of the American Academy of Kinesiology and Physical Education, delivered a formal appeal to physical educators and coaches. In short, Park (1983) noted that physical activity environs may serve as prime arenas for teaching about and impacting the moral behavior and ethical judgment of students. These noted professionals identify moral development as one affective outcome that can, and should, be addressed in physical education class. While it can be assumed that competent physical educators plan a holistic curriculum including an integration

of the affective domain, research suggests that in order to enhance sociomoral development, this content must be infused directly in the planning (Bredemeier, Weiss, Shields, & Shewchuk, 1986; Romance, Weiss, & Bockoven, 1986).

Because moral development is assumed to occur in the context of social interactions, the term sociomoral development is gaining popularity among researchers. Sociomoral development refers to the striving for an optimal balance between the self and others by attending to one's own needs and the needs of others simultaneously (Haan, Aerts, & Cooper, 1985; Solomon, Watson, Battistich, Schaps, & Delucchi, 1990). With this idea and in line with the theoretical perspective guiding this research endeavor, the term sociomoral development will be utilized hereon. By definition, sociomoral development connotes that children are motivated to explore their social world and create positive relations with others (Battistich, Watson, Solomon, Schaps, & Solomon, 1991). Distributive justice is one specific sociomoral concept that is particularly relevant for children aged 5 through 10. Distributive justice refers to the fair allocation of goods within a specified group (Damon, 1975; Enright, Franklin, & Manheim, 1980).

Child psychologists have extensively studied prosocial behaviors and sociomoral skills consisting of interpersonal behaviors. Before the age of five, research indicates that children are capable of demonstrating various forms of prosocial behavior including empathy (Strayer, 1986), nurturance (Rheingold & Emery, 1986), helping, and sharing (Doescher & Sugawara, 1989; Shepard & Koberstein, 1989; Zahn-Waxler & Radke-Yarrow, 1990). These results suggest that children are capable of both comprehending and exhibiting sociomoral skills by the time they enter elementary school.

In the recent past, several scholars have assessed the potential of enhancing sociomoral development in the context of physical education and sport through a theoretical prescription (Bredemeier, et al., 1986; Gibbons, Ebbeck, & Weiss, 1995; Hellison, 1994; Miller, Bredemeier, & Shields, 1997; Romance, et al., 1986;

Solomon, 1997b). Their work demonstrated that through sound theoretical planning, children's sociomoral development could be enhanced in the physical activity environment.

Much of this line of research in the area of sociomoral development employed a structural developmental paradigm in order to design and evaluate programs (Bredemeier, et al., 1986; Gibbons, et al., 1995; Romance, et al., 1986; Solomon, 1997b). This interactional position acknowledges both the influence of environmental factors and the individual's cognitive capabilities in explaining sociomoral growth. Accordingly, knowledge regarding sociomoral skills is gained through a sequence of cognitive-based maturational stages in conjunction with a continual evolution of thinking. Structural developmental theorists contend that the premise behind sociomoral development is the experiencing of cognitive disequilibrium in social contexts (Haan, et al., 1985; Kohlberg, 1976; Piaget, 1932; Rest, 1973). When children are exposed to new experiences, either naturally or through deliberate learning experiences that do not fit into their current cognitive structure, they undergo a brief period of disequilibrium whereupon new cognitive structures develop to accommodate the new information. Hence, dialoguing about sociomoral issues or sociomoral reasoning is the basis for promoting sociomoral development. Sociomoral skills are involved in any exchange between individuals, which serves to positively or negatively impact on the well-being of at least one participant (Bredemeier & Shields, 1987; Haan et al., 1985).

Bredemeier and her colleagues (1986) conducted a field experiment in a summer sport camp that subscribed to a physical education model. More specifically, this camp offered educational exposure to a wide array of sports and games in a non-competitive environment as compared to traditional youth sport settings, which typically focus on both skill development and competition. The sample consisted of 84 children, ages 5 through 7, who were predominantly middle class and Caucasian. Results indicated that children in

the structural developmental group improved in their sociomoral development, operationalized as distributive justice, significantly more than children in the control group. The authors concluded that sociomoral development could be enhanced in physical education contexts by incorporating theoretical instructional strategies. Sociomoral themes that might naturally occur in physical activity contexts, such as fairness, sharing, aggression, and distributive justice, were intentionally employed in the curriculum. Children were then encouraged to dialogue about the dilemma and come to a consensus regarding the resolution. For example,

...during the 'sharing' week, an instructor might put out fewer balls than required for an activity so that children would need to find ways to resolve the shortage. After the onset of interpersonal disruptions, the instructor would work to engage the involved children in a dialogue about the best way to resolve the dispute. (Bredemeier, et al., 1986, p. 217)

Two similar studies were conducted among samples of predominantly white, middle class children in physical education classes (Gibbons, et al., 1995; Romance, et al., 1986). Results among 4th through 6th grade children revealed that those children in the structural developmental condition improved in sociomoral reasoning significantly more than the control group. Romance et al. (1986) also evaluated effects of the intervention on motor skill development. Children in the experimental condition improved in gymnastics as compared to the control group; children in the control group improved their basketball skills relative to the experimental group. No differences in fitness improvements were discovered.

Thus evidence does exist that programs, which implement approaches based on structural developmental theory, are successful in enhancing the sociomoral development of children. The major limitations of these studies are in the homo-

geneity of the samples, which were predominantly white and middle class and the short duration of the interventions, generally less than 2 months. Despite these prior attempts in creating curricula and strategies designed to influence the affective domain, there is no evidence that physical educators are systematically integrating sociomoral development components into their curriculum. Furthermore, researchers have not provided practitioners with the necessary tools to enhance sociomoral development in the physical activity environment. In order to ameliorate these documented deficiencies in methodology, a curricular model was developed that sought to integrate sociomoral and psychomotor skill development. The most adequate means of studying children is through a developmental approach, which focuses on changes in cognitive structures (i.e., sociomoral skills) and physical capabilities (i.e., psychomotor skills) (Weiss & Bredemeier, 1983). This model integrates children's cognitive development with their motor skill development in order to arrive at activities designated as optimal for stimulating both sociomoral and psychomotor skills.

Furthermore, this project endorses a peer-oriented approach that originated from the structural developmental paradigm. This approach represents a recent evolution that contrasts with the traditional adult-centered sociomoral development process. In short, a peer-oriented stratagem emphasizes the role of the child as an active agent in the construction of morality (Battistich, et al., 1991). Solomon and his colleagues (1990) identified three criteria for the promotion of sociomoral development in conjunction with principles of a peer-oriented approach: child self-direction, task salience, and community membership. Child self-direction assumes that children are most likely to accept and uphold values and rules that they have helped to develop. Task salience infers that children gain feelings of competence when tasks they undertake are meaningful and important to them. Community membership presumes that when children feel

they are valued members of the community, they will be motivated to accept and uphold the community norms and values. If these three conditions are met, sociomoral skills can be taught in academic contexts such as physical education. Therefore, these three conditions served as the philosophical foundation of the curricula described in this study.

Attempting to understand and influence sociomoral development in the physical activity environment begs additional considerations. As Solomon et al. (1990) mentioned in their statement on minimal conditions necessary for enhancing sociomoral development, when children deem that tasks are meaningful, subsequent increases in mastery and competence accrue. Therefore, it is logical to include an examination of perceived physical competence and overall self-worth when emphasizing sociomoral development in the physical activity setting. The potential relationship among perceived physical competence, actual physical competence, and sociomoral development might afford the researcher additional insight into the relationship between physical activity and sociomoral development. To date these relations have not been scientifically investigated and consequently served as a basis for the evolution of this curricular model.

The purpose of this study was to implement and evaluate a curricular model designed to enhance sociomoral and psychomotor development in physical education. While it is assumed that competent physical educators plan a holistic curriculum including an integration of the affective domain, research suggests that in order to enhance sociomoral development, this content must be infused directly in the planning. A key issue was the inclusion of relevant variables not only to assess improvement psychologically and physically, but also to attempt to decipher relations between sociomoral development and other salient psychological and physical variables.

Two research questions guided this inquiry. One, will children exposed to a specially designed

curriculum improve in distributive justice, perceived competence, fitness, and psychomotor skills? Two, what affective or psychomotor variables or combination of variables will serve to predict sociomoral development, operationalized as distributive justice reasoning, at the end of the 9-month intervention? These two questions were answered utilizing the following methodology.

Method

Participants

The sample consisted of 21 children in grades one and two who attended a university laboratory school. This school serves as a site for children in grades one through four to experience smaller classes and have more individualized instruction and testing. The children in 1st and 2nd grade attended physical education class together. There were 9 girls and 12 boys who ranged in age from 6 to 9 ($M = 7.60$, $SD = .73$) at the outset of the study.

Measures

Four measures were utilized to assess affective and psychomotor development. These tools were administered at several points during the course of an academic year.

Adapted Distributive Justice Scale (Enright, Franklin, & Manheim, 1980; Solomon, 1997b). The Distributive Justice Scale (DJS) was administered to assess one dimension of sociomoral development, that of reasoning about positive or distributive justice. Enright based this instrument on the positive justice model put forth by Damon (1975). Central to the sociomoral maturation of children is positive justice, which encompasses behaviors such as the fair distribution of rewards, sharing, turn taking, and helping. Damon posited that distributive justice develops through a series of six distinct, age-related stages. Administration of the measure involves the oral presentation of a dilemma based in either a camp or school setting. Each of the six stages is compared with each other stage in a paired comparison format. Thus, 15

pairs are created. In addition, three pairs are repeated and served as reliability checks. If the child did not match at least two of the three repeated items, his/her data were eliminated. Each child was issued a score that related to his/her level of reasoning. In a series of studies, construct validity and reliability were confirmed among children aged 5 through 11 (Enright, Bjerstedt, Enright, Levy, Lapsley, Buss, Harwell, & Zindler, 1984). Solomon (1997b) adapted the DJS to depict a sport venue, hence the Adapted DJS. In an earlier study, Solomon and Bredemeier (1999) found that in physical activity environments, the original DJS stories (one in a camp setting, one in a classroom setting) were less salient for children.

Self-Perception Profile for Children (SPPC: Harter, 1985). In order to assess children's perceptions of competence, the SPPC was implemented. The SPPC is a multidimensional measure of children's perceived competence. The six subscales of perceived competence include: scholastic competence, social acceptance, physical competence, physical appearance, behavioral conduct, and global self-worth. For the purposes of this investigation, the physical competence and global self-worth subscales were utilized. Physical competence refers to children's perceptions of their athletic ability; global self-worth provides a broad depiction of overall competence. For each sub-scale there are six items, which evaluate children's perceptions on a four-point Likert scale. This measure is designed for young children and therefore, is individually and orally administered. A thorough psychometric evaluation of this instrument demonstrates adequate validity and reliability (Harter, 1985).

Fitnessgram (Cooper Institute, 1993). The Fitnessgram is a comprehensive assessment tool implemented nation-wide for fitness testing of children and youth. In the current study, it was used to assess children's muscular strength and endurance. The three scores obtained included curl-ups and push-ups, measured via number of repetitions, and the trunk lift, measured in inches. Validity and reliability were ascertained (Cooper

Institute, 1993). Raw scores were obtained and then converted to z-scores for standardization purposes.

Test of Gross Motor Development (TGMD: Ulrich, 1985). The TGMD was implemented to measure children's locomotor skill capabilities. Each skill is evaluated via specified performance criteria and tabulated as a 1 (mastered) or 0 (not mastered). The locomotor skills assessed included the run, gallop, hop, leap, horizontal jump, skip, and slide.

Procedures

The preliminary procedures for this investigation consisted of four phases which took place during the two years prior to beginning the intervention. The fifth phase involves the actual field testing of the curricular model. Thus, there was a total of five phases of model creation.

Phase One. Phase one consisted of assessing children's capacity to comprehend sociomoral concepts. Over 200 empirical studies in child, developmental, and sport psychology were systematically read, outlined, and organized in a detailed grid. The resultant outcomes demonstrated that young children are capable of performing prosocial acts including sharing, helping, empathy, and cooperation (Dunn & Munn, 1986; Jennings, Fitch, & Suwansky, 1987; Poresky, 1990). This provided verification that it was appropriate to foster these social skills among early elementary school children.

Phase Two. Phase two explored children's psychomotor skill development. This process was enacted through a thorough review of the relevant literature, theory, and models of motor development. The overwhelming evidence suggested that children in the early elementary years are capable of learning and refining various gross motor skills including running, hopping, skipping, jumping, and sliding. Furthermore, while common motor tasks such as throwing, catching, dribbling, and kicking require a higher degree of motor coordination they are identified as age appropriate for early elementary school children.

Phase Three. Phase three encompassed the task of identifying and creating physical activities that stimulate the acquisition of both sociomoral and psychomotor skills. Activities were designed and chosen based on the research conducted in the first two phases. After the exhaustive reviews of both the sociomoral and psychomotor literature, the key findings were subjected to a systematic analysis. During this phase, activities were identified or created which logically matched the two skill sets. Thus, eight themes were created which served to pair parallel moral and motor skills.

Phase Four. Phase four involved creating the actual curriculum. The lesson plan for each day included review of the concepts using varied features such as “word of the week,” a warm-up exercise using a brief physical activity to engage students regarding the lesson focus, and the main activity which served to provided maximum activity and affective engagement via specially chosen and designed tasks. Table 1 contains a sample lesson plan.

Phase Five. Phase five entailed implementing the curriculum at a laboratory school. Model testing in this specific laboratory school was chosen for two reasons. One, it allowed the researcher to select, train, and oversee the physical education teachers. Two, it allowed the researcher to control and implement the model without interference by school district curricular mandates.

The principal of the laboratory school was contacted and support for this project obtained. Parents were addressed in a group regarding the curricular and research parameters. All agreed to allow their children to participate and subsequently completed an informed consent form. Physical education classes met 4 days per week for 45 minutes over the course of an academic year. During the first 3 weeks of the fall semester, testing was conducted in the following order: Fitnessgram, TGMD, ADJS, and SPPC. Each child was tested individually by graduate students trained in the use of each instrument.

The lead researcher taught class the first semester. After proper training in the structural developmental strategies and curricular content, a 5-month process, a graduate student served as physical education instructor. Training was conducted via biweekly staff meetings where assignments were issued, strategies discussed, and an instructor-training manual completed.

The curriculum consisted of eight themes (See Table 2). Each theme was represented by an affective and a psychomotor content area. The themes were theoretically and empirically generated through the process described in phase one and two of model creation. These eight themes were repeated each semester with an adaptation of activity content. During the last 4 weeks of the spring semester, post-testing took place using the identical protocol described above for pre-testing. During the next fall semester, follow-up testing was conducted once again to determine whether any changes found from the original pretest-posttest intervention were evidenced when no intervention was in progress (during the summer months).

Design

The sample for this ongoing investigation was comprised of 21 1st and 2nd grade children who attended physical education class together. A control group was not included in the design of this study for two primary reasons. One, the class structure was such that 1st and 2nd grade children shared the physical education class thus making it difficult to identify a comparable class arrangement. Two, the goal of this project was to follow these children over their 4 years at this lab school such that longitudinal examinations can be rendered.

The major limitation of a one-group design relates to the confirmation of internal validity. Using a one-group pretest-posttest design, one can affirm that if the post-test scores significantly exceeded the pretest scores, the subjects improved

Table 1. Sample Lesson Plan

Starpoint School—Physical Education Curriculum
Grades 1-2

Theme 3: Trust & Respect

Lesson 4: Dribbling

Word of the Week: Trust

Physical Objectives:

dribble various balls
bounce and pat for accuracy

Social Objectives:

trust in self
trust in others

Equipment:

globe balls
playground balls
jump ropes
music

Testing:

SPPC

I. Warm-up Activities (10 minutes)

Introduction Activities:

Review - What is trust?
 When do you trust others?
 What did it feel like?

Trust in Me; in pairs and holding hands, children move about gym walking, running, hopping, etc, goal is not to bump into anyone; emphasize safety and trust

II. Skill Development Activities (25 minutes)

[after each activity have children perform a fitness event to music; pendulum rock, jump in-and-out, etc.]

Pairs: issue one playground ball and one hoop

a. Inside Hoop Dribble: one child stands outside hoop and dribbles the ball inside the hoop; partner counts consecutive bounces; switch after 2 minutes; repeat

b. Around Hoop Dribble: one child stands dribble inside the hoop while walking around the hoop; partner counts consecutive bounces; switch after 2 minutes; repeat

c. Bounce Pass: children stand on either side of hoop; goal is to bounce pass ball to partner; continue

d. Palm Ball : in Italy, children play a game called “Palm Ball”; explain where Italy is and show it on globe ball

Rules: make one long line with jump ropes across gym; in pairs, children bounce and pat ball to partner with palm, partner catches ball and bounces and pats back to partner; continue back and forth, catching ball in between “pats”

III. Concluding Activities (10 minutes)

Did you trust your partner to “pat” ball carefully to you? Did you do the same?

How could you change this game from Italy to make it more fun? Show adaptations if time permits.

Table 2

Eight Affective and Psychomotor Skill Curricular Model Themes

<u>Affective Skills</u>	<u>Psychomotor Skills</u>
Personal Space	Formations & Boundaries
Self Image	Fitness
Trust	Throwing & Catching
Sharing	Kicking & Dribbling
Caring	Locomotion
Helping	Tumbling & Gymnastics
Cooperation	Cooperative Games
Problem Solving	All of the Above

(Thomas & Nelson, 2006). However, this design does not allow for causal explanations; one cannot conclude that the intervention caused the changes in performance. In order to strengthen the use of the one-group design, additional data were collected. Specifically, the typical one-group design is that of the pretest-posttest design. However, the design used for the current study allowed for pre-testing, post-testing (after the intervention), succeeded by follow-up testing which occurred almost 4 months after the post-test period. Thus, it was possible to determine if sociomoral and/or psychomotor development continued to improve, declined, or remained the same after the intervention.

To answer the first research question, a one-group design was implemented as described above. Specifically, two one-factorial repeated measures analyses of variance with pre-test, post-test, and follow-up tests as the three levels of the independent variable were conducted. Although establishing causal connections is still precarious, this design did allow for further examination of the resultant outcomes. To answer the second research question, a multivariate regression analysis was conducted to determine which variables, affective or psychomotor, best predicted sociomoral development. This analysis was performed on the data collected from the post-test assessment period.

Results

The purpose of this study was to implement and evaluate the effectiveness of a curricular model created to enhance both sociomoral and psychomotor development among early elementary physical education students.

Affective Improvement

The first question queried whether children exposed to a specially designed sociomoral development curriculum would demonstrate improvement in specified affective skills. A one-factorial repeated measures analysis of variance (ANOVA) with pre-test, post-test, and follow-up test as the three levels of the independent variable was performed. Results suggested that the sample as a whole improved significantly in distributive justice reasoning, $F(2,28) = 4.48, p < .05$. Follow-up paired sample t-tests, $t(2,16) = 2.36, p < .05$, showed that distributive justice significantly improved from pre-test ($M = 1.06, SD = .44$) to post-test ($M = 1.47, SD = .81$), a 9-month intervention. However, there were no significant changes from post-test to follow-up ($M = 1.60, SD = .70$) test, $t(2,16) = .69, p = .50$. Thus, by integrating the follow-up testing period to alleviate the limitation of a one-group pretest-posttest design, the stability of the noted post-test improvements in sociomoral development was verified. Specifically, it was demonstrated that no

increases or decreases in distributive justice reasoning from the end of the intervention to the beginning of year two of model testing were evidenced. Furthermore, there were no mean pre-post improvements in perceptions of physical competence or global self-worth.

Psychomotor Improvement

A second one-factorial repeated measures ANOVA (pre-test, post-test, and follow-up test) was conducted with results demonstrating that the children improved significantly in locomotor skills, $F(2,36) = 17.81, p < .01$. Subsequent paired sample t-tests, $t(2,20) = 2.79, p < .05$, showed that locomotor skill development significantly improved from pre-test ($M = 21.95, SD = 3.02$) to post-test ($M = 23.70, SD = 3.38$). Locomotor skill development declined from post-test to follow-up ($M = 20.15, SD = 2.62$) test (4 months later), $t(2,20) = 6.49, p < .01$. It was ascertained during the follow-up testing period that children's locomotor skills failed to improve and, in fact, decreased, during the summer months. Mean fitness scores did not significantly improve from pre- to post-test.

Prediction of Sociomoral Reasoning

The second series of statistical analyses were conducted in order to assess the influence of both affective and psychomotor variables on sociomoral reasoning at the end of the intervention period. Specifically, what affective or psychomotor variables or combination of variables will serve to predict post-test levels of sociomoral development, operationalized as distributive justice reasoning? To determine which variables addressed in this curricular model best predicted sociomoral development, a multiple regression statistical procedure was conducted (Pedhazur, 1982). The overall regression indicated a significant source of performance explanation among the four variables, $R^2 = .52, p < .05$, explaining 52% of the variability in post-test distributive justice reasoning. This represents a very large effect size (Cohen, 1962). Further analyses were

conducted to assess the relationships between the predictor and outcome variables. The partial correlations, shown in Table 3, represent the relationships between each predictor and the outcome variable while controlling for the effect of all remaining predictor variables. The standardized beta coefficients and t-values are also reported. These results show that children's perceptions of physical competence and global self-worth are the only significant predictors of post-test distributive justice reasoning once other predictors are held constant. Specifically, perceived physical competence is negatively related and global self-worth is positively related to distributive justice reasoning. The two psychomotor variables do not contribute to the prediction of this affective component.

Discussion

The purpose of this study was to implement and evaluate a curricular model designed to enhance sociomoral and psychomotor development in physical education. In this study, children were pre-tested on three affective variables (distributive justice reasoning, physical competence, global self-worth) and two psychomotor variables (fitness and locomotor skills). Then a 9-month curricular intervention was implemented, followed by post-testing, and follow-up assessments conducted nearly 4 months later on the aforementioned four variables. Two questions guided this exploratory inquiry into the effectiveness of this specifically designed curriculum.

The first question examined whether children exposed to a specially designed sociomoral development curriculum would demonstrate improvement in affective and psychomotor skills. Results indicated that improvements occurred in sociomoral development, specifically distributive justice reasoning, and in locomotor skill development. A common fear among physical educators is that attending to affective growth might impede psychomotor skill development. These results may serve to tentatively allay this trepidation in that attention granted to sociomoral growth in this

Table 3

Beta Coefficients and t-values among Post-test Predictor and Outcome Variables

	<u>Distributive Justice Reasoning</u>	
	<u>Beta Coefficient</u>	<u>t-Value</u>
<i>Affective Variables</i>		
Physical Competence	-.452	-2.14*
Global Self-Worth	.446	2.22*
<i>Psychomotor Variables</i>		
Fitness	.292	1.54
Locomotion	.363	1.77

* $p < .05$

curricular model did not infringe upon locomotor improvements. Clearly further longitudinal analysis using this model must be conducted in order to definitively confirm this finding.

However, fitness and perceived competence improvements were not produced. There are two potential explanations for this finding. One, the measurement of fitness was limited to muscular strength and endurance. If cardiovascular endurance and body composition assessments were also included to typify a more comprehensive definition of fitness, this might have impacted the resultant outcomes. Two, previous research shows that when elementary school children are exposed to specialized fitness programs, both fitness and self-concept assessments improve (Fine, 1994; Greene & Ignico, 1995). Other work in this area demonstrates a consistent relationship between fitness levels and self-concept (Calfas & Taylor, 1994; Fox, 1994; Gruber, 1986). The curricular content covered by this model contained one unit on fitness and subsequently fitness activities were interspersed into most class sessions. However, the curriculum was not exclusively designed as a fitness program. This might explain why results do not parallel those reported in the above studies. This clearly warrants further exploration. In answer to

the first research question, both sociomoral and psychomotor improvements were evidenced. However, it is puzzling that locomotor skills declined from post-test to follow-up testing. It is suspected, but not proven here, that since this curricular model targets locomotor skill development, this group of children may have benefited from the deliberate teaching of locomotor skills during physical education class. Perhaps during the ensuing summer months, they were not exposed to planned locomotor skill development activities, but rather experienced unstructured play experiences or more sedentary activities. Clearly continued examination is required to more fully understand this outcome.

A second question attempted to identify if the selected affective or psychomotor variables served to predict sociomoral development at the end of the 9-month intervention. Interestingly, children's perceptions of physical competence and global self-worth both served to predict post-test distributive justice reasoning scores. Specifically, perceived physical competence was negatively related to distributive justice reasoning. Thus, those children who perceived themselves to be higher in physical ability demonstrated a lower level of sociomoral development. This finding is potentially troubling considering that a major

objective of physical education is the promotion of physical competencies. Due to the exploratory nature of this research question, it is difficult to decipher a justification for such a result. Clearly further investigation into the model components and teaching strategies is warranted before any concrete explanations are offered. On the other hand, global self-worth was positively related to distributive justice reasoning. Thus, how a child feels about him or herself as a person is directly related to how s/he believes others should be treated. Those students who reported higher perceptions of global self-worth prioritized fairness among children. Although this relationship has not heretofore been subject to investigation, it is logical and therefore an attempt at replication will ensue. Summarily, global self-worth was related to levels of sociomoral development at the end of the 9-month intervention.

The practical implications gleaned from this phase of investigation provide some preliminary points of application for the educator. The major applicable finding is that including an emphasis on the affective domain, in this case sociomoral development, may not impede psychomotor performance. Many researchers posit that physical activity contexts are ripe arenas for the inclusion of affective development (Park, 1983; Romance et al., 1986; Shields & Bredemeier, 1995; Solomon, 1997a, Solomon, 2004). Support for this assumption is confirmed via the results of the current study.

The children in this sample will continue to be exposed to this specially designed curriculum through the 4th grade. This longitudinal approach will allow for the continued exploration of curricular effectiveness. The final goal of this project is to refine this curricular model and make it available to physical educators who would like to include affective content in the physical education curriculum on a regular basis.

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Dr. Gloria B. Solomon is a faculty member within the department of Kinesiology and Health Science at the California State University, Sacramento.