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PEDAGOGY

Upper Elementary School Students' Attitudes Toward Physical Education in Skill-Themes and Multiactivity Approaches

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Abstract

The purpose of this study was to investigate the influence of the physical education curricular approach used in teaching upper elementary school students on students' attitude toward physical education. An Approach Guide was developed to assist in categorizing school approaches as skill-themes (ST) or multiactivity (MA). Twenty schools meeting designated participation criteria were selected. An attitude instrument (Phillips & Silverman, 2012) was administered to fourth- or fifth-grade students (N = 313) in physical education classes in schools, 10 schools in each approach category. Multivariate analyses of variance were performed with the class as the unit of analysis for attitude sub-factor variables and attitude main factors, each using approach as the independent variable. A t-test was completed for overall attitude between the two approaches. Means and standard deviations were calculated for the sub-factors, main factors, and total attitude by curriculum, school, grade, gender, and approach. Analyses suggest that fourth- and fifth-grade students enjoy physical education and think it is important. No significant differences were found between grades, genders, or approaches. The range of attitude scores within the schools was wider in the MA approach than in the ST approach and may be a result of teacher influence. Larger standard deviations within schools

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using the MA approach may also indicate more varied attitudes toward physical education than in schools using the ST approach.

Many of today's young people are inactive, not fit, and overweight. Overweight and obesity are global issues. In the United States, obesity is of considerable clinical and public health as well as financial (Krebs, 2003) concern. America's obesity rate is triple the rate from one generation ago (U.S. Department of Health and Human Services, 1996). In 1996, obesity affected nearly 20% of all children and adolescents in the United States. Inactivity contributes to obesity and threatens to reverse the progress in reducing deaths from cardiovascular diseases (Centers for Disease Control and Prevention, 2008). Physical activity should be encouraged among children, as it is assumed this behavior will carry into adulthood.

Children who are overweight and obese can have a negative view of their participation in physical activity and may choose a more sedentary lifestyle (Digelidis, Kamtsios, & Theorakis, 2007). One way to combat obesity is to increase physical activity levels in school-based physical education (McCullick et al., 2012; McKenzie et al., 2003). It has been suggested that if a student has a positive experience in physical education and develops a positive attitude toward physical activity, the student is more likely to participate in physical activity outside of school (Solmon & Lee, 1996). Conversely, students showing unfavorable attitudes toward physical education may hesitate to participate in physical activity outside of school (Carlson, 1995; Ennis, 1999; Portman, 1995). The attitude that elementary school children develop toward physical education, therefore, is a crucial ingredient in the fight against the obesity epidemic in America.

Attitudes are a key part of everyday life, influencing people in many ways and in many areas of their lives. Allport (1968) considered attitude distinguishable and essential as a concept, while Ajzen (2005) described it as a disposition to react positively or negatively to a person, object, institution, or event. These attitudes toward objects are determined by a person's belief systems (Silverman & Subramaniam, 1999), and though people tend to hold many beliefs about an attitude object, only a small number of beliefs can be attended to at any given time (Ajzen, 2005). These salient beliefs form a person's attitude (Ajzen & Fishbein, 1980). Should the salient beliefs about the attitude object be positive, a positive attitude will

result toward the object. If not, a negative attitude will result toward the object

It is somewhat difficult to change attitude (Eagly & Chaiken, 1993), yet it is possible. Since beliefs can be changed over time (Ajzen & Fishbein, 1980), a situation once perceived by a person to be negative can be changed should positive experiences take place (Zimbardo & Leippe, 1991). Conversely, a negative experience in a situation formerly perceived as positive might create an attitude change. Attitude changes can occur when the reasons for the individual's unfavorable attitude toward the attitude object are discovered and required modifications made (Silverman & Subramaniam, 1999). Attitude characteristics can be used to explain attitude theories.

The attitude theories that guided this study were the Theory of Reasoned Action (TRA; Fishbein & Ajzen, 1975) and the Theory of Planned Behavior (TPB; Ajzen, 1991). Both theories posit that attitudes and traits are implied by human behavior, but that their influence can be ascertained through study of "broad, aggregated, valid samples of behavior" (Ajzen, 1991, p. 181). Both theories also assume that people usually behave in a reasonable manner (Ajzen, 2005).

The TRA states a person's attitude guides the person's behavior (Fishbein & Ajzen, 1975), and includes the individual's attitude toward the behavior, or beliefs about likely consequences, and their beliefs about the expectations of others, called subjective norms. The person's behavioral intention is influenced by their attitude toward an object and their subjective norm to the behavior. The TPB extends the TRA to include beliefs about possible barriers to performing behaviors, or perceived behavioral control, an individual's perceived ease or difficulty in performing the behavior. The perceived ease or difficulty contributes to forming the person's behavioral intention. People have to believe that they have the "means and opportunities" to do so (Ajzen, 2005, p. 118).

Students' attitudes play an influential role in physical education (Solmon, 2003), and as such, student attitude toward physical education has been the subject of a number of studies through the years (Carlson, 1995; McKenzie, Alcaraz, & Sallis, 1994; Phillips & Silverman, 2015; Silverman, 2017; Subramaniam & Silverman, 2007). The findings from these studies suggest that the majority of

students enjoy physical education and feel it is important (Carlson, 1995; Phillips & Silverman, 2015). A viable goal would certainly be for students to find physical activities they enjoy and learn through school. Though the majority of children may enjoy physical education, still many student do not. These students may be in physical education class because they have to be, not because they want to be (Graham, 2001). Finding out why some children do not enjoy physical education will assist physical educators in modifying practices to ensure maximum participation and enjoyment.

Several variables affect student attitude toward physical education. These student entry characteristics include grade, gender, and skill level (Silverman & Subramaniam, 1999). Because good data on attitude are difficult to get for students younger than fourth grade, it has been suggested that the steady decrease in attitude toward physical education begins in fourth grade (Phillips & Silverman, 2015). Beginning with fourth and fifth grades, research has suggested an overall positive student attitude toward physical education, with fourth graders showing significantly higher attitudes than fifth graders (Phillips & Silverman, 2015).

There is a difference in attitude between girls' and boys' feelings about physical education. Research has suggested that girls have a more positive attitude toward physical education than boys do at the primary level (Birtwistle & Brodie, 1991) and derive more enjoyment from aesthetic and social activities (Smoll & Schultz, 1980), while boys have more positive attitudes toward activities involving strength (Williams, 1988), risk, and challenge (Folsom-Meek, 1992). This trend tends to reverse, however, and boys tend to show an overall higher positive attitude beginning around puberty (Wersh, Trew, & Turner, 1992).

Not participating in physical activities may stem from a lack of skill (Ennis, 1996). Student skill level influences student attitude toward physical education. Low-skilled students experience physical education differently from higher-skilled students (Graham, Holt-Hale, McEwen, & Parker, 1980; Rikard & Banville, 2006; Silverman, 1993; Solmon & Lee, 1996; Subramaniam, 2010). Research has suggested that low-skilled students have a more negative attitude toward physical education than higher-skilled student do, resulting in avoidance types of behavior (Carlson, 1995; Portman, 1995). With

successful participation, low-skilled students may see their perceptions, and hence attitudes, improve (Carlson, 1995; Portman, 1995). If educators were to use appropriate practices in physical education classes, perhaps the success rates of low-skilled students would improve and hence improve attitudes.

Student attitude is not only affected by student entry characteristics but also by contextual factors. One contextual factor that has been shown to influence student attitude toward physical education is curriculum (Subramaniam & Silverman, 2002). There are many approaches for physical education curricula and many ways to teach within those approaches. The curricular approach used may have an effect on children's attitude toward physical education. Approaches may use competition in various forms.

The use of competition in physical education programs is pervasive in the United States (Bernstein, Phillips, & Silverman, 2011). Curricular approaches emphasizing competition promote both positive and negative outcomes. They might be used to promote physical activity, develop skill, sportsmanship, and prepare students for a competitive world or might exclude students from enjoyment and success, as well as from interest in participating in a presented activity (Bernstein et al., 2011; Ntoumanis, 2001).

One approach that uses competition as an integral part is the multiactivity (MA) model. The MA model is typified by short units of activity. The typical unit might be 2 to 3 weeks. Many of the same skills or sports are taught yearly. The intent of the MA model is to expose students to a variety of sports (Himberg, Hutchinson, & Roussell, 2003). Another commonly used model in elementary physical education is the skill-themes (ST) approach. In physical education, returning frequently during the school year to teach a movement skill or concept provides children with variations of a skill theme. The context of the return to the teaching of a particular skill may vary from the same context, to slightly different, to very different. It is the development of skills in a variety of situations that leads to competency and diversity. Many factors can be manipulated within the theme. Skills or movements are often combined within the ST approach, which increases the challenges of a task. This progression often gives way to a new skill. When progressions are used appropriately, from simple to complex, teachers assist children in

becoming skillful movers. Scaffolding, or linking a series of lessons in a skill theme, takes place (Graham, 2001).

The purpose of this study, therefore, was to investigate the influence of the physical education approach used in teaching upper elementary school students on students' attitude toward physical education, including by grade and gender. We know much about secondary students' attitudes toward physical education (Bernstein et al., 2011; Carlson, 1995; Ennis, 1996; Montalvo & Silverman, 2008; Subramaniam & Silverman, 2007), but our knowledge of elementary students' attitudes toward the same is limited.

Method

This study used a multistep process. These steps were (a) develop a guide to categorize a school's physical education curricular approach; (b) participants (seek out, entry into, and verification of schools using the ST or MA approaches); (c) instrumentation; (d) questionnaire administration; and (e) data analysis.

Categorizing the Physical Education Curricular Approach

To verify that a school used a particular physical education curricular approach (i.e., ST or MA), a guide assisted the lead researcher in assessing curricular approach components and designating the degree to which the approach was implemented. A Curricular Approach Guide (CAG) was created. This CAG went through several phases, drafts, and piloting.

The purpose of Phase 1 was to produce a document containing elements appropriate to good teaching. Based on input from physical education pedagogy professors, this list included elements and characteristics that should exist in any quality physical education program. The type of curricular approach was not considered at this time.

Phase 2 separated the elements into two lists, one relevant to ST and another relevant to any "other" program. Guidance in the modification of the ST list was received from a university professor and author/expert in ST. This produced a smaller set of observable characteristics, fine-tuning the categories. During this phase, various types of rubrics and methods to quantify observations were developed, including a checklist, a holistic rubric, a percentage-of-lesson scale, and a Likert-type scale. The use of the Likert-type scale from

1 (*low-characteristic never present*) to 5 (*high-characteristic always present*) was chosen, with placement within the scale based on lesson observation, teacher interview, and documentation. A 4 for a characteristic would indicate that most of the time during the lesson, or within the yearly plan, the characteristic was observed/documented. A minimum of a 4 would need to be selected for each characteristic for the program to be considered using an ST approach.

During Phase 3, piloting began with the CAG. Four physical education teachers were contacted, and their fourth- or fifth-grade classes were observed, with an interview following the observation. The CAG was able to assist in the determination of an ST approach, but it was not clear how other approaches could be determined. During this phase, it was felt that dichotomizing ST or MA was more appropriate, as opposed to ST or "other."

To dichotomize an ST curricular approach from an MA approach, Phase 4 included placing characteristics of an MA approach on paper with the same Likert-type scale. This provided a document with characteristics of both approaches. After discussions with a National Board–certified physical education teacher who had a doctorate in physical education and substantial experience in elementary schools, there were still characteristics more consistent with good teaching/pedagogy than with a particular approach. Such items were deleted. Accompanied by a university professor experienced in elementary physical education as an additional observer, this version of the CAG was piloted. It was found that the CAG now clearly assisted in categorizing an MA approach.

To further assist with the ST approach categorization process, the researchers created additional teacher interview prompts. Prompts pertained to the focus (theme or context) of the observed lesson and the foci of the lessons preceding and subsequent to it. Additional prompts referred to teacher use of instructional strategies and any use of competitive activities. For example, teacher responses such as "we do about 8 or 9 lessons of (a given sport) in the unit with the games at the end of the unit" would be indicative of an MA curricular approach, while "we did throwing and catching, or sending and receiving, with round objects today, and we did throwing and catching with footballs a couple of weeks ago" would indicate an ST curricular approach. Another example indicating an ST approach

would be "we'll do badminton, volleyball, and pillow polo in a theme of striking with elements."

In Phase 5, with the modifications in place, the researchers piloted the CAG in a different school to look for teacher responses indicative of an ST approach. According to the teacher and his lesson plan book, the most recently worked on skill was throwing. Using the interview prompts, the researchers asked the teacher when he most recently worked on throwing, prior to the date indicated in the plan book. The teacher responded, "We worked on throwing a few classes ago, and also three weeks ago, using different types of balls each time." When asked about instructional strategies, the teacher responded with "guided discovery and problem solving." These responses are compatible with an ST curricular approach.

The CAG continued to be piloted in an additional school with an expert in skill themes and adjunct professor and the lead researcher as observers. Based on observation and the teacher interview, agreement was reached that the lesson and curricular approach would be categorized as ST. A discussion occurred, however, over two characteristics on the ST list, the use of scaffolding and progression. Since it was agreed that perhaps these could be used in programs other than ST, these items were eliminated and a new version of the CAG created.

Piloting concluded with the final version of the CAG in another school. With observation and documentation, an MA curricular approach was agreed upon. The consistent agreement between the experts in elementary physical education and in the ST approach and the lead researcher indicated the ability of the CAG to assist in accurate categorization of a curricular approach as ST or MA.

Participants

A purposive sample of public and private (or independent) schools within the northeastern United States was used for this study. Specifically, schools that had been recommended by administrators, state professional organizations, and university professors because of their reputations for using one of the physical education curricular approaches under investigation were selected. In addition, physical educators whose curricular approaches were familiar to one researcher were recruited for participation. The participants

under investigation were fourth- and fifth-grade students ($N = 313$) at these schools, who ranged in age from 9 to 11 years old. There were 171 females and 142 males. Roughly half of the students were Caucasian, with Latinos, African Americans, and other minority students composing the other half. Physical education at the schools was taught by a certified physical education teacher, the only physical educator to teach the classes being studied. The teachers needed at least 4 years of experience at the elementary level for inclusion in the study. Pedagogical skills are gained slowly and through experience (MacPhail & Hartley, 2016). Longevity of 4 years is likely to include tenure, the passing of occupational socialization, and an established curriculum, including the ability to discern between curricular topics. Ten classes were included for each approach (i.e., ST and MA), with class sizes ranging from 10 to 40 students. The socioeconomic status of the schools was diverse.

Institutional review board approval was granted by the researchers' institution. After agreeing to be observed and interviewed, the contacted teachers were observed teaching a class on two occasions, along with postobservation interviews. Teachers were asked to provide the researchers with documents such as a lesson or unit plan or a curricular map. This allowed the researchers to gain a realistic picture of the program. Questions for teachers following the observations were taken from prompts. Classes were observed via the CAG to assist in categorization of the program as using an ST or MA curricular approach or neither.

At the schools that were categorized as using an ST or MA approach, the teachers were asked if they would be willing to participate in the study. If so, their permission was attained in writing. In addition, their principal was asked for approval in writing for the school to participate in the study. If the school could not be categorized as using an ST or MA approach, the teachers were thanked for their time.

A return to the research site was made to schools whose programs were categorized as using the ST or MA approach. The purpose of the study was explained to the classes, and physical education teachers were provided with written consent forms for students and parents/guardians with participant's rights and with an assent form for minors for their parent or guardian to read, sign, and return.

Upon completion of the teachers' receipt of signed consent and assent forms, a visit was made to each school to implement the attitude instrument.

Instrumentation

The attitude instrument adapted for and whose scores were validated for upper elementary school students by Phillips and Silverman (2012) was used in this study. This instrument, based on the TRA and TPB, measures fourth- and fifth-grade children's attitude toward physical education. It is a 16-item questionnaire with items ranked on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The questionnaire is divided into factors of curriculum and teacher, with sub-factors of cognitive-curriculum (CC), cognitive-teacher (CT), affect-curriculum (AC), and affect-teacher (AT). There are four questions for each of the four sub-factors. Eight questions are negatively worded. Examples of questions include "the activities I learn in my physical education class are important to me" (CC), "my physical education teacher makes class important to me" (CT), "the activities I do in my physical education class get me excited about coming to class " (AC), and "my physical education teacher makes learning in my physical education class unpleasant for me" (AT).

Data Collection

Instructions for taking the attitude instrument (i.e., questionnaire) were given to the students prior to distribution of the instrument. Any student questions were answered. A demographics information sheet asking for their grade and gender, numbered for identification, was attached to the questionnaire. This was submitted with the completed questionnaire. Any student choosing not to participate in the study had an activity provided for them by the physical education teacher. Students were reminded of the purpose of the study and instructed how to take the questionnaire. They were also reminded that it was an anonymous questionnaire, that their teachers would not know who completed a questionnaire nor what any answers were, and were asked to be as honest as possible with

their responses. Students placed their completed questionnaires and demographics sheets into a folder facedown to remind them of the anonymity. The students also were told that they were free to stop taking the questionnaire at any time.

Data Analysis

The four sub-factors (i.e., cognitive-curriculum, cognition-teacher, affect-curriculum, affect-teacher), total enjoyment, total cognition, and total attitude were the dependent variables in the analysis. Data were entered into Microsoft Excel, uploaded into SPSS, and reverse-coded. Descriptive statistics were determined for the sample and by school, curricular approach, gender, and grade for each dependent variable. Due to the interdependency within each class, the unit of analysis for all difference testing was the class (Silverman & Solmon, 1998). Multivariate analysis of variance (MANOVA) was performed, with the curriculum as the independent variable and the four attitude sub-factors as dependent variables. A second MANOVA was conducted with the total enjoyment and total cognition as dependent variables. Finally, a *t*-test was conducted for total attitude between the two curriculum approaches.

Results

The results for the study were examined by curricular approach, gender, school, and grade for overall attitude, cognition, and affect, and examined for each of the four sub-factors. All results are related but supply different levels of detail. These findings provide an analysis of upper elementary school student attitudes.

Students in both curricular approaches (i.e., ST and MA) combined had an overall positive attitude toward physical education. Descriptive statistics showed a mean for all students of 68.41 (SD = 10.83) out of a possible score of 80. Table 1 displays means for the four sub-factors and main factors for all students, with the sub-factor scores ranging from a low of 16.75 (SD = 3.28) for CT to a high of 17.41 (3.26) for AT. Among the main factors, the affective mean (34.74, SD = 5.48) was higher than the cognitive mean (33.67, SD = 6.08).

Table 1
Means: All Students, Attitude Sub-Factors, and Main Factors

Factor	*M*	*SD*	*N*
CC	16.92	3.25	313
CT	16.75	3.28	313
AC	17.33	2.87	313
AT	17.41	3.26	313
Cognitive Sum	33.67	6.08	313
Affective Sum	34.74	5.48	313
Total attitude	68.41	10.83	313

Note. CC = cognitive-curriculum; CT = cognitive-teacher; AC = affect-curriculum; AT= affect teacher.

Overall means at the different schools ranged from 59.63 (*SD* = 12.76) at School 13 (MA school) to 76.30 (*SD* = 3.34) at School 18 (MA school; Table 2). Overall means by gender in schools ranged from a low of 57.87 (*SD* = 14.5) at School 13 (MA school) to a high of 76.13 (*SD* = 3.4) at School 18 (MA school) for females and from 60.5 (*SD* = 21.21) at School 1 (MA school) to 77.50 (*SD* = 3.00) at School 9 (ST school) for males. Within the curricular approaches, the ST schools' means ranged from 62.13 (*SD* = 10.86; School 5) to 72.58 (*SD* = 7.54; School 7). The MA schools showed a wider range from 59.62 (*SD* = 12.76; School 13) to 76.3 (*SD* = 3.34; School 18).

Among the main factors, cognition ranged from 28.51 (*SD* = 6.58) at School 13 (MA school) to 38.2 (*SD* = 1.75) at School 18 (MA). The affect scores ranged from 31.00 (*SD* = 5.77) at School 6 (ST) to 38.10 (*SD* = 1.72) at School 18 (MA). Among the sub-factors, CC scores ranged from 14.37 (*SD* = 3.38) at School 13 (MA) to 19.00 (*SD* = 0.94) at School 18 (MA), with CT scores ranging from 14.14 (*SD* = 3.89) at School 13 (MA) to 19.2 (*SD* = 1.47) at School 18 (MA). The AC scores ranged from 15.37 (*SD* = 3.05) at School 6 (ST) to 18.9 (*SD* = 0.73) at School 18 (MA), and the AT scores from 15.14 (*SD* = 4.65) at School 13 (MA) to 19.2 (*SD* = 1.31) at School 18 (MA).

Table 2

Means: Total Attitude by Curricular Approach, School, Grade, and Gender

		Skill-themes schools (Grade level)										
Gender		**1 (4)**	**2 (4)**	**3 (4)**	**4 (4)**	**5 (4)**	**6 (5)**	**7 (4)**	**8 (4)**	**9 (4)**	**10 (4)**	**Total**
Female	*M*	71.90	67.00	63.33	71.00	70.64	62.88	68.78	71.00	59.86	75.29	68.16
	SD	3.84	7.57	9.33	11.06	7.41	13.18	9.23	6.33	22.03	4.86	4.82
	N	10	12	6	6	11	8	9	15	7	7	91
Male	*M*	68.67	61.46	74.25	66.70	64.14	61.38	74.87	71.00	77.50	69.57	68.94
	SD	11.30	9.70	5.32	14.76	12.08	8.80	5.46	7.91	3.00	10.37	5.6
	N	12	13	4	5	7	8	15	9	4	7	84
Total	*M*	70.14	64.12	67.70	69.00	68.11	62.13	72.58	71.00	66.27	72.43	68.55
	SD	8.72	9.03	9.46	12.39	9.71	10.86	7.54	6.97	19.31	8.33	5.10
	N	22	25	10	11	18	16	24	24	11	14	177
		Multiactivity schools (Grade level)										
Gender		**11 (4)**	**12 (4)**	**13 (4)**	**14 (5)**	**15 (4)**	**16 (5)**	**17 (5)**	**18 (5)**	**19 (4)**	**20 (4)**	**Total**
Female	*M*	75.50	59.60	57.88	75.63	71.17	67.56	71.67	76.13	71.78	68.78	69.57
	SD	4.51	22.81	14.50	4.96	11.36	9.18	9.63	3.40	5.07	9.71	6.39
	N	4	5	16	8	6	9	6	8	9	9	80
Male	*M*	60.50	76.00	62.18	71.77	72.25	64.25	64.91	77.00	74.75		69.29
	SD	21.21	3.54	9.81	8.77	4.57	13.52	9.51	4.24	2.06		6.34
	N	4	5	11	13	4	4	11	2	4		58
Total	*M*	68.00	67.80	59.63	73.24	71.60	66.54	67.29	76.30	72.69	68.78	69.44
	SD	16.30	17.65	12.76	7.64	8.88	10.22	9.83	3.34	4.50	9.71	6.19
	N	8	10	27	21	10	13	17	10	13	9	148

Table 3 contains means by approach and by gender, broken down for the four sub-factors, main factors, and total attitude. Among the main factors, the highest and lowest cognition factor scores were 34.24 (SD = 2.94) and 33.45 (SD = 3.55) for males within ST and MA approaches, respectively. Among the affect scores, 35.84 (SD = 3.25) for males within the MA approach was the highest, while 34.36 (SD = 2.49) for females in the ST approach was the lowest. Total attitude was slightly higher at 69.44 (SD = 6.19) for schools in the MA approach than the ST approach (68.55, SD = 5.10), with males scoring higher (69.29, SD = 6.34; 68.94, SD = 5.61) than females in similar fashion (69.57, SD = 5.10; 68.17, SD = 4.82).

Differences in Attitude

For the four attitude sub-factors (i.e., CC, CT, AC, AT), a MANOVA showed no significant differences for curricular approach, Wilks' Lambda = .746, $F(4, 15) = 1.28$, $p > .05$. A MANOVA for the attitude main factors, cognition and affect, also showed no significant difference, Wilk's Lambda = .759, $F(2, 17) = .702$, $p > .05$. Last, a t-test examining difference in overall attitude between the two curricular approaches showed no significant difference for the curricular approach, $t(18) = .46$, $p > .05$.

Discussion

This study was one of the first to investigate the effect of physical education curricular approach on student attitude toward physical education. Specifically, this study investigated differences in upper elementary school children's attitudes toward physical education when they were enrolled in classes taught through the ST or MA approaches. It also investigated these attitudes by gender. Findings in these areas may ultimately lead to more positive physical activity habits for a lifetime.

The results of this study suggest that, similar to previous research with upper elementary school grade levels (Phillips & Silverman, 2015), students overall enjoy physical education (M = 17.33, SD = 3.25) and think it is important (M = 16.92, SD = 16.92). The students at the schools in the study were highly diverse and from various cultural and socioeconomic backgrounds covering four states. This diversity supports a broad perspective that students enjoy physical education. This is not surprising, given the grade levels.

Table 3
Means by Curricular Approach by Gender, Sub-Factors, Main Factors, Overall Attitude

Curricular approach		Males							Females						
		CC	CT	AC	AT	Cog	Aff	Total attitude	CC	CT	AC	AT	Cog	Aff	Total attitude
ST	*M*	17.23	17.01	17.45	17.25	34.24	34.70	68.94	16.89	16.90	16.88	17.48	33.80	34.36	68.17
	SD	1.39	1.69	1.27	1.57	2.94	2.76	5.61	1.52	1.18	1.32	1.26	2.55	2.49	4.82
	N	10	10	10	10	10	10	10	10	10	10	10	10	10	10
MA	*M*	16.57	16.88	18.00	17.83	33.45	35.84	69.29	17.23	16.98	17.67	17.69	34.21	35.36	69.57
	SD	2.15	1.72	1.79	1.78	3.55	3.25	6.34	1.90	1.92	1.30	1.62	3.72	2.77	6.39
	N	9	9	9	9	9	9	9	10	10	10	10	10	10	10
Total	*M*	16.92	16.95	17.71	17.53	33.87	35.24	69.11	17.06	16.94	17.28	17.58	34.01	34.86	68.87
	SD	1.77	1.66	1.52	1.66	3.17	2.98	5.80	1.69	1.55	1.34	1.41	3.11	2.61	5.55
	N	19	19	19	19	19	19	19	20	20	20	20	20	20	20

Note. Mean values calculated from school means. CC = cognitive-curriculum; CT = cognitive-teacher, AC = affect-curriculum; AT = affect-teacher; Cog = cognitive; Aff = affective; ST = skill-themes; MA = multiactivity.

Studies (Montalvo & Silverman, 2008; Subramaniam & Silverman, 2007) have shown that student attitude toward physical education begins to decline after these grade levels, in the middle school and later years.

It has been suggested (Phillips & Silverman, 2015) that the grade level at which attitude starts to decline can be as young as fourth grade. The results of this study contrast with that. Overall, student means in fourth (68.87, *SD* = 5.61) and fifth (69.32, *SD* = 5.86) grades were found to be nearly identical. There is a need for more research on attitude toward physical education at these grade levels, for a better perspective of whether the decline begins in the upper elementary grades.

Research suggests that physical activity levels decrease as student age increases (Sallis, 2000). This presents a concern because of the obesity epidemic among youth (U.S. Department of Health and Human Services, 1996). Obesity is of considerable clinical and public health concern, and unfortunately, children who are obese are likely to remain obese into adulthood (Serdula et al., 1993). If factors influencing a decline in student attitude toward physical education at the upper elementary levels can be identified and addressed, perhaps children can develop more positive physical activity habits. If these positive habits can be created, it is less likely that childhood, and therefore adult, obesity will occur.

Sparse research has been undertaken regarding the physical education approach as a factor influencing upper elementary children's attitude toward physical education. After extensive lengths to verify the approach for 20 schools, including 10 ST and 10 MA, were taken in this study, no significant attitude differences were found. As approaches, ST and MA differ substantially in their characteristics. Discovering reasons why there was no significant difference would prove interesting. It could be that students this age have high attitudes toward school subjects in general. Studies have investigated kinesthetic learning in the classroom (Begel, Garcia, & Wolfman, 2004). Forty to 85% of children are kinesthetic learners (Dunn & Dunn, 1978). Physical education is a subject involving movement, or kinesthesis. It follows, then, that most children's attitudes will be high overall while they move during physical education, regardless of the approach.

The teachers in this study may have influenced students' attitude. The AT sub-factor mean was the highest overall among the sub-factors, though it varied by school. It is well documented that the teacher has a very strong influence on student attitude toward physical education (Carlson, 1995; Ennis, 1996; Subramaniam & Silverman, 2000). The findings in this study suggest that upper elementary school children's attitude toward physical education may be influenced by the teacher. This is similar to the results of research on middle and high school student attitudes toward physical education (Montalvo & Silverman, 2008; Subramaniam & Silverman, 2007).

Studies have suggested that curricular approaches employing competitive sports and activities and repetitive activities lead to less than favorable attitudes toward physical education (Bernstein et al., 2011; Carlson, 1995; Ennis, 1996; Subramaniam & Silverman, 2002). In this study, one might expect the MA schools' overall mean to be lower than the ST schools' overall mean, based on the MA characteristics and the above studies' implications. There was no difference in student attitude, however, between the ST and MA schools. Individual teacher behavior may be a reason for no attitude difference in overall means. Understanding relationships among teacher planning, teaching behavior, and student attitudes may provide more insight into the dynamics of what occurs in the gymnasium. This would also be of interest to teacher educators in providing direction to teacher candidates as the teacher candidates plan lessons for the development of positive student attitudes in upper elementary students.

The different ranges of scores in the ST and MA schools proved interesting. Although there was no difference in overall means by approach, the range of the school means in the ST category was approximately 10 points (62.13–72.18), while the MA schools' range was nearly 17 points (59.62–76.30). The large standard deviation associated with many schools' means may have made it difficult to find a significant difference between the curricular approaches. This occurred more often in the MA approach than in the ST approach, indicating that more variable student attitude occurred in the MA approach.

By virtue of the different sizes of the ranges of the approaches, it is possible that instructional decision making by the teacher (i.e., the

curricular approach used) may have influenced students. It is not surprising that there were higher school means in the MA approach. The lowest school means, however, were also within the MA approach. The MA's use of competition is consistent with the notion of variable (e.g., less than favorable) attitudes toward physical education in competitive curricula.

This study adds to the literature on what influences fourth- and fifth-grade children's attitudes toward physical education. Overall, students in these grades had positive attitudes. Boys and girls had similar attitudes, as did fourth- and fifth-grade students. Affect and cognition appear to influence student attitude in elementary school in similar ways. Curricular approaches appear not to affect attitude as a whole, though the MA approach sees a wider range of attitude and the ST approach a more consistent attitude. The teacher as a contextual factor, however, may influence attitude, and future analysis should examine teaching issues in addition to the curricular approach. If students are to have a positive elementary school experience that influences their future physical activity, understanding the factors that influence attitude is necessary.

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