State of Arizona
Department of Education

Tom Horne
Superintendent of
Public Instruction

December 15, 2008

The Honorable Janet Napolitano
Governor of Arizona
1700 West Washington
Phoenix, Arizona 85007

Dear Governor Napolitano:

In fulfillment of the reporting requirements of the 2006 House Bill 2140, we are submitting the final report for the *Physical Education Pilot Program* to the Governor, the President of the Senate and the Speaker of the House. In addition, copies of the report are also being provided to the Secretary of State and the Director of the Department of Library, Archives and Public Records.

It is important to note the effectiveness of quality physical education programs and the associated sustainability costs in the report. If you have additional questions or require additional information, please address your concerns to Mary Szafranski, Deputy Associate Superintendent of Health and Nutrition Services at (602) 542-8709.

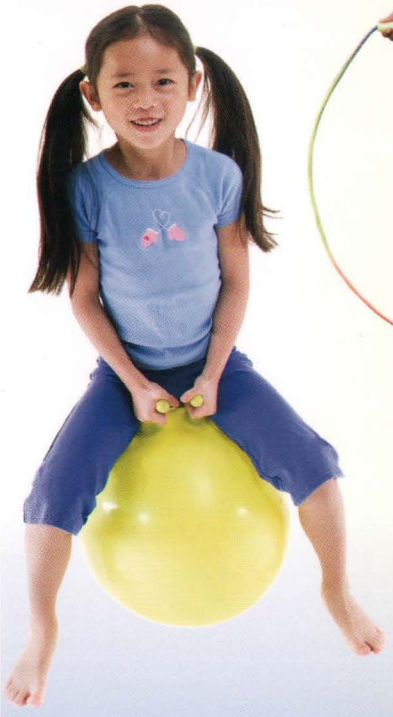
Sincerely,

Karen Butterfield, Ed.D.

Dr. Karen Butterfield, Associate Superintendent
Academic Achievement Division

Attachment

cc: The Honorable Robert Burns, Senate President, Arizona State Senate
The Honorable Kirk Adams, Speaker of the House, Arizona House of Representatives
The Honorable Jan Brewer, Secretary of State
GladysAnn Wells, Director and State Librarian



Physical Education Pilot Program

Final Report

Submitted by:

Tom Horne

Superintendent of Public Instruction

Arizona Department of Education

Acknowledgements

The Arizona Department of Education would like to thank **Representative Mark Anderson** for his support and efforts to improve the health and wellbeing of Arizona's children.

The Arizona Department of Education would like to acknowledge its staff who contributed oversight to this project and report:

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Deputy Associate Superintendent,
ADE School Health & Nutrition Services

Lynn Ladd
National School Lunch Program Health Director,
ADE Health & Nutrition Services

Breann Westmore
Physical Activity, Nutrition, &Tobacco Prevention Coordinator,
ADE School Health and Nutrition Services

The Arizona Department of Education would also like to acknowledge the Physical Education Pilot Program research team from Arizona State University:

Pamela Hodges Kulinna, Ph.D.
Associate Professor—Arizona State University, Principle Evaluator

Research Team

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Ernesto Ramirez, M.S.
Catrine Tudor-Locke, Ph.D.
Hans van der Mars, Ph.D.
Tracy Washington, M

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Physical Education Pilot Program School

Arizona Department of Education would like to thank the PE Pilot Program Schools and their staff members. Without their dedication to this project, this report would have not been possible.

Acacia Elementary School- Vail Unified School District

Elfridia Elementary School- Elfridia Elementary District

Guerrero Elementary School- Mesa Public Schools

Kyrene de Las Lomas- Kyrene School District

Physical Education Pilot Grant Program

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Physical Education Pilot Grant Program

EXECUTIVE SUMMARY

Executive Summary

In 2006, the Arizona Legislature passed House Bill 2140 establishing the Physical Education Pilot Program. Based on HB2140 (Appendix A), the Arizona Department of Education selected four schools through a competitive grant application to receive Physical Education Pilot Program grants based on a designed intervention program selected by each school. Schools were selected based on HB 2140 criteria including size of county, free and reduced percentage and quality of proposed intervention. Schools were required to implement physical education curricula meeting the Centers for Disease Control and Prevention guidelines. This included providing 150 minutes of physical education for each child per week with 50% or more of the time being moderate to vigorous physical activity. The four selected schools received an average of $120,083 (SD=39,060) to implement a healthy lifestyle program emphasizing physical education and physical activity for one school year (July 2007 to May 2008). Schools reported the annual cost to sustain their programs as follows: (a) School 1 ($47,500), School 2 ($45,200), School 3 ($30,500), and School 4 ($33,041).

The four school personnel-designed interventions were selected in four different elementary school districts across the State of Arizona. These were comprehensive programs that were extremely well received by students, parents, and school personnel. The interventions developed by each school included a variety of the following: (a) new physical education curricula, (b) new physical education teachers, (c) new physical activity aides, (d) extensive physical education, classroom teacher and school personnel training for healthy and active schools, brain-based learning, and the importance of physical activity in learning, (e) schedule changes and lengthening the school day, (f) classroom physical activity breaks, (g) structured recess, (h) new programming before school, at lunch and after school, (i) new wellness centers, (j) new physical education and wellness equipment, (k) family physical activity events on school grounds and field trips such as hiking, (l) changes to the food service to provide more healthy options, and (m) point-of-decision prompts or signage to promote healthy behaviors.

Schools have reportedly continued aspects of the programs that they were able to maintain without significant external funding. For example, School One has been able to keep three days of physical education per week due to additional funding for the program from the school district (note they had 2 days per week prior to the intervention and five days per week during the intervention). This funding was due to the overwhelmingly positive reactions to the Physical Education Pilot program from students, parents, and teachers. Other schools have had less success in procuring other funding for initiatives. They are currently seeking additional funding to integrate components of their intervention programs on a permanent basis.

The Physical Education Pilot Program schools were evaluated by an external team from Arizona State University over eight weeks in the schools pre/post. The evaluation process included the following components: (a) physical activity and Body Mass Index measurements (BMI); (b) surveys related to perceptions of physical activity; (c) end of program surveys completed by three groups of respondents, that is, students, parents/guardians, and school personnel; (d) collecting school level data (e.g., absences); (e) interviews with teachers; and (f) field notes from time spent observing at the schools. Field notes and teacher interviews supported that the schools did what they said they would during the implementation of the school change initiatives. Teachers also conducted and reported the classroom activity breaks providing further implementation evidence. Fourth and fifth grade students were the target population for the evaluation (approximately 100 students/school).

- Physical activity data pre/post results showed that all of the time segments measured had increases in physical activity—from a 2% increase for lunch recess to a 33% increase for classroom physical activity.

- Student survey data showed positive changes in students' beliefs about physical activity.

- End of the year surveys also showed very positive perceptions of the Physical Education Pilot Program interventions by key stakeholders, that is, students, families and school personnel. For example, parents reported an awareness of the increased focus of promoting physical activity at their child(ren)'s school (*M*=3.29 on a 1-5 scale).

- School level data also showed desirable findings with absences and nurse visits decreasing by post-testing in the Physical Education Pilot Program schools. Note that the program did not take away from core subject learning with AIMS test results remaining relatively stable. Classroom activity breaks were also often tied to current academic content.

The Physical Education Pilot Program resulted in significant positive healthy behavior changes for children in these schools. It is critical for the State of Arizona to find creative ways to finance increased physical education, physical activity, and healthy lifestyle knowledge in Arizona schools and the surrounding communities.

Physical Education Pilot Grant Program

OVERVIEW OF THE EVALUATION PROCESS

Overview of the Evaluation Process

The ASU Evaluation Team spent a week at each of the four intervention schools during pre-testing and during post-testing for a total of 8 weeks of data collection during the 2007-2008 school year beginning on July 31, 2007 and concluding on May 21, 2008. A minimum of two team members (graduate students and faculty) and a maximum of eight were present at each school at all times during data collection.

Data collection included physical activity patterns measured using pedometry. Students' physical activity patterns were assessed during recess, physical education classes, the school day, and for 24 hours. Students' height and weight were also gathered pre/post using a stadiometer and scale in order to track possible Body Mass Index changes.

In addition to the physical measurements, students' perceptions of physical activity were also assessed pre/post using a survey instrument. Furthermore, three groups of respondents were also assessed regarding their perceptions of the Physical Education Pilot grant intervention program at each school, including teachers/school personnel, students, and parents/guardians.

Descriptive school level data were compiled, including absences and nurse visits. Descriptive statistics for the teachers and students were also gathered (e.g., teachers' years of teaching experience). In addition, school personnel from the four Physical Education Pilot Program schools also provided the Arizona Department of Education with a budget and progress report monthly.

Finally, some of the teacher/school personnel participated in interviews about their schools' programs either pre and/or post during an additional two weeks (one week in the fall and one week in the spring) of data collection during the academic year. Field notes were taken during pedometer data collection and during interview data collection sessions.

Fidelity to the Intervention Programs

The schools' fidelity to their intervention programs was documented by field notes and interview responses. Although the level of fidelity to the intervention program components varied by school personnel, all four schools had very high levels of fidelity to their interventions.

Physical Education Pilot Grant Program

SCHOOL INTERVENTION PROGRAMS & COSTS

Intervention Programs

Each school's intervention program was designed by the school personnel themselves and detailed in their grant application. Components included: (a) curriculum change; (b) new teachers or new teacher aides; (c) educational experiences; (d) scheduling changes (i.e., daily physical education); (e) classroom physical activity breaks; (f) structured recess; (g) new programming; (h) school day changes (increased to accommodate more physical activity); (i) facility additions; (j) equipment additions; (k) food service changes; and finally (l) environmental changes, such as, point-of-decision prompts (posters) encouraging positive decisions for healthy behaviors. See next page for an overview of the Physical Education Pilot Program School interventions.

Physical Education Pilot Program Interventions				
Component	**School 1**	**School 2**	**School 3**	**School 4**
Curriculum Change		SPARK Physical Activity Curriculum for Physical Education		
New Teachers	2 Certified Physical Education Teachers	1 Certified Physical Education Teacher		
New Physical Activity Aides			1 Physical Activity Aide	
Educational	Active & Healthy Training	SPARK Physical Activity Training	Active & Healthy Training	Activity & Healthy Training and Brain Based Research Training
Physical Education Schedule Change	Daily Physical Education			
Classroom Physical Activity Breaks	Classroom Teachers Added 1-2 Activity Breaks/Day	Classroom Teachers Added 1-2 Activity Breaks/Day	Classroom Teachers Added 1-2 Activity Breaks/Day	Classroom Teachers Added 1-2 Activity Breaks/Day
Structured Recess	Structured Recess	Equipment Provided at Recess	Equipment Provided Structured Recess	Equipment Provided at Recess/Semi-Structured Recess
New Programs	Before School & Lunch Walking Program		Lunchtime Intramurals and Physical Activity Programs After School	After School and Off Campus Activities such as Hiking
School Day	Increased Length of School Day to Add Daily PE			
Facilities		Wellness Center	Wellness Activity Center	
Equipment	New Physical Activity Equipment Purchased	New Physical Activity Equipment Purchased	New Physical Activity Equipment Purchased	New Physical Activity Equipment Purchased
Families			Family Activity Events	Family Activity Events
Food Services			Changed Food Service to Provide More Healthy Options	
Environment			Point of Decision Prompts	
Actual Costs	**$159,982**	**$94,646**	**$97,488**	**$128,214**
Proposed to Sustain	**$47,500**	**$45,200**	**$30,500**	**$33,041**
Mean number and % change in total steps	931 (14.7%)	2152 (22.1%)	924 (21.5%)	744 (-2.3%)*

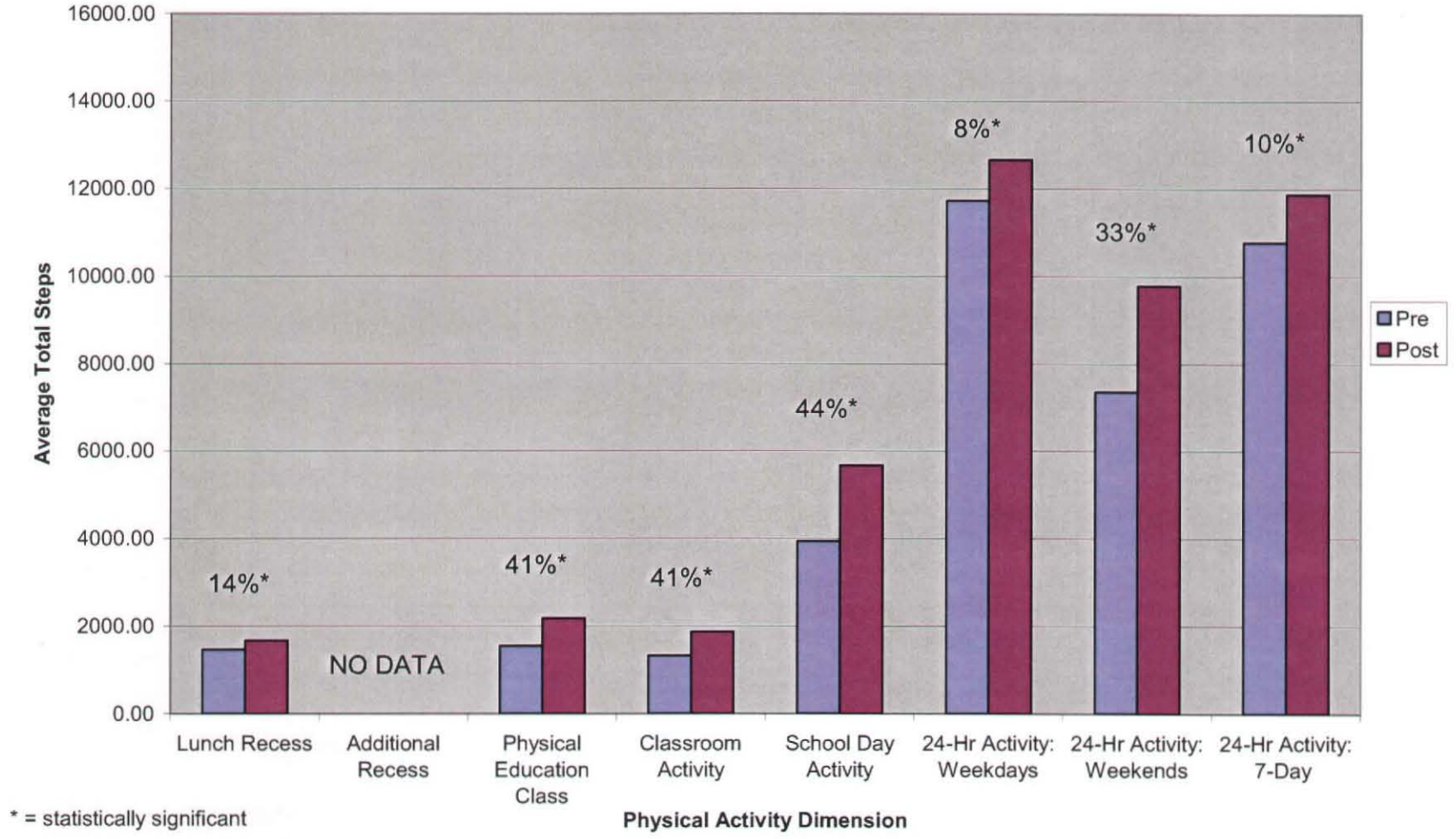
* Even though total steps decreased at School 4, other positive changes occurred such as a 36% decrease in perceived barriers to physical activity

Physical Education Pilot Program Schools Funding & Sustainability Report		
Schools	**Initial Funding**	**Reported to Sustain Program**
School 1	$159,982	$47,500
School 2	$94,646	$45,200
School 3	$97,488	$30,500
School 4	$128,214	$33,041
Mean Dollars	**$120,083**	**$39,060**

Physical Education Pilot Grant Program

PHYSICAL ACTIVITY DATA

School 1: Average Physical Activity

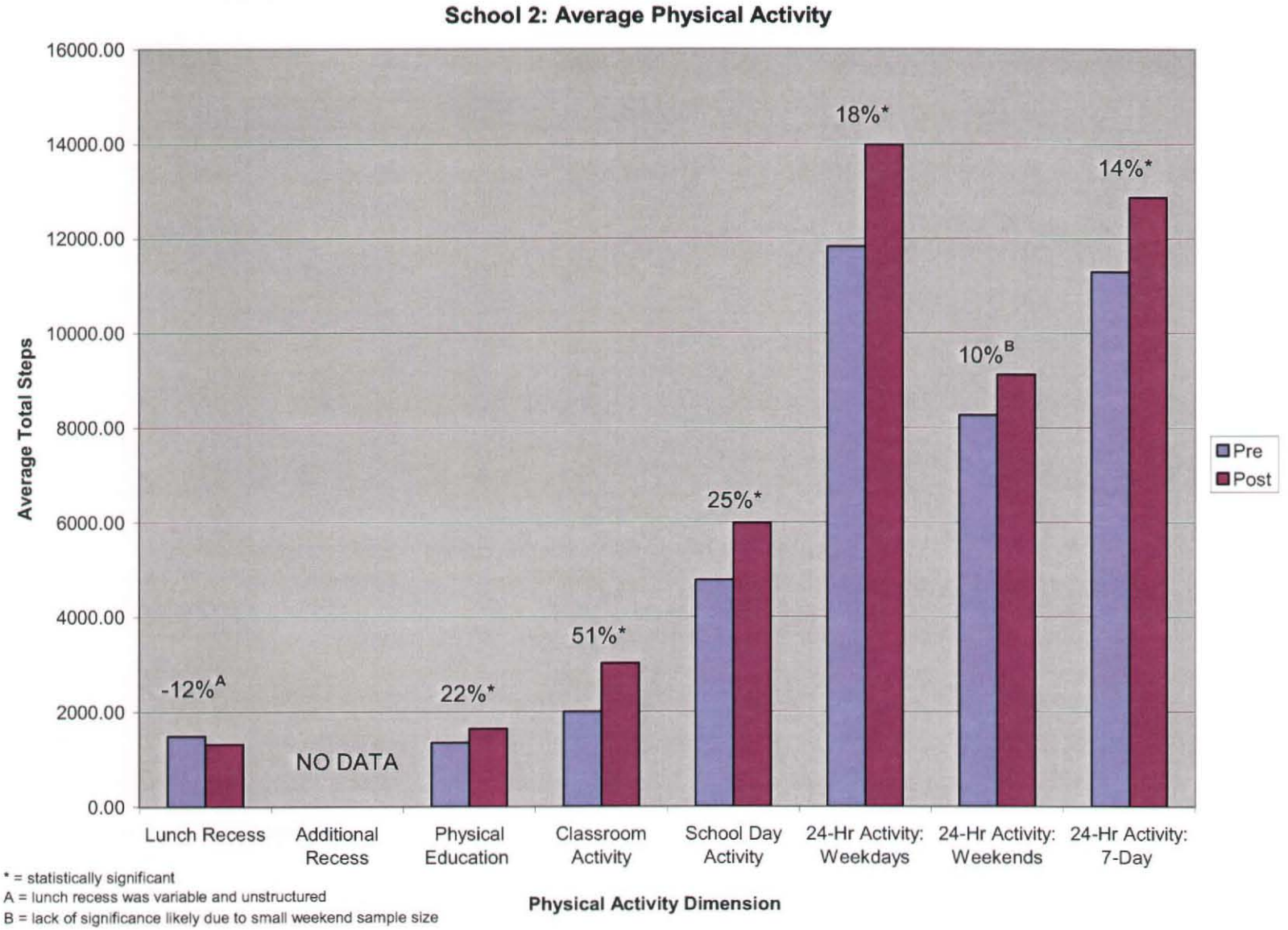


* = statistically significant

School 1: Average Physical Activity					
Dimension	Pre Mean	Pre SD	Post Mean	Post SD	% Change
Lunch Recess	1468.43	518.28	1667.99	469.44	14%*
Additional Recess	No Data	No Data	No Data	No Data	No Data
Physical Education Class	1549.72	543.63	2177.06	452.79	41%*
Classroom Activity	1326.83	835.90	1873.82	825.14	41%*
School Day Activity	3940.34	1070.44	5672.62	1268.63	44%*
24-Hr Activity: Weekdays	11,730.58	3545.73	12,661.88	3113.61	8%*
24-Hr Activity: Weekends	7361.28	3961.76	9789.38	5051.69	33%*
24-Hr Activity: 7-Day	10,776.42	3410.73	11,883.44	3404.42	10%*

Note: SD = standard deviation
* = statistically significant

Data from students at School 1 indicated a favorable increase in steps taken when examining pre and post-test steps. Paired sample *t*-test results revealed a statistically significant increase in number of steps taken in all seven observed environments: lunch recess (14%), physical education steps (41%), classroom activity (41%), school day activity (44%), 24-hr weekday activity (8%), 24-hr weekend activity (33%), and 24-hr 7-day activity (10%). Please note that School 1 does not offer an additional recess.

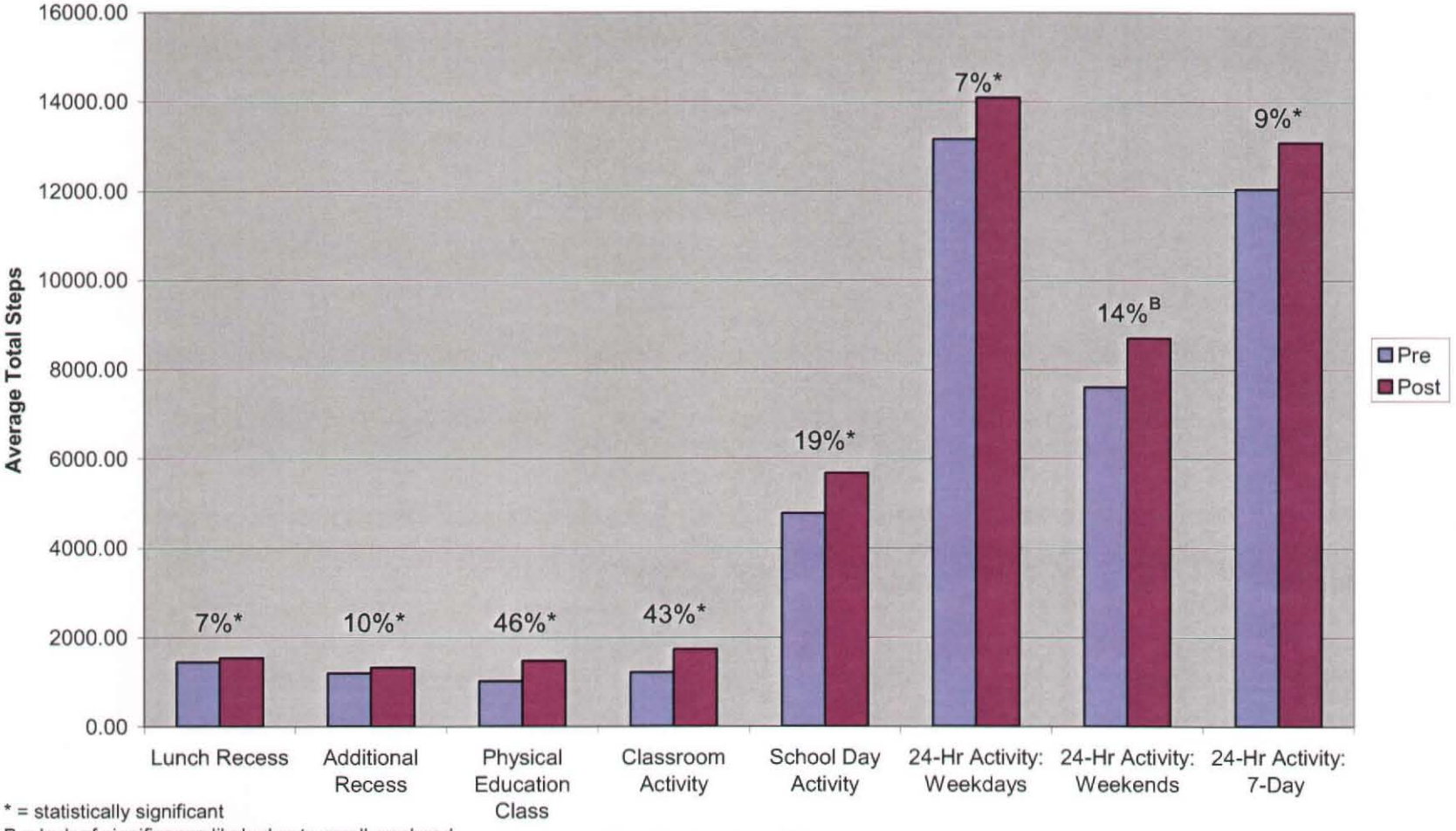

School 2: Average Physical Activity
16000.00
14000.00
12000.00
10000.00
8000.00
6000.00
4000.00
2000.00
0.00
Average Total Steps
-12%A
NO DATA
22%*
51%*
25%*
18%*
10%B
14%*
Pre
Post
Lunch Recess
Additional Recess
Physical Education
Classroom Activity
School Day Activity
24-Hr Activity: Weekdays
24-Hr Activity: Weekends
24-Hr Activity: 7-Day
Physical Activity Dimension
* = statistically significant
A = lunch recess was variable and unstructured
B = lack of significance likely due to small weekend sample size

School 2: Average Physical Activity					
Dimension	Pre Mean	Pre SD	Post Mean	Post SD	% Change
Lunch Recess	1490.51	422.18	1313.84	544.30	-12%
Additional Recess	No Data	No Data	No Data	No Data	No Data
Physical Education Class	1347.81	287.09	1642.37	495.64	22%*
Classroom Activity	1999.96	636.28	3020.57	1512.30	51%*
School Day Activity	4784.58	918.90	5990.06	1929.12	25%*
24-Hr Activity: Weekdays	11,824.00	3017.44	13,976.09	4486.08	18%*
24-Hr Activity: Weekends	8269.91	4668.32	9122.83	4537.42	10%
24-Hr Activity: 7-Day	11,290.53	2777.45	12,876.29	3782.28	14%*

Note: SD = standard deviation
* = statistically significant

Data from students at School 2 indicated a favorable increase in steps taken when examining pre and post-test physical activity. Paired sample *t*-test revealed a statistically significant increase in number of steps taken in five of the seven observed environments: physical education steps (22%), classroom activity (51%), school day activity (25%), 24-hr weekday activity (18%), and 24-hr 7-day activity (14%). Although not statistically significant, there was a 10% increase in 24-hr weekend steps. Please note that School 2 does not offer an additional recess.

School 3: Average Physical Activity

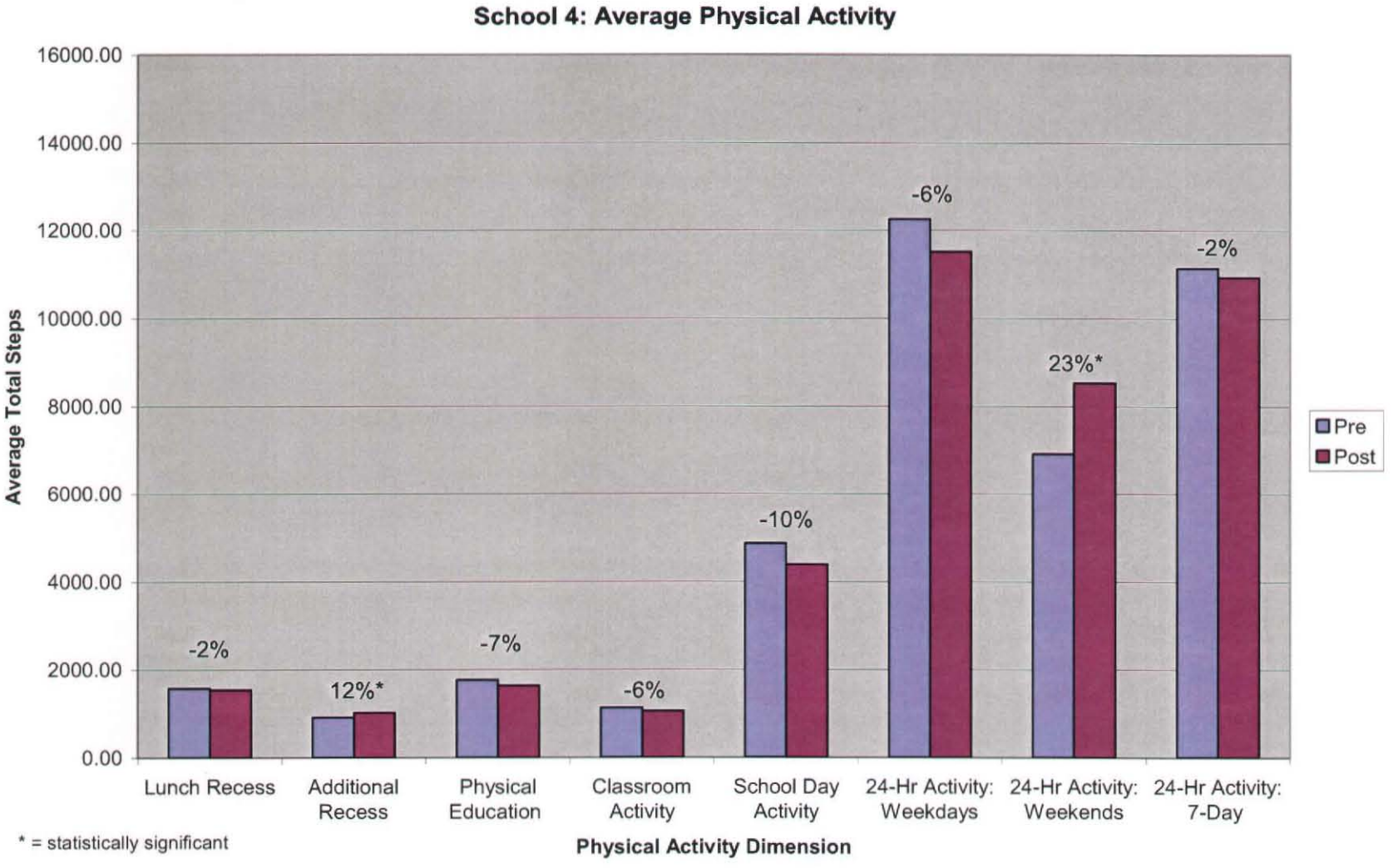


* = statistically significant
B = lack of significance likely due to small weekend sample size

School 3: Average Physical Activity					
Dimension	Pre Mean	Pre SD	Post Mean	Post SD	% Change
Lunch Recess	1439.77	459.48	1538.84	527.43	7%*
Additional Recess	1195.74	494.88	1319.06	559.21	10%*
Physical Education Class	1014.98	196.62	1477.88	398.50	46%*
Classroom Activity	1217.22	861.81	1739.17	1196.82	43%*
School Day Activity	4790.60	1444.17	5688.97	1554.09	19%*
24-Hr Activity: Weekdays	13,173.12	4433.60	14,097.25	4428.09	7%*
24-Hr Activity: Weekends	7609.03	5026.78	8703.86	5135.60	14%
24-Hr Activity: 7-Day	12,053.17	4389.12	13,097.61	4136.93	9%*

Note: SD = standard deviation
* = statistically significant

Data from students at School 3 indicated a favorable increase in steps taken when examining pre and post-test steps. Paired sample *t*-test revealed a statistically significant increase in number of steps taken in seven of the eight observed environments: lunch recess (7%), additional recess (10%), physical education steps (46%), classroom activity (43%), school day activity (19%), 24 –hr weekday (7%), and 24-hr 7-day activity (9%). There was also a weekend day increase that may not have reached significance due to a small sample size.

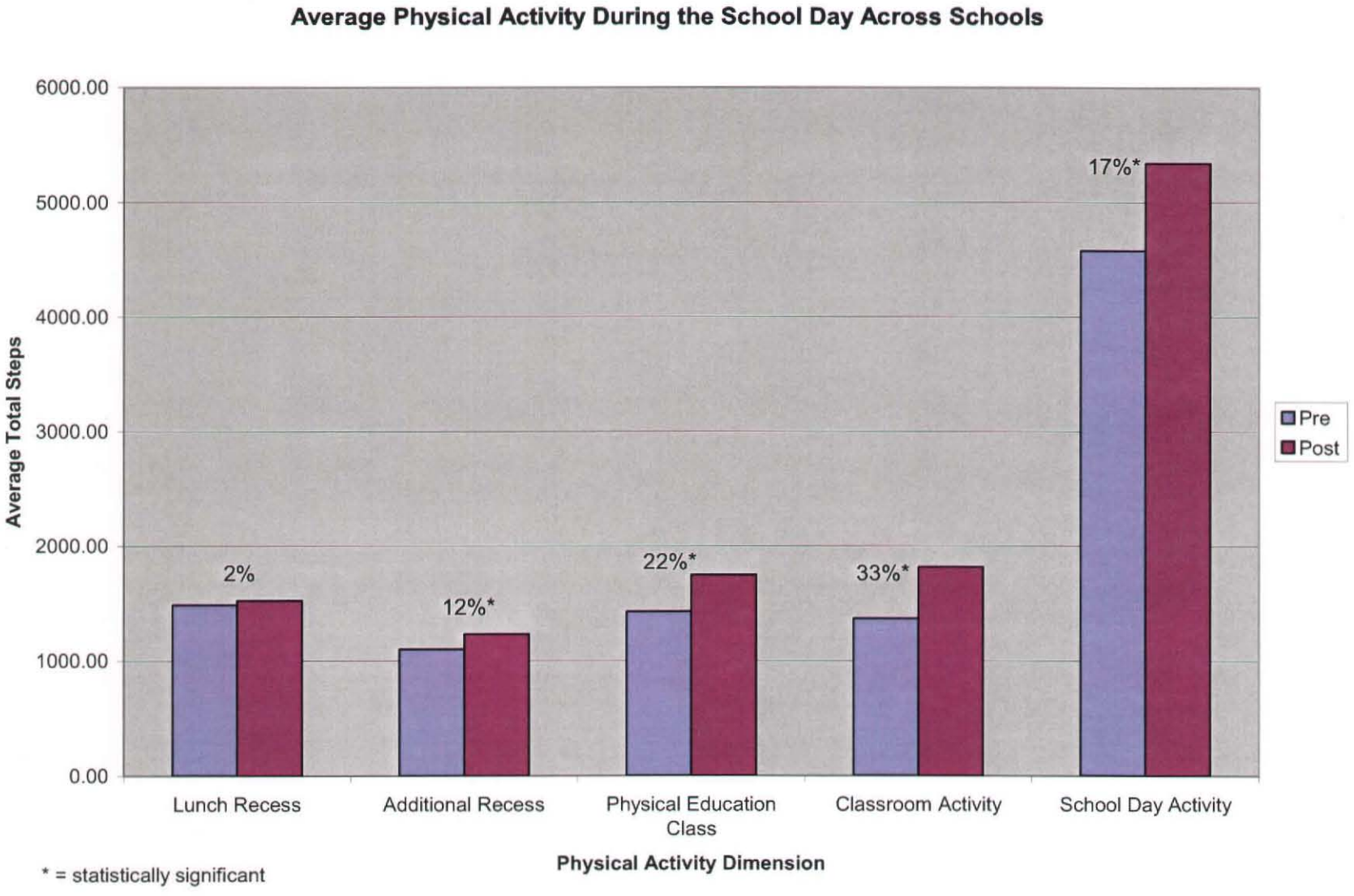


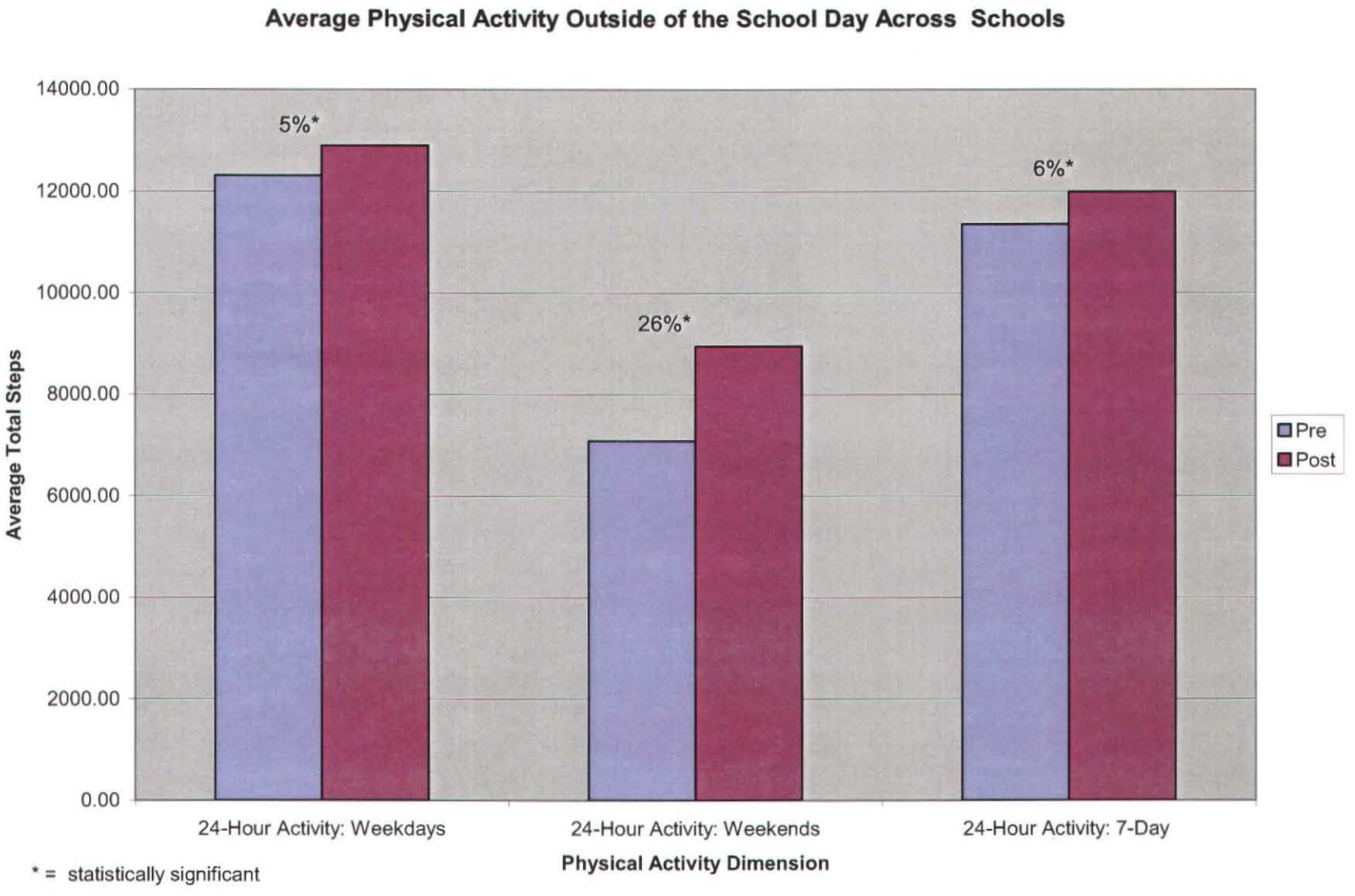
Note: School 4 had a major focus on out of school physical activity and structured recess.

School 4: Average Physical Activity					
Dimension	Pre Mean	Pre SD	Post Mean	Post SD	% Change
Lunch Recess	1580.24	471.43	1540.92	512.22	-2%
Additional Recess	919.16	342.03	1025.80	452.89	12%*
Physical Education Class	1767.03	413.02	1642.78	558.29	-7%
Classroom Activity	1131.36	950.64	1066.47	1023.47	-6%
School Day Activity	4867.61	1207.59	4383.69	1482.63	-10%
24-Hr Activity: Weekdays	12,256.56	3327.20	11,512.50	3815.35	-6%
24-Hr Activity: Weekends	6919.30	3749.09	8537.64	3470.93	23%*
24-Hr Activity: 7-Day	11,142.02	3171.29	10,938.52	3501.36	-2%

Note: SD = standard deviation
* = statistically significant

Paired sample *t*-test results revealed two statistically significant increases in number of steps taken, 24-hr weekend activity (23%) and additional recess steps (12%). This school focused on out-of-school and family physical activity as well as structured recess. Decreases in physical activity observed were most likely due administration changes, long-term substitutes, teacher injuries, late implementation of the project, and other factors beyond the program or school's control.


Average Physical Activity During the School Day Across Schools
6000.00
5000.00
4000.00
3000.00
2000.00
1000.00
0.00
Average Total Steps
2%
12%*
22%*
33%*
17%*
Pre
Post
Lunch Recess
Additional Recess
Physical Education Class
Classroom Activity
School Day Activity
Physical Activity Dimension
* = statistically significant

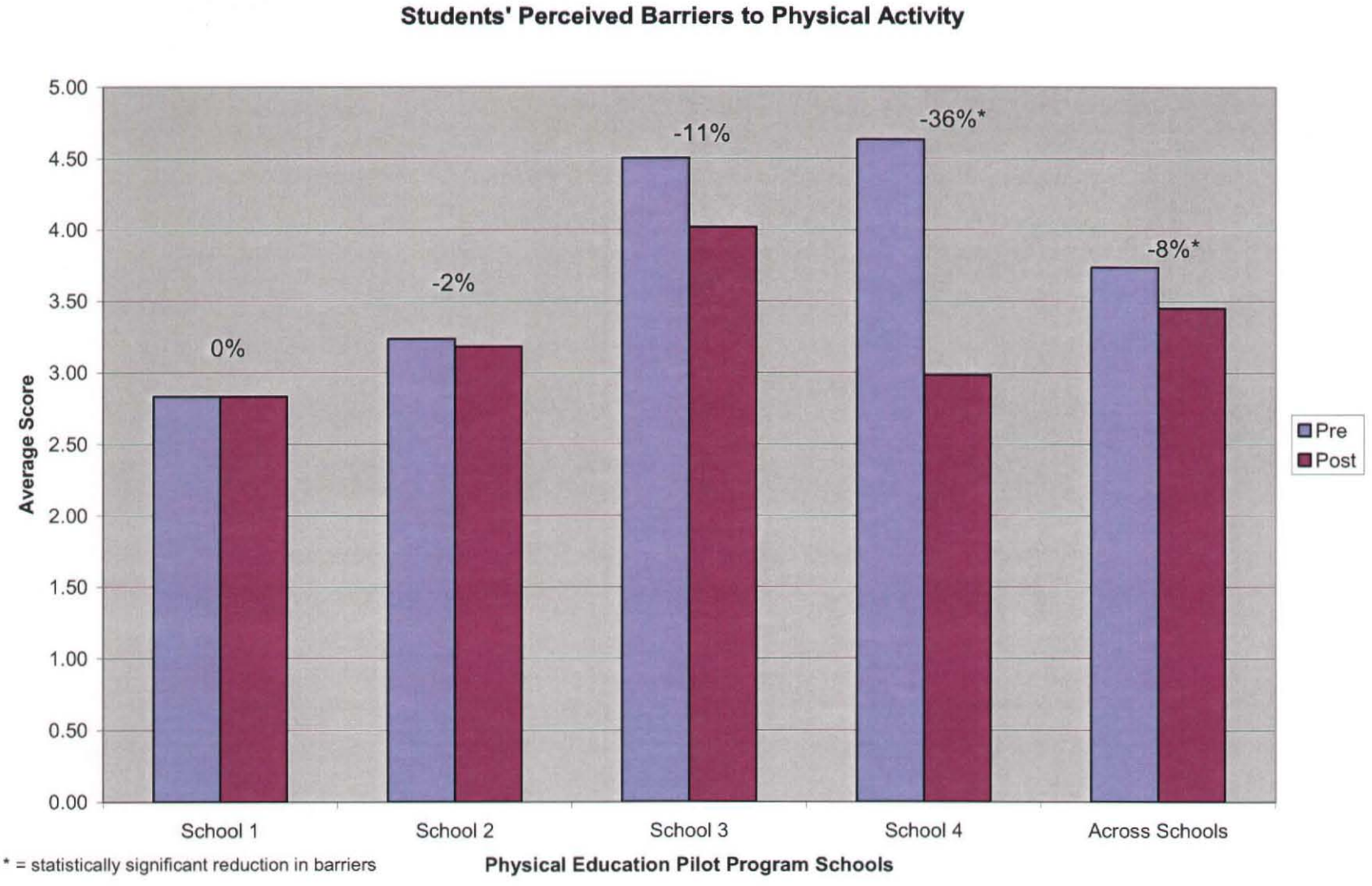

Average Physical Activity Outside of the School Day Across Schools
14000.00
12000.00
10000.00
8000.00
6000.00
4000.00
2000.00
0.00
Average Total Steps
5%*
26%*
6%*
Pre
Post
24-Hour Activity: Weekdays
24-Hour Activity: Weekends
24-Hour Activity: 7-Day
Physical Activity Dimension
* = statistically significant

Average Physical Activity Across Physical Education Pilot Program Schools					
Dimension	Pre Mean	Pre SD	Post Mean	Post SD	% Change
Lunch Recess	1468.49	493.12	1523.04	524.46	2%
Additional Recess	1099.12	481.23	1231.03	549.62	12%*
Physical Education Class	1428.97	484.30	1746.20	548.05	22%*
Classroom Activity	1366.80	890.34	1819.04	1307.36	33%*
School Day Activity	4578.97	1259.47	5342.85	1676.12	17%*
24-Hr Activity: Weekdays	12,315.69	3700.06	12,895.60	4113.97	5%*
24-Hr Activity: Weekends	7087.90	4260.43	8955.11	4799.46	26%*
24-Hr Activity: 7-Day	11,355.76	3616.28	11,996.39	3830.38	6%*

Note: SD = standard deviation
* = statistically significant

Physical Education Pilot Grant Program

PHYSICAL ACTIVITY SURVEY DATA


Students' Perceived Barriers to Physical Activity
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
Average Score
0%
-2%
-11%
-36%*
-8%*
Pre
Post
School 1
School 2
School 3
School 4
Across Schools
* = statistically significant reduction in barriers
Physical Education Pilot Program Schools

Physical Activity Survey Across Schools

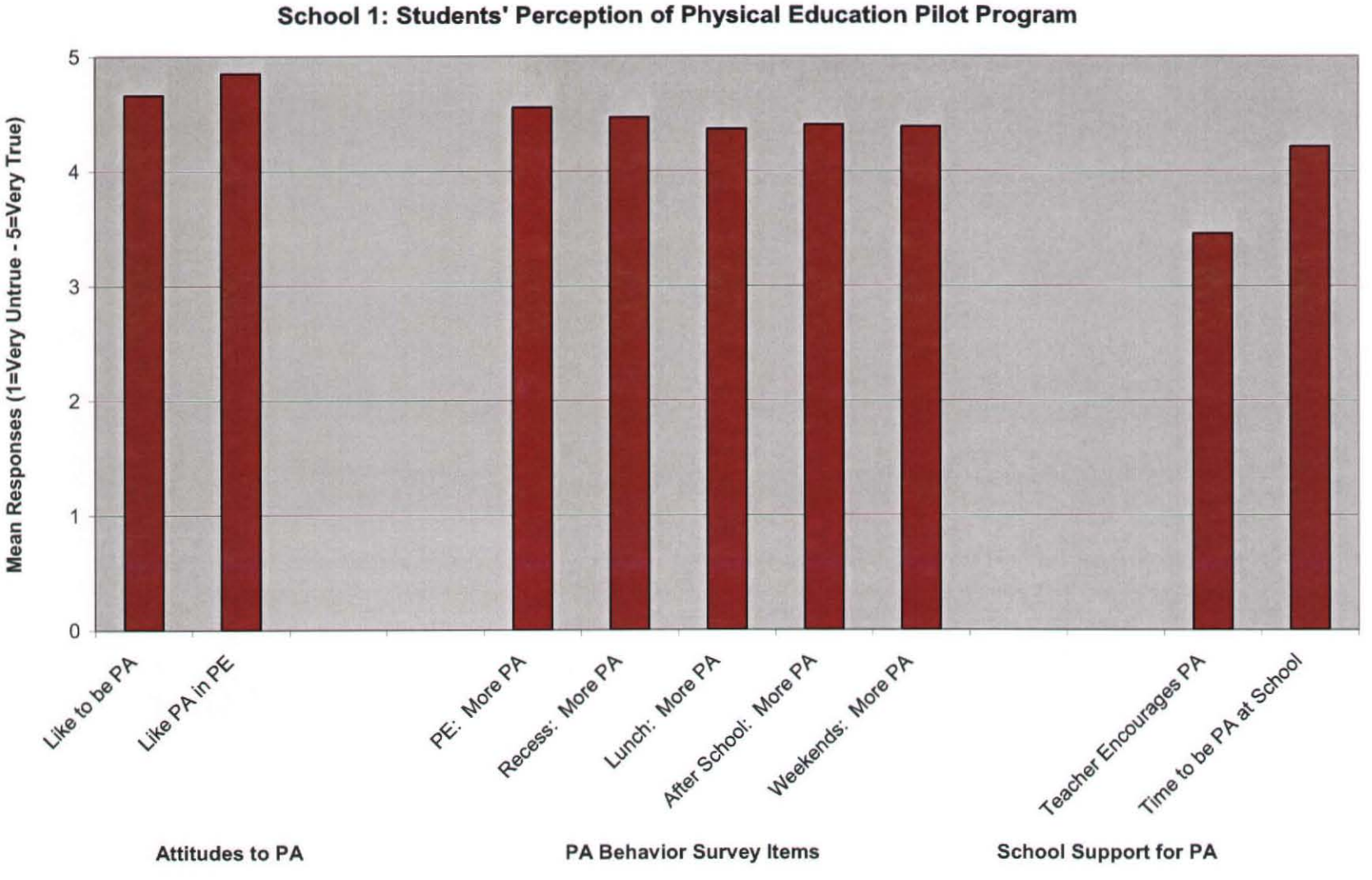
A brief survey administered to students indicated a change in determinants of physical activity behaviors from pre to post-testing. Each survey was split into five scales which measures variables consistent with social cognitive theory. In addition, two outcome variables related to actual physical activity behaviors were measured.

Barriers:

The students enrolled in the Physical Education Pilot Program schools show a statistically significant (8%) decrease in the number of barriers to engaging in physical activity behaviors.

Physical Education Pilot Grant Program

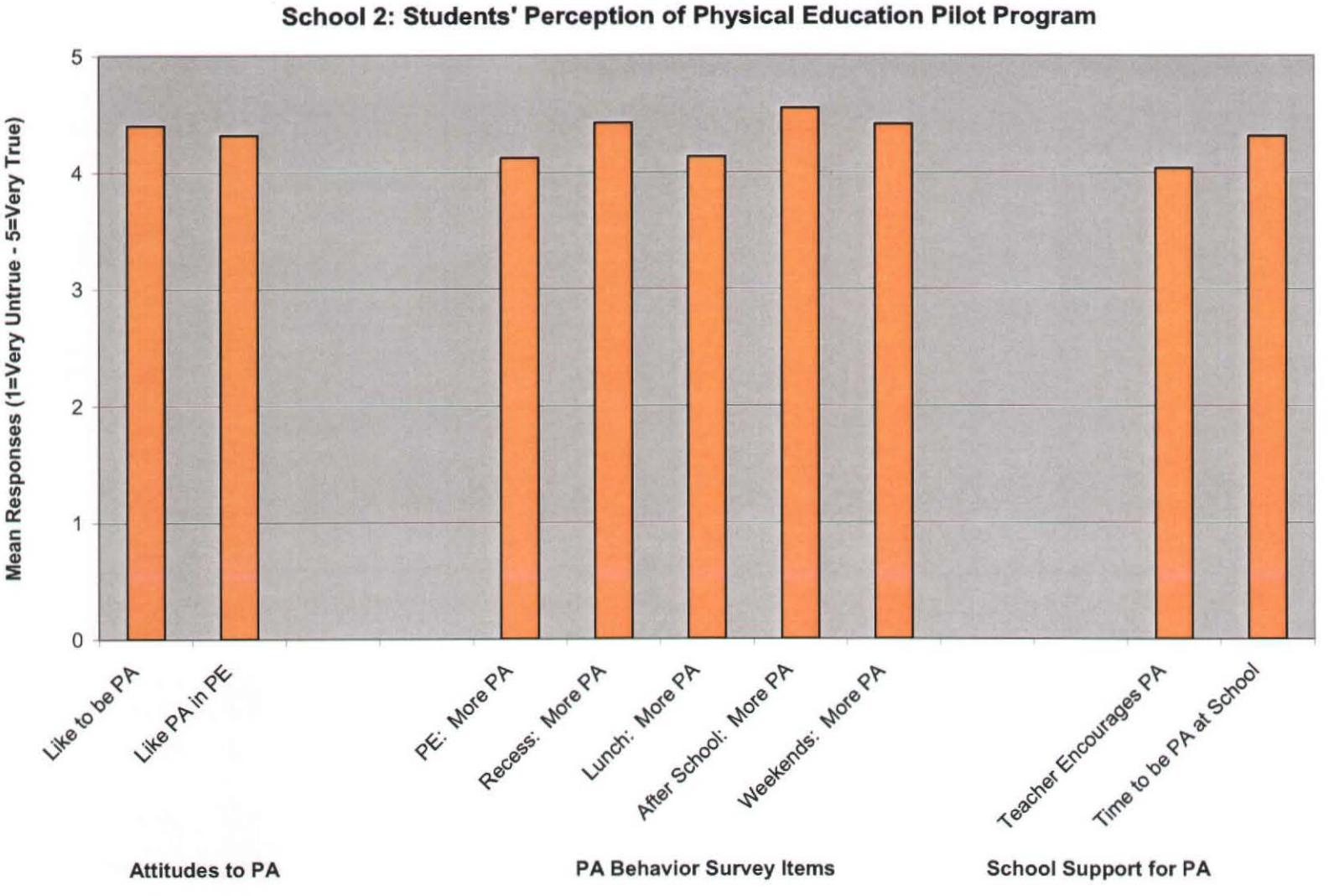
PERCEPTION OF PHYSICAL ACTIVITY INTERVENTION BY STUDENTS, SCHOOL PERSONNEL, & PARENTS


School 1: Students' Perception of Physical Education Pilot Program
Mean Responses (1=Very Untrue - 5=Very True)
5
4
3
2
1
0
Like to be PA
Like PA in PE
PE: More PA
Recess: More PA
Lunch: More PA
After School: More PA
Weekends: More PA
Teacher Encourages PA
Time to be PA at School
Attitudes to PA
PA Behavior Survey Items
School Support for PA

School 1: Students' Perception of Physical Education Pilot Program		
Question	Post Mean	Post SD
I like to be physically active.	4.67	0.51
I like to be physically active in PE.	4.85	0.36
I am now more physically active in PE.	4.56	0.86
I am now more physically active during recess.	4.47	0.99
I am now more physically active during lunch.	4.37	1.04
I am now more physically active after I leave school.	4.41	1.03
I am now more physically active on Saturdays and Sundays.	4.39	1.02
My classroom teacher encourages me to be physically active in the classroom.	3.45	1.53
Every day during school I have lots of time to be physically active.	4.22	1.16

Note: SD = standard deviation

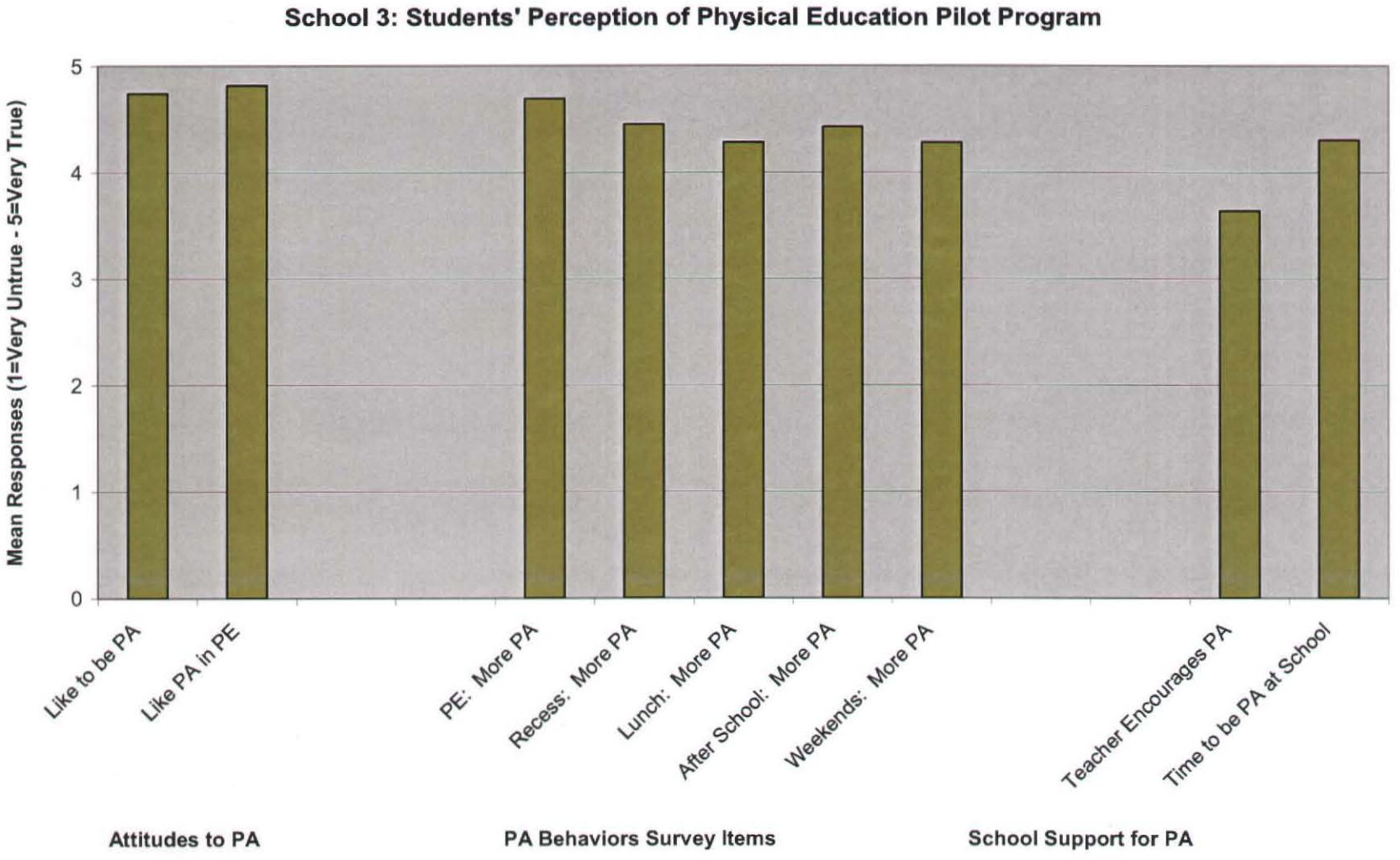
Students at School 1 generally answered favorably to questions of their perceptions of physical activity. School 1 students especially responded well to liking physical activity in Physical Education class with an average score of 4.85 (5 being highest positive perception score). While still a positive response, classroom teacher encouragement to be physically active had the lowest perception of 3.45 out of 5.


School 2: Students' Perception of Physical Education Pilot Program
Mean Responses (1=Very Untrue - 5=Very True)
0
1
2
3
4
5
Like to be PA
Like PA in PE
PE: More PA
Recess: More PA
Lunch: More PA
After School: More PA
Weekends: More PA
Teacher Encourages PA
Time to be PA at School
Attitudes to PA
PA Behavior Survey Items
School Support for PA

School 2: Students' Perception of Physical Education Pilot Program		
Question	Post Mean	Post SD
I like to be physically active.	4.40	0.84
I like to be physically active in PE.	4.32	1.03
I am now more physically active in PE.	4.13	1.10
I am now more physically active during recess.	4.42	1.01
I am now more physically active during lunch.	4.13	1.10
I am now more physically active after I leave school.	4.55	0.94
I am now more physically active on Saturdays and Sundays.	4.41	1.10
My classroom teacher encourages me to be physically active in the classroom.	4.04	1.22
Every day during school I have lots of time to be physically active.	4.32	0.99

Note: SD = standard deviation

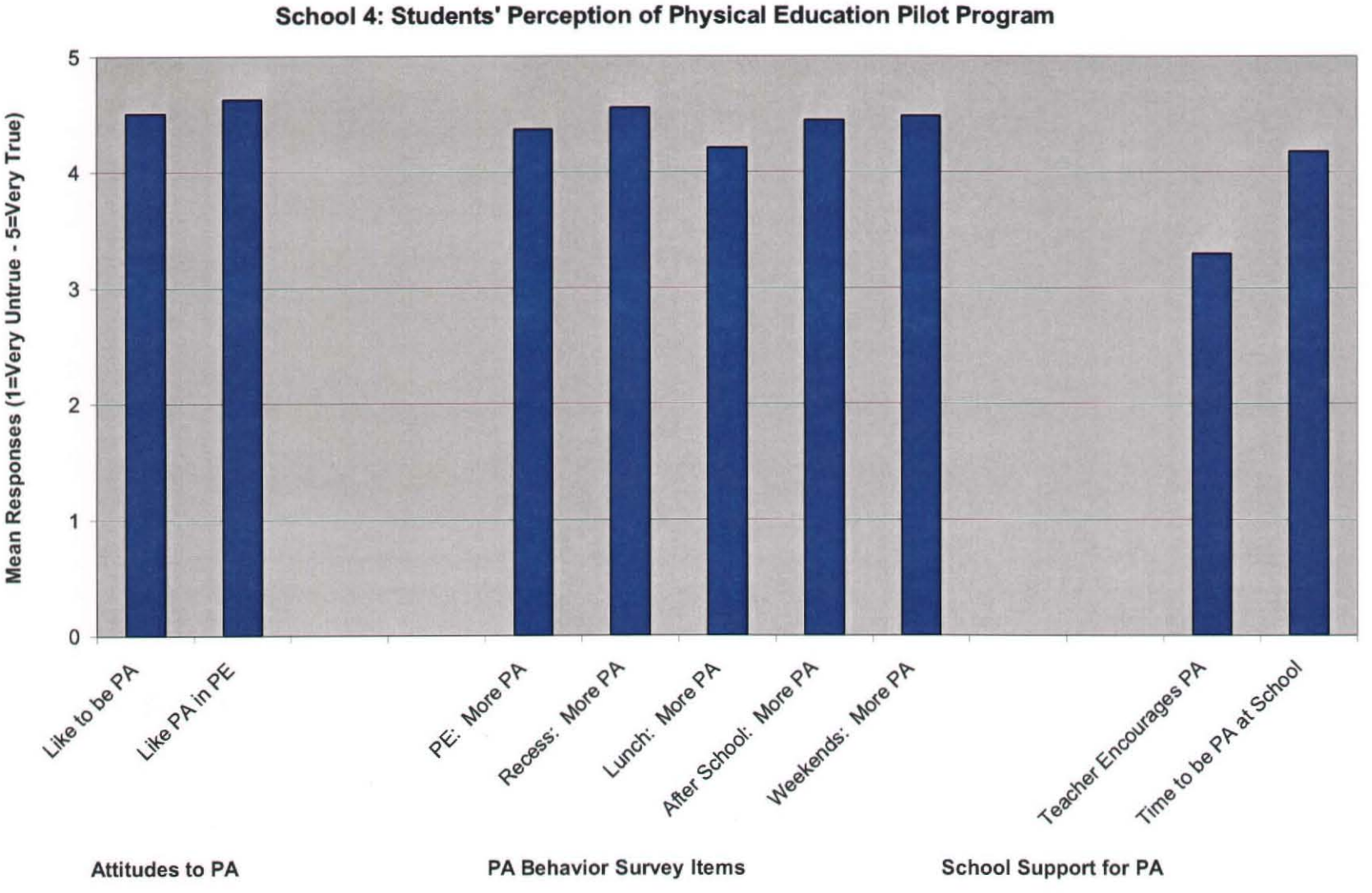
Students at School 2 generally answered favorably to questions of their perceptions of physical activity. School 2 students especially responded well to being active after school (4.55) and on weekends (4.41) with 5 being highest positive perception score. While still a highly positive response, classroom teacher encouragement to be physically active had the lowest perception of 4.04 out of 5.


School 3: Students' Perception of Physical Education Pilot Program
Mean Responses (1=Very Untrue - 5=Very True)
0
1
2
3
4
5
Like to be PA
Like PA in PE
PE: More PA
Recess: More PA
Lunch: More PA
After School: More PA
Weekends: More PA
Teacher Encourages PA
Time to be PA at School
Attitudes to PA
PA Behaviors Survey Items
School Support for PA

School 3: Students' Perception of Physical Education Pilot Program		
Question	Post Mean	Post SD
I like to be physically active.	4.74	0.67
I like to be physically active in PE.	4.82	0.58
I am now more physically active in PE.	4.69	0.79
I am now more physically active during recess.	4.45	1.06
I am now more physically active during lunch.	4.28	1.12
I am now more physically active after I leave school.	4.43	1.02
I am now more physically active on Saturdays and Sundays.	4.28	1.16
My classroom teacher encourages me to be physically active in the classroom.	3.64	3.64
Every day during school I have lots of time to be physically active.	4.31	1.06

Note: SD = standard deviation

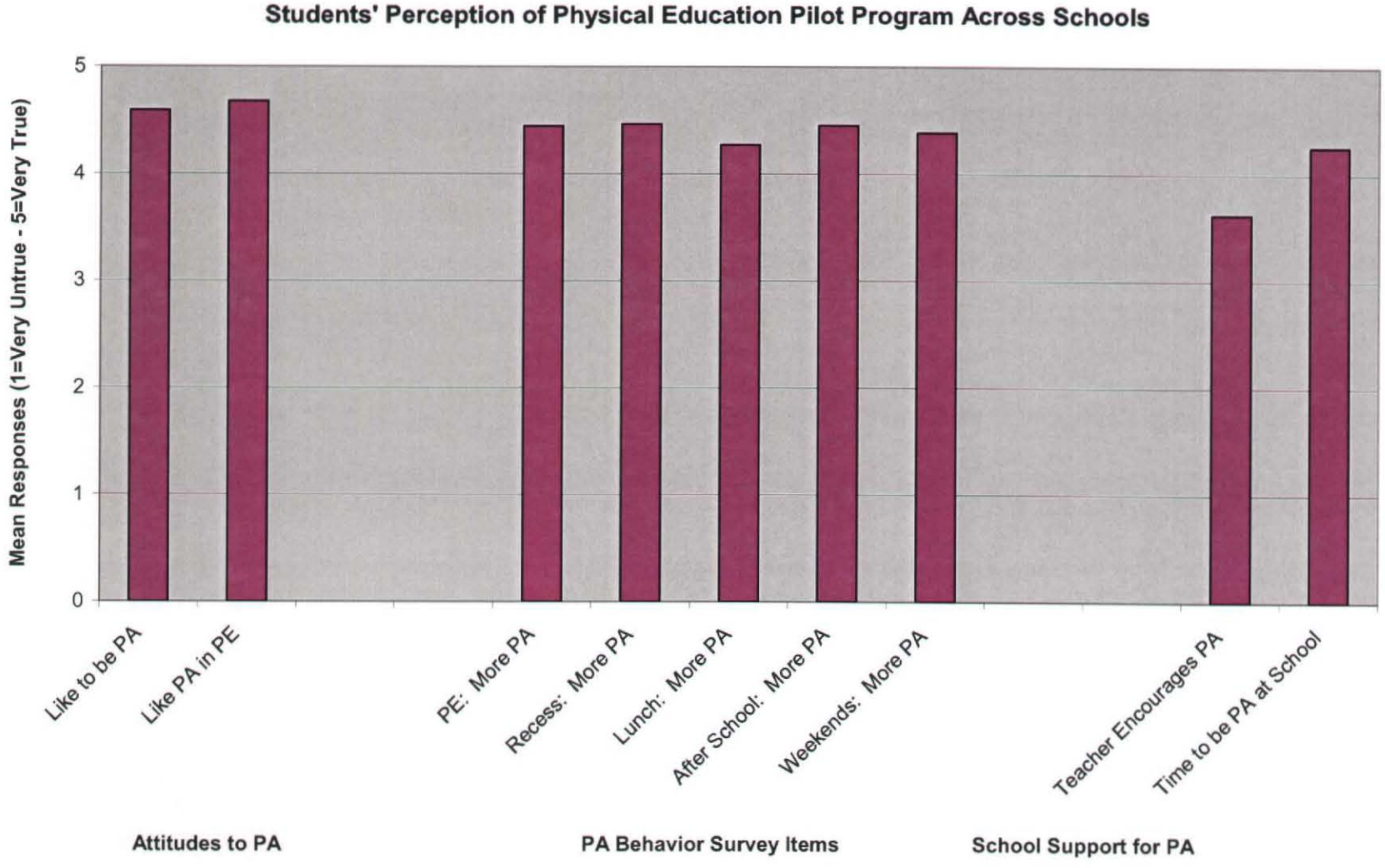
Students at School 3 answered highly favorably to questions of their perceptions of physical activity. School 3 students especially responded well to liking physical activity (4.74), liking physical activity in Physical Education class (4.82), and being more physically active in Physical Education (4.69) with 5 being highest positive perception score. While still a positive response, classroom teacher encouragement to be physically active had the lowest perception of 3.64 out of 5.


School 4: Students' Perception of Physical Education Pilot Program
Mean Responses (1=Very Untrue - 5=Very True)
5
4
3
2
1
0
Like to be PA
Like PA in PE
PE: More PA
Recess: More PA
Lunch: More PA
After School: More PA
Weekends: More PA
Teacher Encourages PA
Time to be PA at School
Attitudes to PA
PA Behavior Survey Items
School Support for PA

School 4: Students' Perception of Physical Education Pilot Program		
Question	Post Mean	Post SD
I like to be physically active.	4.51	0.64
I like to be physically active in PE.	4.63	0.56
I am now more physically active in PE.	4.37	0.85
I am now more physically active during recess.	4.56	0.79
I am now more physically active during lunch.	4.22	1.08
I am now more physically active after I leave school.	4.45	0.88
I am now more physically active on Saturdays and Sundays.	4.49	0.90
My classroom teacher encourages me to be physically active in the classroom.	3.30	1.50
Every day during school I have lots of time to be physically active.	4.18	0.99

Note: SD = standard deviation

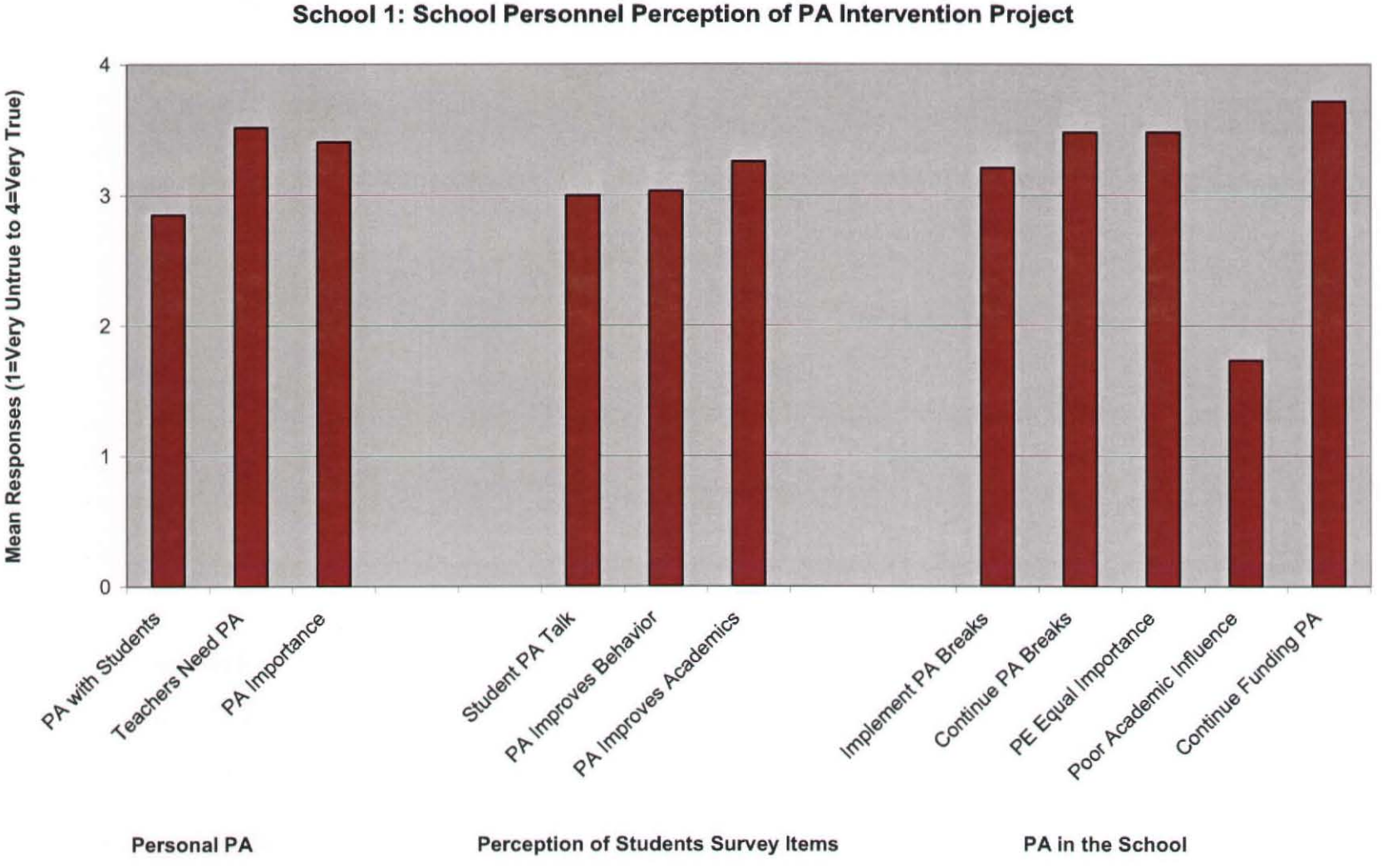
Students at School 4 generally answered favorably to questions of their perceptions of physical activity. School 4 students especially responded well to liking physical activity in Physical Education class (4.63) and being more active at recess (4.56) with 5 being highest positive perception score. While still a positive response, classroom teacher encouragement to be physically active had the lowest perception of 3.30 out of 5.


Students' Perception of Physical Education Pilot Program Across Schools
Mean Responses (1=Very Untrue - 5=Very True)
0
1
2
3
4
5
Like to be PA
Like PA in PE
PE: More PA
Recess: More PA
Lunch: More PA
After School: More PA
Weekends: More PA
Teacher Encourages PA
Time to be PA at School
Attitudes to PA
PA Behavior Survey Items
School Support for PA

Students' Perception of Physical Education Pilot Program Across Schools		
Question	Post Mean	Post SD
I like to be physically active.	4.60	0.67
I like to be physically active in PE.	4.68	0.69
I am now more physically active in PE.	4.45	0.93
I am now more physically active during recess.	4.47	0.98
I am now more physically active during lunch.	4.27	1.08
I am now more physically active after I leave school.	4.45	0.98
I am now more physically active on Saturdays and Sundays.	4.39	1.06
My classroom teacher encourages me to be physically active in the classroom.	3.62	1.49
Every day during school I have lots of time to be physically active.	4.26	1.08

Note: SD = standard deviation

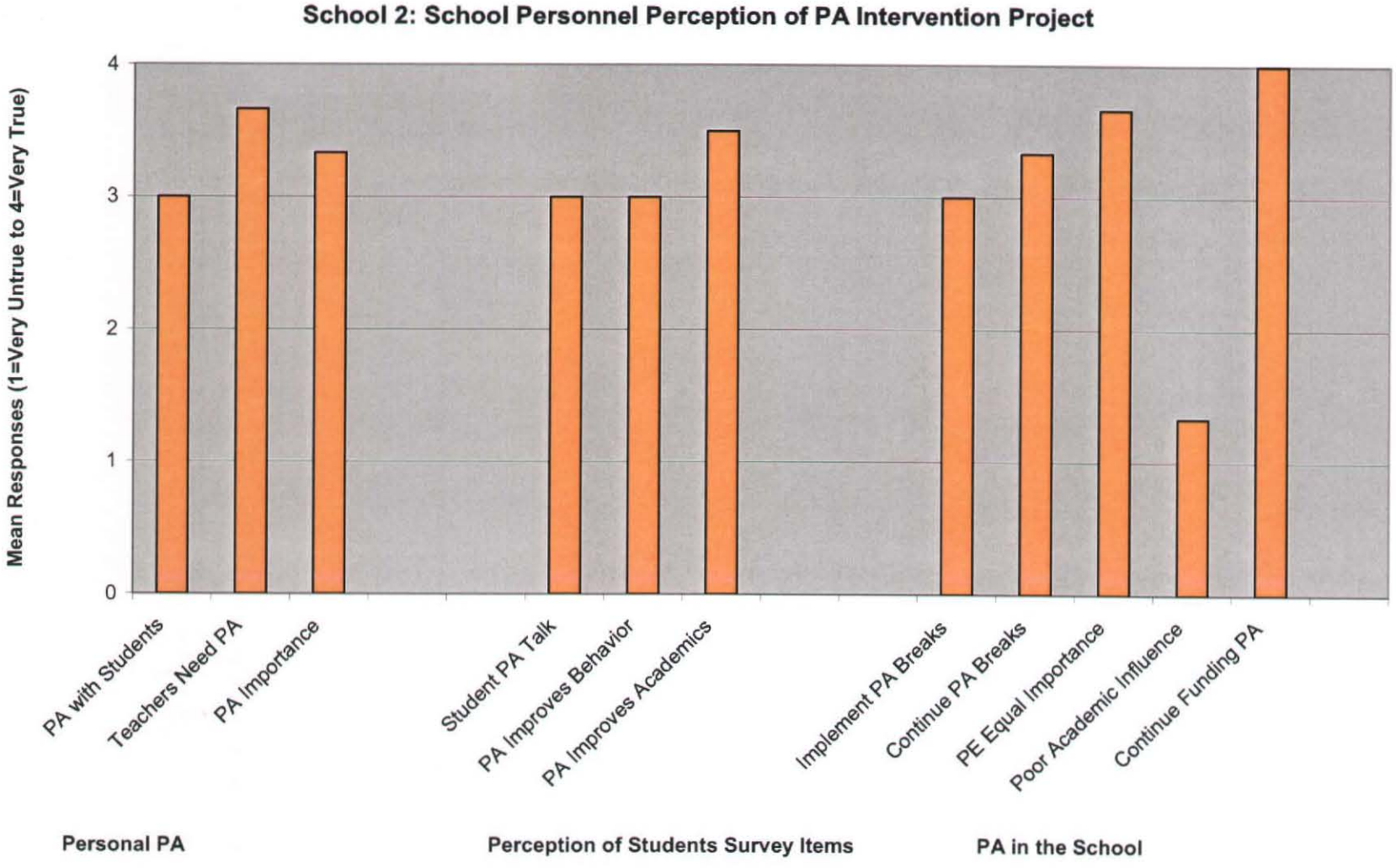
Students across all schools were given a survey of their perceptions of physical activity after the Physical Education Pilot Program. Students scored their responses on a picture scale (which was later converted to numerical) with 1 being a very negative/untrue response and a 5 being a very positive/true response. Students overwhelmingly responded favorably to physical activity with highest positives in liking to be physically active in Physical Education (4.68) and in general, liking to be physically active (4.60). Across all schools, the lowest, yet still favorable area was that of their classroom teachers encouraging them to be physically active (3.62).


School 1: School Personnel Perception of PA Intervention Project
Mean Responses (1=Very Untrue to 4=Very True)
4
3
2
1
0
PA with Students
Teachers Need PA
PA Importance
Student PA Talk
PA Improves Behavior
PA Improves Academics
Implement PA Breaks
Continue PA Breaks
PE Equal Importance
Poor Academic Influence
Continue Funding PA
Personal PA
Perception of Students Survey Items
PA in the School

School 1: School Personnel Perception of Physical Education Pilot Program		
Question	Post Mean	Post SD
I regularly participate in physical activity with the students during the school day.	2.85	0.94
Daily physical activity breaks are needed for teachers as well.	3.52	0.57
I now understand better the importance of daily physical activity for children.	3.41	0.61
My/our students frequently talk about keeping themselves healthy and physically active.	3.00	0.67
My/our students are better behaved because of the increased number physical activities throughout the school day.	3.03	0.82
My/our students have a better academic performance because of the increased number of physical activities throughout the day.	3.26	0.68
I have consistently implemented the use of classroom-based physical activity breaks.	3.21	0.78
I am happy to continue using classroom-based physical activity breaks.	3.48	0.71
For me, time for students in Physical Education is as important as time in classroom subjects (e.g., Math, Reading, & Writing).	3.48	0.63
I believe that the increased emphasis on physical activity is taking away from classroom subjects.	1.73	0.74
Our school should do everything possible to continue funding current efforts to promote our students' physical activity during the school day.	3.72	0.52

Note: SD = standard deviation

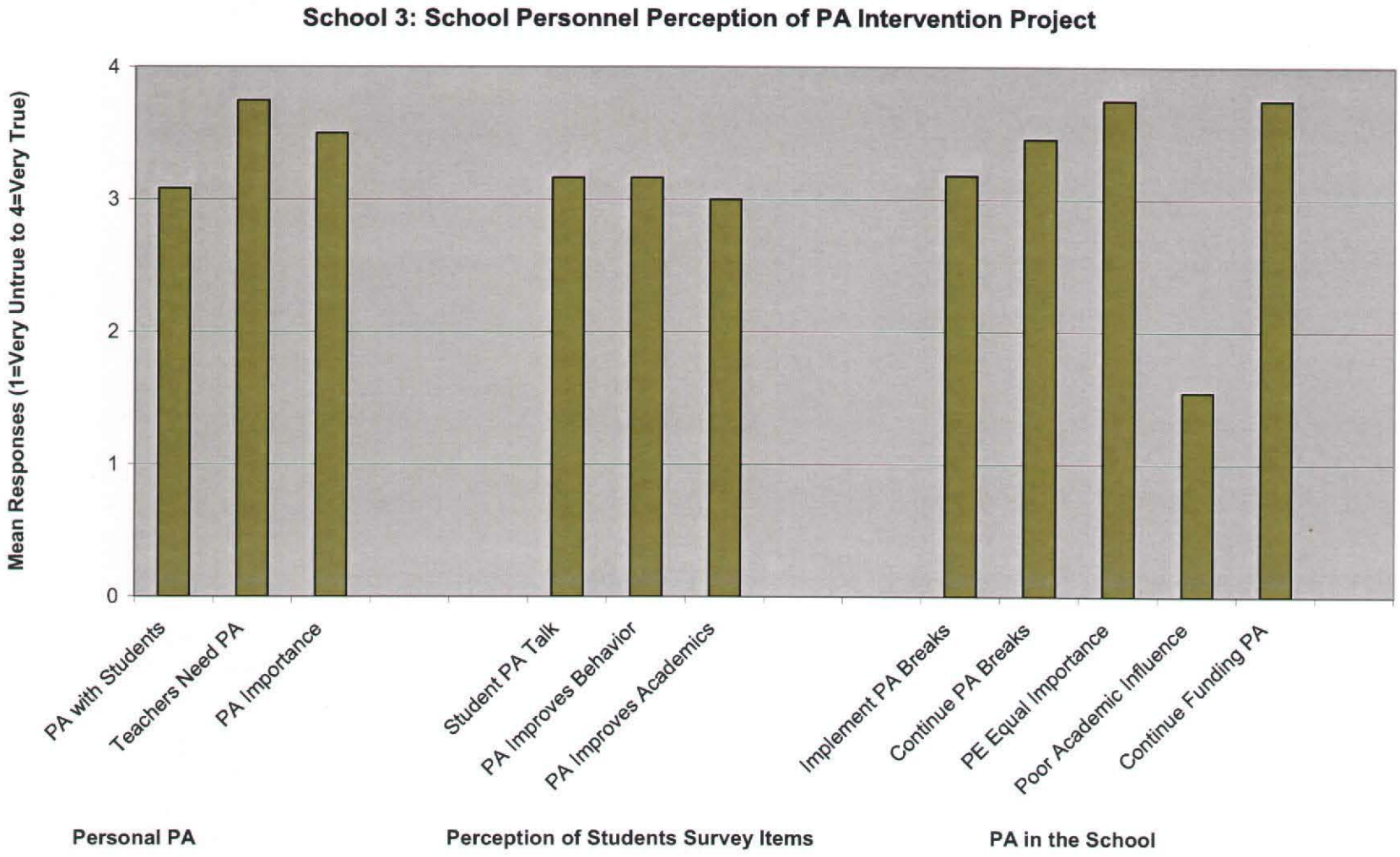
School 1 personnel generally responded favorably to changes within the school as a result of the Physical Education Pilot Program. Personnel especially recognized needing physical activity for teachers (3.52), being happy to continue to use classroom time for physical activity breaks (3.48), and the value of Physical Education time as equal to classroom subjects (3.48) as high areas of positive perceptions. Personnel also highly recommended working to continue current funding to promote students' physical activity at school (3.72). Disagreeing with physical activity taking away classroom time (1.73) was another highly favorable response from personnel at School 1.


School 2: School Personnel Perception of PA Intervention Project
Mean Responses (1=Very Untrue to 4=Very True)
4
3
2
1
0
PA with Students
Teachers Need PA
PA Importance
Student PA Talk
PA Improves Behavior
PA Improves Academics
Implement PA Breaks
Continue PA Breaks
PE Equal Importance
Poor Academic Influence
Continue Funding PA
Personal PA
Perception of Students Survey Items
PA in the School

School 2: School Personnel Perception of Physical Education Pilot Program		
Question	Post Mean	Post SD
I regularly participate in physical activity with the students during the school day.	3.00	1.00
Daily physical activity breaks are needed for teachers as well.	3.67	0.58
I now understand better the importance of daily physical activity for children.	3.33	0.58
My/our students frequently talk about keeping themselves healthy and physically active.	3.00	0.00
My/our students are better behaved because of the increased number physical activities throughout the school day.	3.00	1.00
My/our students have a better academic performance because of the increased number of physical activities throughout the day.	3.50	0.71
I have consistently implemented the use of classroom-based physical activity breaks.	3.00	0.00
I am happy to continue using classroom-based physical activity breaks.	3.33	0.58
For me, time for students in Physical Education is as important as time in classroom subjects (e.g., Math, Reading, & Writing).	3.67	0.58
I believe that the increased emphasis on physical activity is taking away from classroom subjects.	1.33	0.58
Our school should do everything possible to continue funding current efforts to promote our students' physical activity during the school day.	4.00	0.00

Note: SD = standard deviation

School 2 personnel responded fairly favorably to changes within the school as a result of the Physical Education Pilot Program. Personnel unanimously recommended working to continue current funding to promote students' physical activity at school (4.00). Personnel also especially recognized the need for physical activity for teachers (3.67), better academic performance of students as a result of increased physical activities throughout the day (3.50), and the value of Physical Education time as equal to classroom subjects (3.67) as high areas of positive perceptions. Disagreeing with physical activity taking away classroom time was another highly favorable response from personnel at School 2 (1.33).


School 3: School Personnel Perception of PA Intervention Project
Mean Responses (1=Very Untrue to 4=Very True)
4
3
2
1
0
PA with Students
Teachers Need PA
PA Importance
Student PA Talk
PA Improves Behavior
PA Improves Academics
Implement PA Breaks
Continue PA Breaks
PE Equal Importance
Poor Academic Influence
Continue Funding PA
Personal PA
Perception of Students Survey Items
PA in the School

School 3: School Personnel Perception of Physical Education Pilot Program		
Question	Post Mean	Post SD
I regularly participate in physical activity with the students during the school day.	3.08	0.51
Daily physical activity breaks are needed for teachers as well.	3.75	0.45
I now understand better the importance of daily physical activity for children.	3.50	0.67
My/our students frequently talk about keeping themselves healthy and physically active.	3.17	0.83
My/our students are better behaved because of the increased number physical activities throughout the school day.	3.17	0.58
My/our students have a better academic performance because of the increased number of physical activities throughout the day.	3.00	0.67
I have consistently implemented the use of classroom-based physical activity breaks.	3.18	0.40
I am happy to continue using classroom-based physical activity breaks.	3.45	0.52
For me, time for students in Physical Education is as important as time in classroom subjects (e.g., Math, Reading, & Writing).	3.75	0.45
I believe that the increased emphasis on physical activity is taking away from classroom subjects.	1.55	0.52
Our school should do everything possible to continue funding current efforts to promote our students' physical activity during the school day.	3.75	0.45

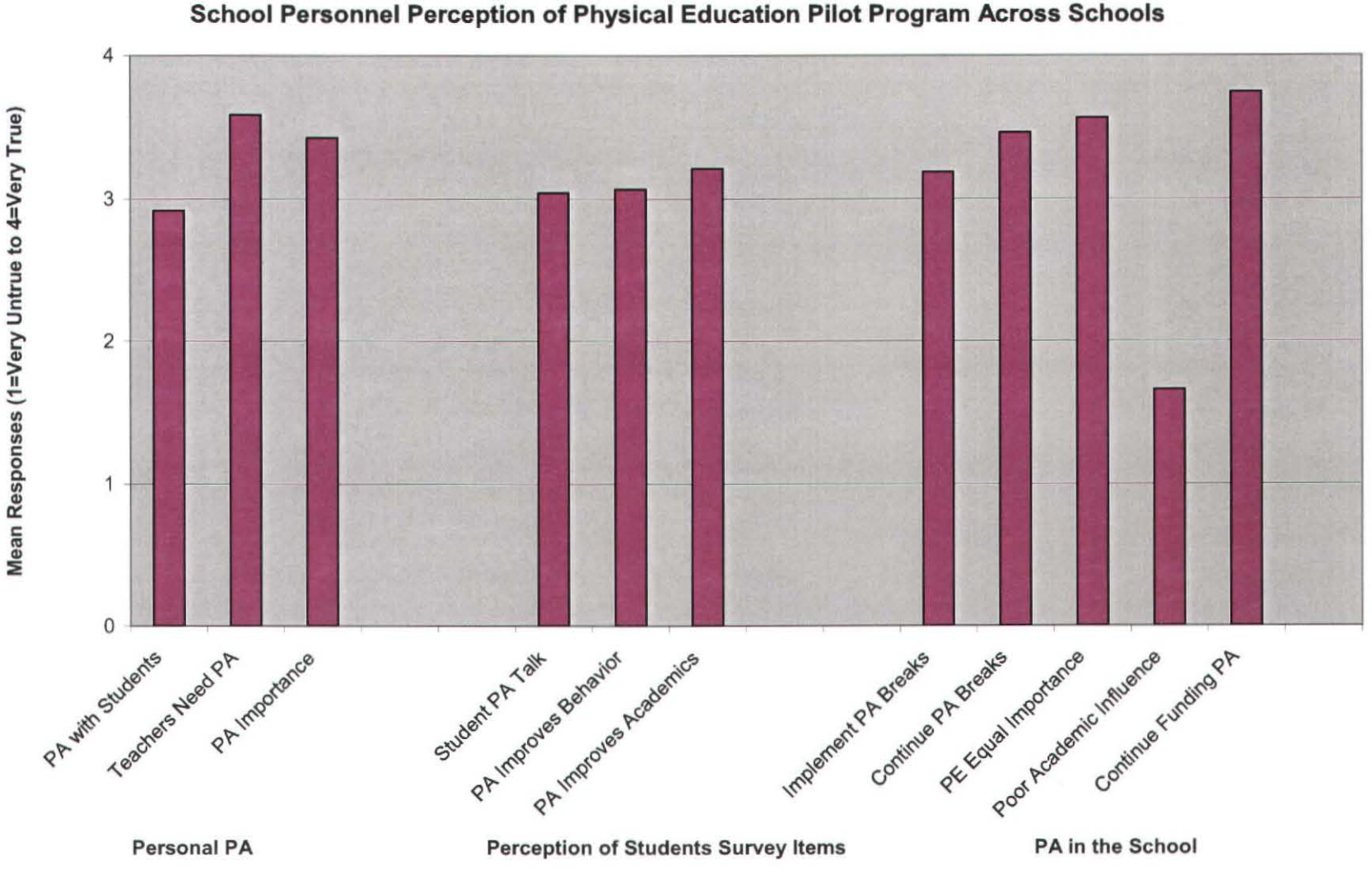
Note: SD = standard deviation

School 3 personnel generally responded favorably to changes within the school as a result of the Physical Education Pilot Program. Personnel especially recognized needing physical activity for teachers (3.75), understanding importance of daily physical activity for children (3.50), and the value of Physical Education time as equal to classroom subjects (3.75) as high areas of positive perceptions. Personnel also highly recommended working to continue current funding to promote students' physical activity at school (3.75). Disagreeing with physical activity taking away classroom time (1.55) was another highly favorable response from personnel at School 3.

School 4: School Personnel Perception of Physical Education Pilot Program		
Question	Post Mean	Post SD
I regularly participate in physical activity with the students during the school day.	No Data Available	No Data Available
Daily physical activity breaks are needed for teachers as well.		
I now understand better the importance of daily physical activity for children.		
My/our students frequently talk about keeping themselves healthy and physically active.		
My/our students are better behaved because of the increased number physical activities throughout the school day.		
My/our students have a better academic performance because of the increased number of physical activities throughout the day.		
I have consistently implemented the use of classroom-based physical activity breaks.		
I am happy to continue using classroom-based physical activity breaks.		
For me, time for students in Physical Education is as important as time in classroom subjects (e.g., Math, Reading, & Writing).		
I believe that the increased emphasis on physical activity is taking away from classroom subjects.		
Our school should do everything possible to continue funding current efforts to promote our students' physical activity during the school day.		

Note: SD = standard deviation

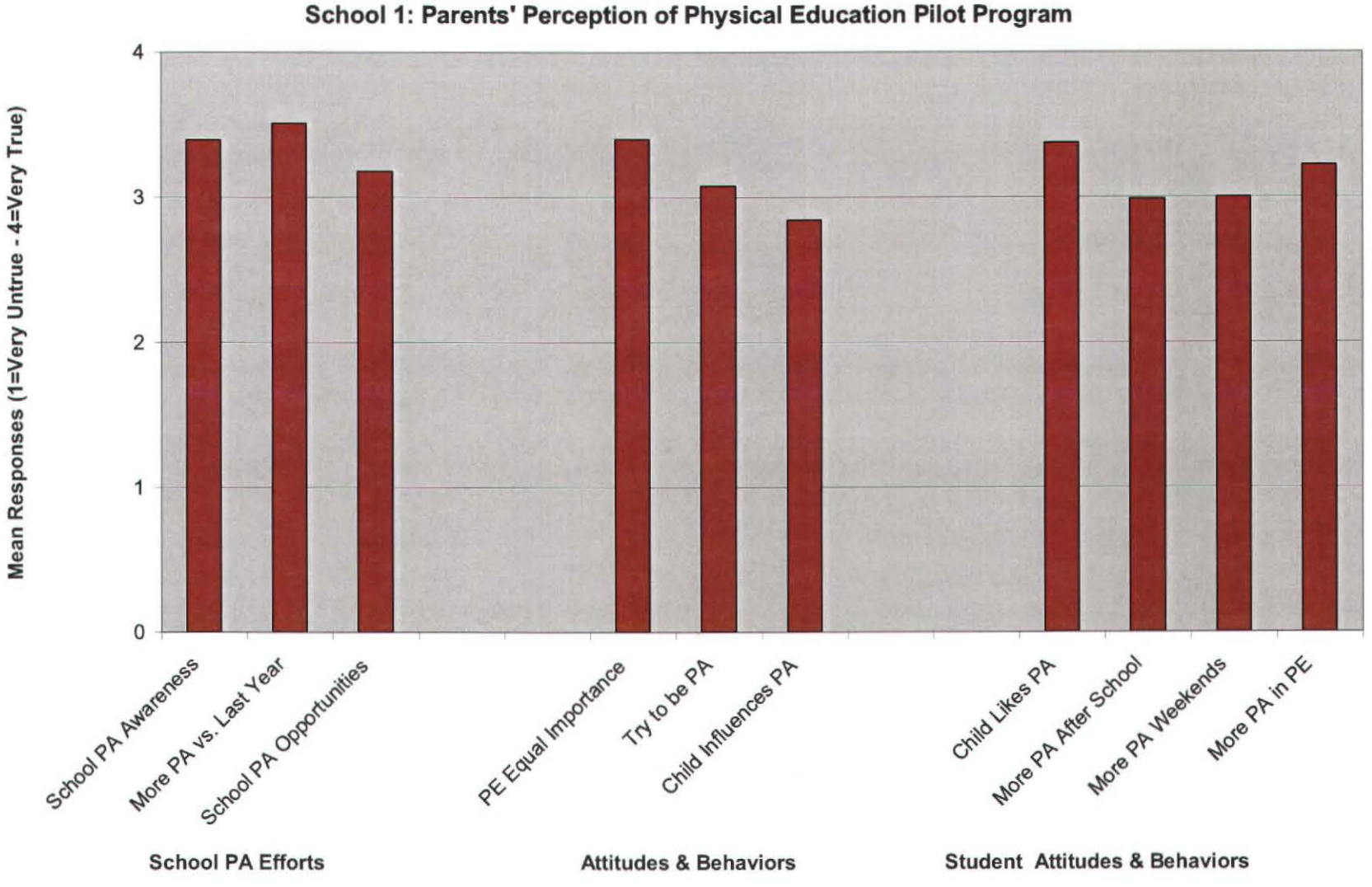
No school personnel perception data was provided from School 4 due to administrative changes, long-term substitutes, teacher injuries, and other factors beyond the program or school's control.


School Personnel Perception of Physical Education Pilot Program Across Schools
Mean Responses (1=Very Untrue to 4=Very True)
4
3
2
1
0
PA with Students
Teachers Need PA
PA Importance
Student PA Talk
PA Improves Behavior
PA Improves Academics
Implement PA Breaks
Continue PA Breaks
PE Equal Importance
Poor Academic Influence
Continue Funding PA
Personal PA
Perception of Students Survey Items
PA in the School

School Personnel Perception of Physical Education Pilot Program		
Question	Post Mean	Post SD
I regularly participate in physical activity with the students during the school day.	2.92	0.85
Daily physical activity breaks are needed for teachers as well.	3.59	0.54
I now understand better the importance of daily physical activity for children.	3.43	0.62
My/our students frequently talk about keeping themselves healthy and physically active.	3.04	0.69
My/our students are better behaved because of the increased number physical activities throughout the school day.	3.06	0.76
My/our students have a better academic performance because of the increased number of physical activities throughout the day.	3.21	0.67
I have consistently implemented the use of classroom-based physical activity breaks.	3.18	0.65
I am happy to continue using classroom-based physical activity breaks.	3.46	0.64
For me, time for students in Physical Education is as important as time in classroom subjects (e.g., Math, Reading, & Writing).	3.57	0.58
I believe that the increased emphasis on physical activity is taking away from classroom subjects.	1.66	0.68
Our school should do everything possible to continue funding current efforts to promote our students' physical activity during the school day.	3.74	0.49

Note: SD = standard deviation

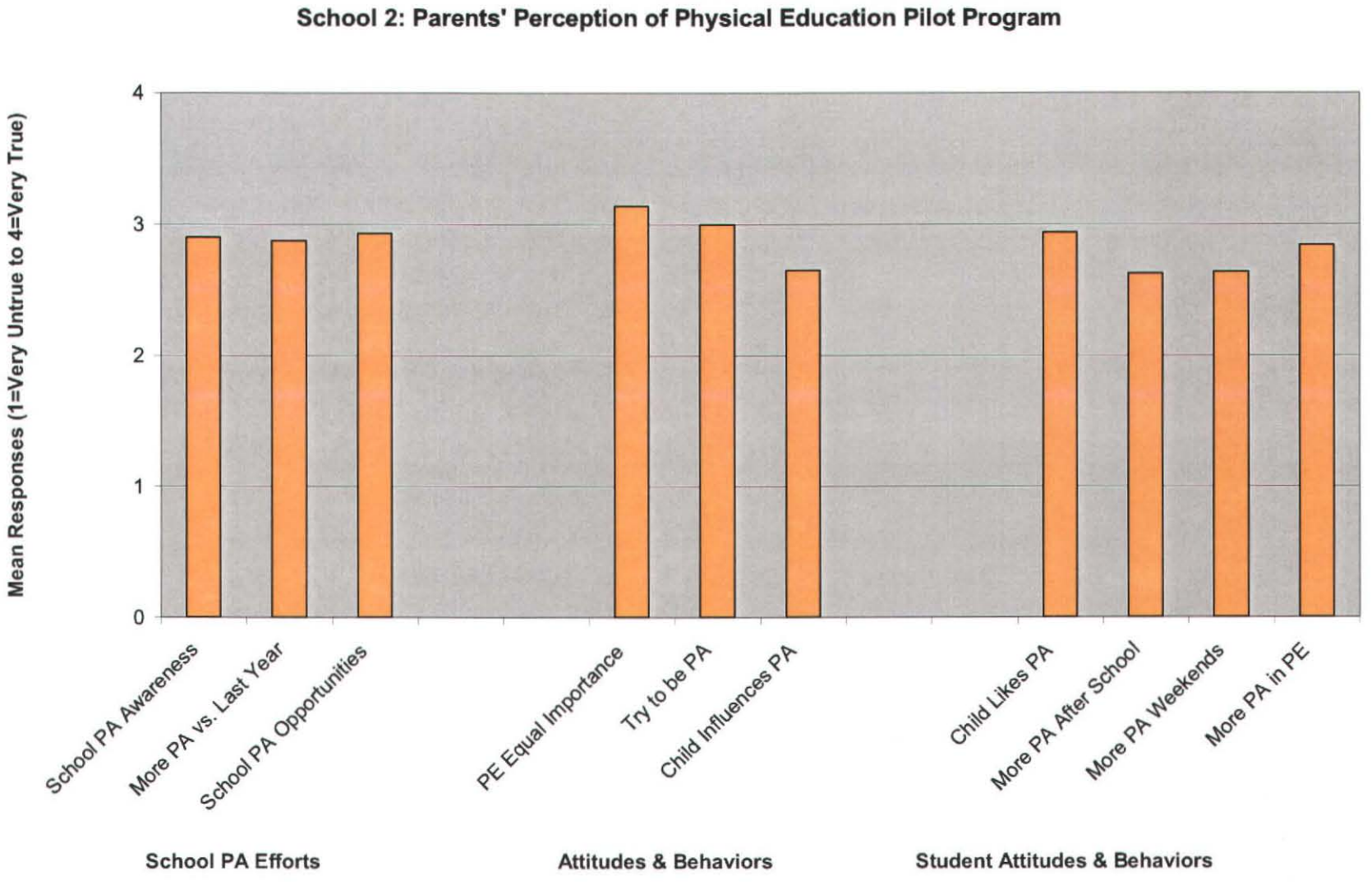
School personnel across all schools were given a survey of their perception of physical activity after the Physical Education Pilot Program. Personnel scored their responses on a scale of 1 being a very negative/untrue response and a 4 being a very positive/true response. Personnel responded highest to the need for daily physical activity breaks for teachers (3.59), valuing Physical Education time as much as classroom subject time (3.57), and doing everything possible to continue funding for promotion for student physical activity in the school day (3.74). Also, school personnel across schools responded positively to physical activity in disagreeing that increased emphasis on physical activity takes away from classroom subjects (1.66).


School 1: Parents' Perception of Physical Education Pilot Program
Mean Responses (1=Very Untrue - 4=Very True)
4
3
2
1
0
School PA Awareness
More PA vs. Last Year
School PA Opportunities
PE Equal Importance
Try to be PA
Child Influences PA
Child Likes PA
More PA After School
More PA Weekends
More PA in PE
School PA Efforts
Attitudes & Behaviors
Student Attitudes & Behaviors

School 1: Parents' Perception of Physical Education Pilot Program		
Question	Post Mean	Post SD
I am very aware of the increased focus of promoting daily physical activity at my child's school.	3.40	0.66
Currently, my child's school is doing more to promote daily physical activity during the school day than last year.	3.51	0.62
My child has lots of opportunities to be physically active during school times.	3.18	0.61
I believe Physical Education is as important as classroom subjects (e.g., Math, Reading, and Writing).	3.40	0.64
I try to be physically active with my child.	3.08	0.71
Because of my child, I am more physically active.	2.84	0.73
My child always likes being physically active.	3.38	0.65
My child is now more physically active after school.	2.98	0.68
My child is now more physically active on weekends.	3.00	0.71
My child is now more physically active during PE.	3.22	0.68

Note: SD = standard deviation

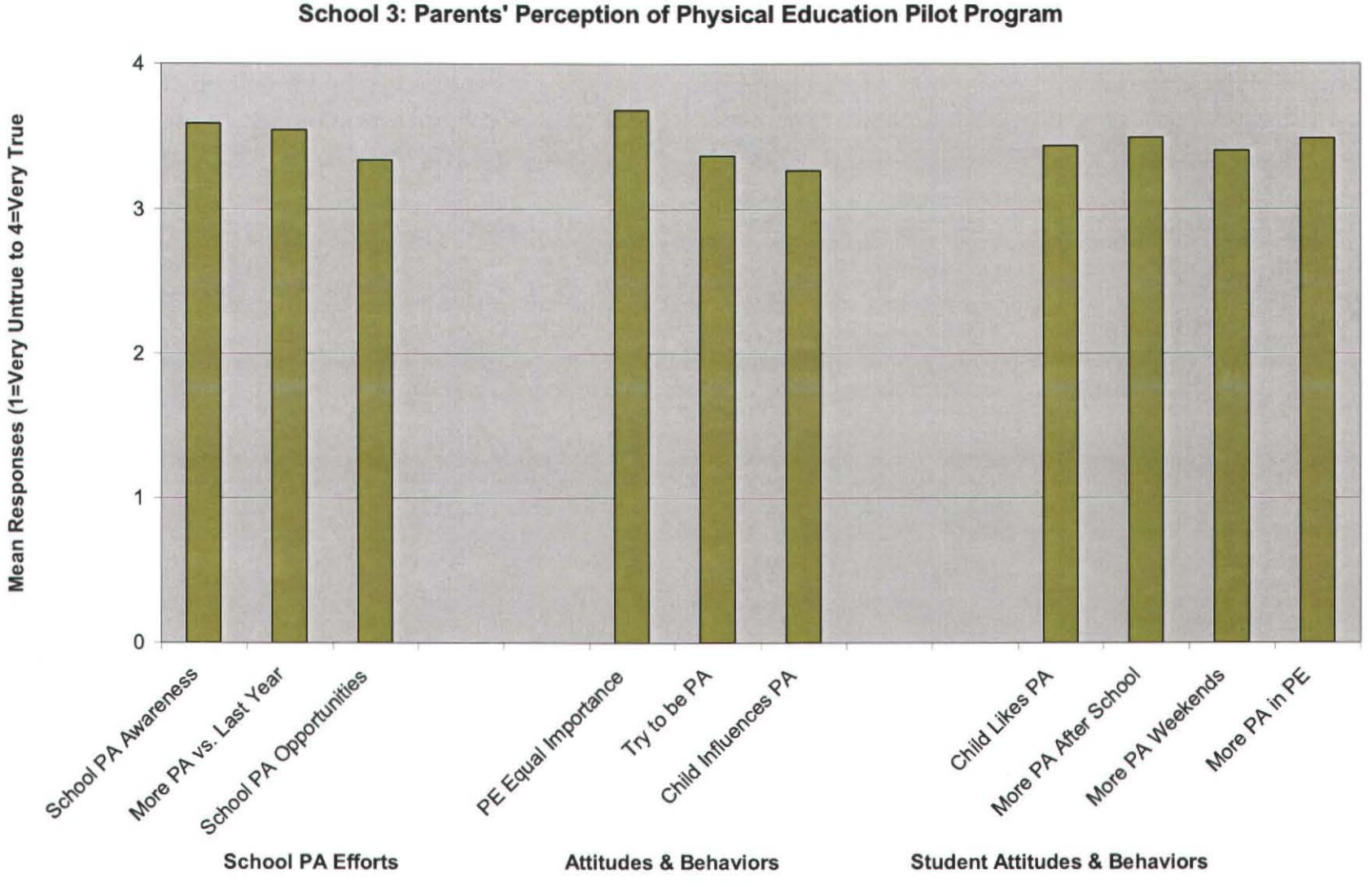
School 1 parents responded favorably to changes within the school as a result of the Physical Education Pilot Program. Parents especially recognized that their school was doing more to promote physical activity than last year (3.51) and valued Physical Education as being as important as classroom subjects (3.40). Lower response areas included personal parent physical activity improving because of their child (2.84) and their child being more active after school (2.98).


School 2: Parents' Perception of Physical Education Pilot Program
Mean Responses (1=Very Untrue to 4=Very True)
4
3
2
1
0
School PA Awareness
More PA vs. Last Year
School PA Opportunities
PE Equal Importance
Try to be PA
Child Influences PA
Child Likes PA
More PA After School
More PA Weekends
More PA in PE
School PA Efforts
Attitudes & Behaviors
Student Attitudes & Behaviors

School 2: Parents' Perception of Physical Education Pilot Program		
Question	Post Mean	Post SD
I am very aware of the increased focus of promoting daily physical activity at my child's school.	2.91	0.71
Currently, my child's school is doing more to promote daily physical activity during the school day than last year.	2.88	0.66
My child has lots of opportunities to be physically active during school times.	2.93	0.60
I believe Physical Education is as important as classroom subjects (e.g., Math, Reading, and Writing).	3.14	0.77
I try to be physically active with my child.	3.00	0.63
Because of my child, I am more physically active.	2.65	0.79
My child always likes being physically active.	2.94	0.66
My child is now more physically active after school.	2.63	0.72
My child is now more physically active on weekends.	2.64	0.73
My child is now more physically active during PE.	2.84	0.71

Note: SD = standard deviation

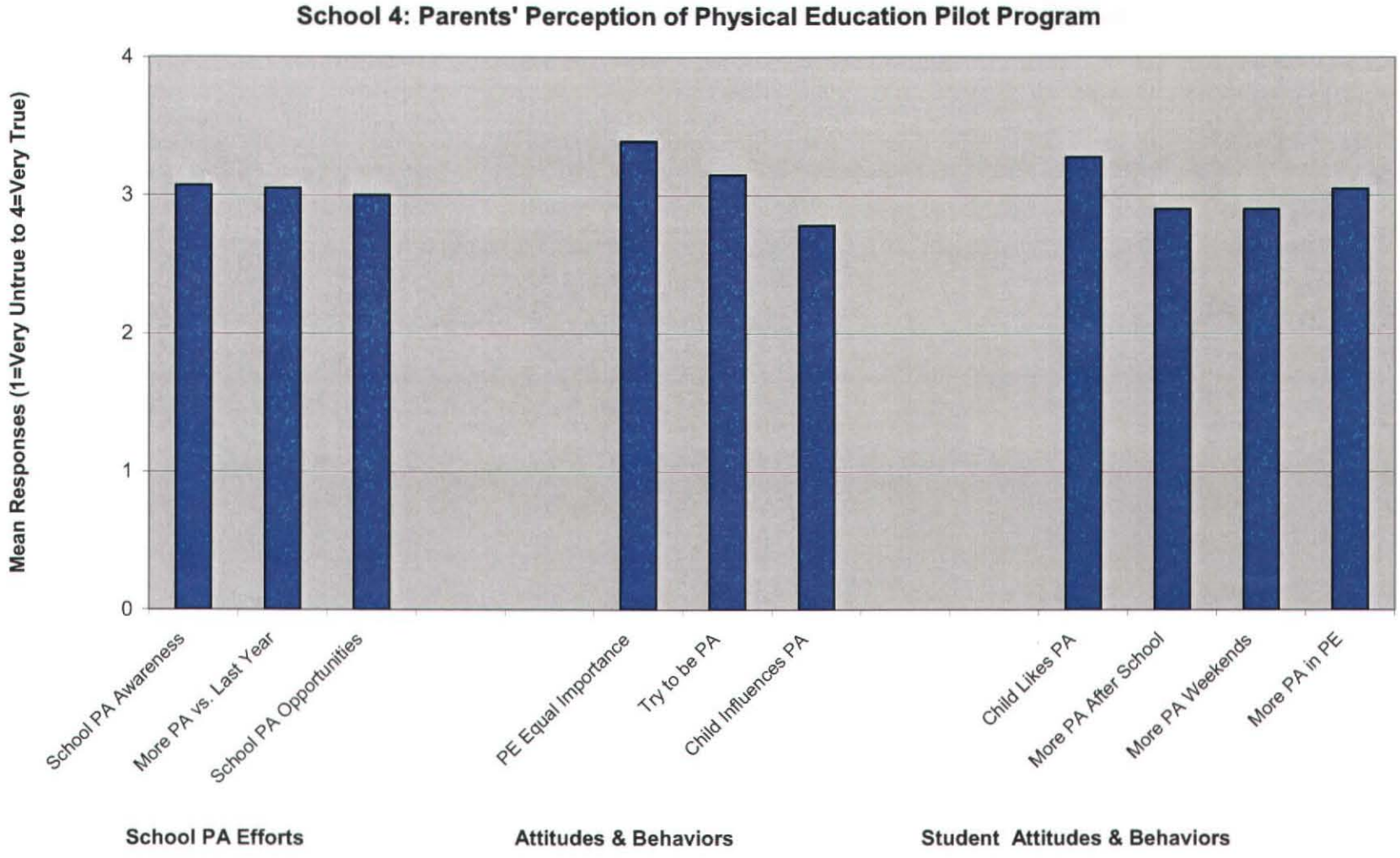
School 2 parents responded fairly favorably to changes within the school as a result of the Physical Education Pilot Program. Parents especially valued Physical Education as being as important as classroom subjects (3.14). Lower response areas included personal parent physical activity improving because of their child (2.65) and their child being more active after school (2.63) and on weekends (2.64).


School 3: Parents' Perception of Physical Education Pilot Program
Mean Responses (1=Very Untrue to 4=Very True
4
3
2
1
0
School PA Awareness
More PA vs. Last Year
School PA Opportunities
PE Equal Importance
Try to be PA
Child Influences PA
Child Likes PA
More PA After School
More PA Weekends
More PA in PE
School PA Efforts
Attitudes & Behaviors
Student Attitudes & Behaviors

School 3: Parents' Perception of Physical Education Pilot Program		
Question	Post Mean	Post SD
I am very aware of the increased focus of promoting daily physical activity at my child's school.	3.59	0.55
Currently, my child's school is doing more to promote daily physical activity during the school day than last year.	3.55	0.50
My child has lots of opportunities to be physically active during school times.	3.34	0.67
I believe Physical Education is as important as classroom subjects (e.g., Math, Reading, and Writing).	3.68	0.50
I try to be physically active with my child.	3.37	0.70
Because of my child, I am more physically active.	3.27	0.76
My child always likes being physically active.	3.44	0.61
My child is now more physically active after school.	3.49	0.59
My child is now more physically active on weekends.	3.41	0.61
My child is now more physically active during PE.	3.48	0.67

Note: SD = standard deviation

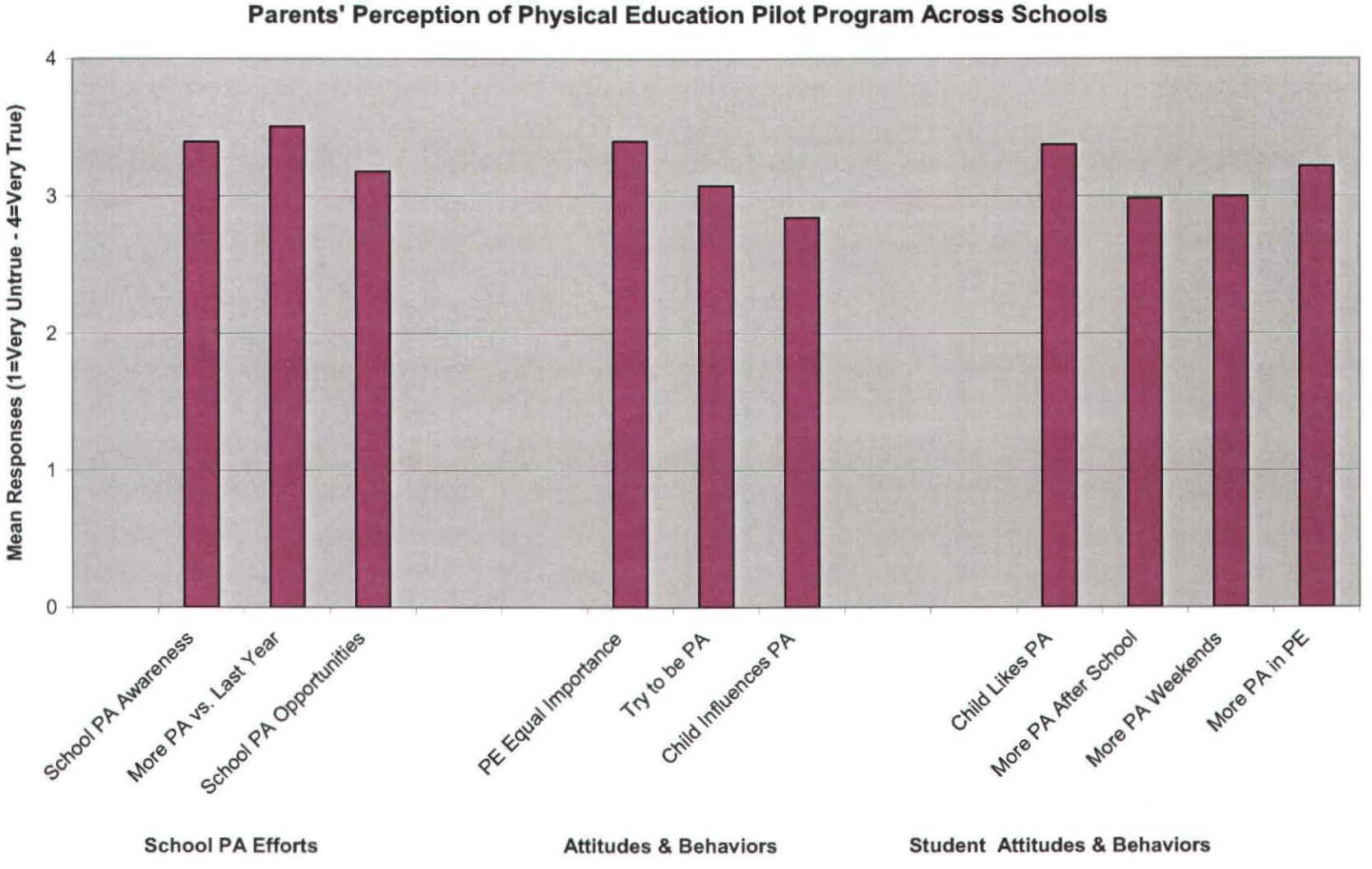
School 3 parents responded very positively across all areas to changes within the school as a result of the Physical Education Pilot Program. Parents valued Physical Education as being as important as classroom subjects (3.68). Parents also recognized the increased focus on physical activity promotion (3.59), that their school was doing more to promote physical activity than last year (3.55). The lowest response area included personal parent physical activity improving because of their child (3.27); however, this score was still quite high.


School 4: Parents' Perception of Physical Education Pilot Program
Mean Responses (1=Very Untrue to 4=Very True)
4
3
2
1
0
School PA Awareness
More PA vs. Last Year
School PA Opportunities
PE Equal Importance
Try to be PA
Child Influences PA
Child Likes PA
More PA After School
More PA Weekends
More PA in PE
School PA Efforts
Attitudes & Behaviors
Student Attitudes & Behaviors

School 4: Parents' Perception of Physical Education Pilot Program		
Question	Post Mean	Post SD
I am very aware of the increased focus of promoting daily physical activity at my child's school.	3.07	0.61
Currently, my child's school is doing more to promote daily physical activity during the school day than last year.	3.05	0.60
My child has lots of opportunities to be physically active during school times.	3.00	0.65
I believe Physical Education is as important as classroom subjects (e.g., Math, Reading, and Writing).	3.39	0.63
I try to be physically active with my child.	3.15	0.69
Because of my child, I am more physically active.	2.78	0.79
My child always likes being physically active.	3.28	0.60
My child is now more physically active after school.	2.90	0.58
My child is now more physically active on weekends.	2.90	0.62
My child is now more physically active during PE.	3.05	0.50

Note: SD = standard deviation

School 4 parents responded favorably to changes within the school as a result of the Physical Education Pilot Program. Parents especially valued Physical Education as being as important as classroom subjects (3.39) and indicated their child likes to be physically active (3.28). Lower response areas included personal parent physical activity improving because of their child (2.78) and their child being more active after school (2.90) and on weekends (2.90).


Parents' Perception of Physical Education Pilot Program Across Schools
Mean Responses (1=Very Untrue - 4=Very True)
4
3
2
1
0
School PA Awareness
More PA vs. Last Year
School PA Opportunities
PE Equal Importance
Try to be PA
Child Influences PA
Child Likes PA
More PA After School
More PA Weekends
More PA in PE
School PA Efforts
Attitudes & Behaviors
Student Attitudes & Behaviors

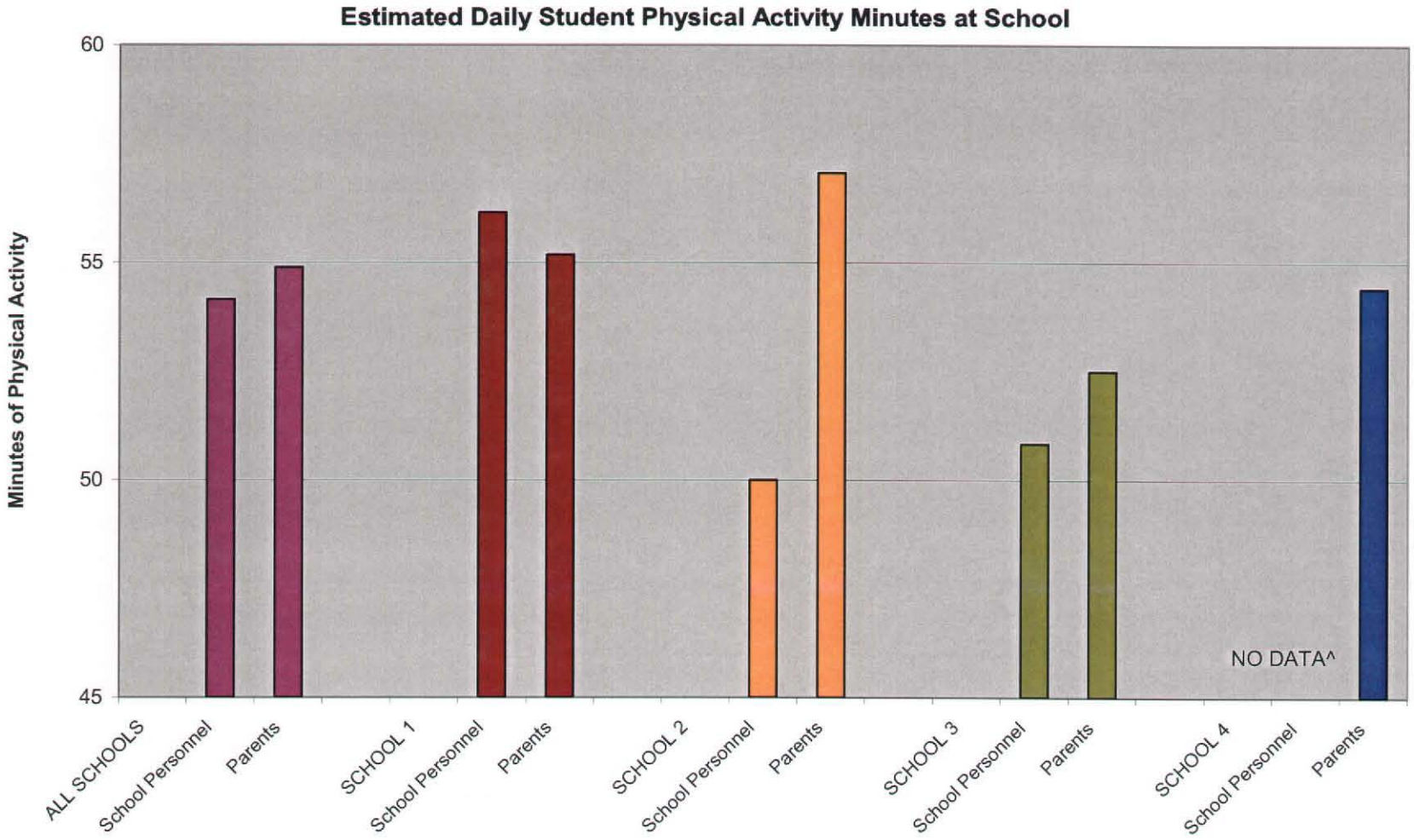
Parents' Perception of Physical Education Pilot Program Across Schools		
Question	Post Mean	Post SD
I am very aware of the increased focus of promoting daily physical activity at my child's school.	3.29	0.69
Currently, my child's school is doing more to promote daily physical activity during the school day than last year.	3.32	0.66
My child has lots of opportunities to be physically active during school times.	3.14	0.64
I believe Physical Education is as important as classroom subjects (e.g., Math, Reading, and Writing).	3.41	0.67
I try to be physically active with my child.	3.14	0.70
Because of my child, I am more physically active.	2.89	0.79
My child always likes being physically active.	3.28	0.66
My child is now more physically active after school.	3.00	0.72
My child is now more physically active on weekends.	3.00	3.00
My child is now more physically active during PE.	3.18	0.69

Note: SD = standard deviation

Parents of students in the Physical Education Pilot Program across all schools were given a survey of their perception of physical activity after the project. Parents scored their responses on a scale of 1 being a very negative/untrue response and a 4 being a very positive/true response. Across schools parents valued Physical Education as being as important as classroom subjects (3.41) Parents agreed that their child's school was doing more to promote physical activity than last year (3.32). An area in which parents scored lower was being more physically active because of their children (2.89). In comparing scores between schools, School 3 had an overwhelmingly positive response to the program with an average score of 3.5 in all areas.

Physical Education Pilot Grant Program

PERCEPTION OF STUDENT PHYSICAL ACTIVITY TIME AT SCHOOL BY SCHOOL PERSONNEL & PARENTS



^ = personnel data was not available from School 4 due to administrative changes, long-term substitutes, teacher injuries, and other factors beyond the program or school's control

Estimated Daily Student Physical Activity Minutes at School				
	School Personnel Estimate		Parent Estimate	
School	Post Mean	Post SD	Post Mean	Post SD
Across All Schools	54.15	13.22	54.89	19.46
School 1	56.15	13.88	55.18	17.45
School 2	50.00	20.00	57.07	21.93
School 3	50.83	9.96	52.50	21.99
School 4	No data	No data	54.41	16.73

Note: SD = standard deviation

Parents and school personnel were asked to estimate in minutes how much physical activity students participated in throughout a given school day during the post-intervention stage of the project. Interestingly, across all schools, parents and school personnel estimated a near identical amount of student physical activity which was close to 55 minutes. Looking at individual schools, school personnel estimates vs. parent estimates were also quite similar. School 2 had the biggest difference (about 7 minutes) between the two groups of respondents. No school personnel perception data was provided from School 4 due to administrative changes, long-term substitutes, teacher injuries, and other factors beyond the program or school's control.

Physical Education Pilot Grant Program

ACTIVITY BREAKS

Activity Breaks

Activity breaks in this project are breaks during regular classroom time which are implemented by classroom teachers. These breaks were from 5-10 minutes long and would be comprised of activity time that would get students out of their seats and physically active in the classroom. Some schools purchased pre-made activity break cards, while other teachers and schools developed their own activity break sessions.

Data from teachers who reported the number of activities taught is reported together. This graph includes data from six teachers from School 2, one teacher from School 1 and 31 teachers from School 4. School 3 teachers did track their classroom activities; however this tracking was in a manner that would not allow sufficient activity break information to be compared to the other schools. Teachers incorporated either recess or classroom activities into their curriculum. The number of activities taught by school is best illustrated by the following table:

Number of Activity Breaks in Physical Education Pilot Program

School	# of Teachers	Sep-07	Oct-07	Nov-07	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08	May-08
School 1	1	12	8	-	-	-	11	9	10	-
School 2	6	40	73	3	-	8	64	46	-	-
School 3	Activity break data was insufficient to report.									
School 4*	31	-	-	-	201	286	311	244	235	80

*Note: The data presented in this table incorporates all 6th grades from School 4 (K-5) which leads to the large number of activities taught relative to the other two schools.

Physical Education Pilot Grant Program

INTERVIEWS WITH SCHOOL PERSONNEL, ADMINISTRATORS, & PARENTS

Interview Findings

Below are findings from our investigation into the perspectives teachers held of their schools' one year implementation of a Physical Education Pilot Program. Four elementary schools in the state of Arizona each proposed a plan to supplement and/or overhaul their physical education programs in an effort to increase opportunities, knowledge and the positive habits associated with healthy and active lifestyles. Each school will be described by number (e.g., school one, school two, etc.) and all names below are pseudonyms. While each school implemented independent proposals, a few themes emerged that showed to cut across the distinctive nature of each school. Those themes were educating the whole child including the adoption of healthy and active lifestyles; children and community wellness; physical activity and academics; and change, resources, and sustainability.

Educating the Whole Child--Adoption of Healthy and Active Lifestyles: An initial and important finding of this investigation was that most of the personnel interviewed for this project (teachers, administrators, support staff, paraprofessionals, and students) had a clear understanding of why they felt their schools Physical Education Pilot Programs were important. For example,

> The sedentary lifestyle with playing video games and watching television, I think, is definitely a component of kids being inactive and increased childhood obesity…Everyone who is involved with education knows that childhood obesity and inactivity rates are up so I see this as a catalyst to kind of make the pendulum swing the other way, to get kids more active and have them be aware of changing their lifestyle or eating habits. (James, PE teacher)

As seen above, the idea of fostering healthy and active lifestyles was most often discussed as the justification for increasing physical activity and health education/opportunities for all the school children. In conjunction with this, the idea of children's health was not a static stand alone reason unto itself. Good health was also viewed something of value because of how it spilled into other areas of life. For example, Laura, a PE teacher discussed,

> I would say long term it is important for these kids to learn healthy habits. And…they will need to be active for life and that it's going to lead to affecting every aspect of health, and the world could benefit from it, and their careers.

Many teachers viewed teaching the "whole" of each child, and viewed each area of the school day as affecting a child's experience and development. In reference to this project, many teachers believe a healthy child would perform better academically.

> I think we have to not just teach kids academically, but they need to be physically fit too, and this will help their academic scores…So to be

> healthy in your school it's not just academically, it's physically, it's emotionally and it's socially and we try to attack every part of that. We go back to the well-rounded kid. (Mr. Smith, administration)

Children and Community Wellness: Overwhelmingly teachers perceived their school's Physical Education Pilot Program to be a sound success in its ability to have a positive impact on their students. Teachers viewed their Physical Education Pilot Programs as an important step in changing a culture that they viewed to be designed in opposition to a healthy and active lifestyle.

> One of our biggest goals was to try and change the whole culture of the school to be a physically active school and in doing so implementing various programs... in order to try and change not only the perspective in the school setting of the importance of living a healthy and active lifestyle but also from the community's perspective as to what we're doing here. (Laura, PE teacher)

Teachers had hope for programs like this to have their effects spill into the larger families and communities their students come from. For example,

> I think the physical education program in the school can set the foundation in place and the next piece is that information gets disseminated to the community so that we make it a community effort. If all of it sits set with us, then there is not going to be changes in lifestyle. It has to be a community effort. (Laura, PE teacher)

However some were very aware that it takes more than singular school programs to change larger societal issues. The issues surrounding physical inactivity and unhealthy behaviors are all tied to larger political and economic forces.

> We have gotten so many incredible things for our school that our kids would never have been able to experience, particularly because they are from a lower socio-economic status, so keeping that in mind, knowing our particular school, our kids outside of school are not going to have the opportunities to be involved with gymnastics or experience a rock-climbing wall at their gymnastics club, be in organized sports, because of cost. It is poverty. Our school has a high percentage lower socio-economic status students. (James, PE teacher)

Physical Activity and Academic Relationships: Teachers discussed often the positive relationship between a healthy body and a healthy mind. Physical activity and good nutrition were two components most often discussed as being important to bodily health.

> A healthy body leads to a healthy mind. The healthier a child is, the more attention they can pay to their studies, the more aware of their surroundings they are. We also [in conjunction with everyday PE] have a

> program where children get breakfast in the morning. Some kids at home don't always get to eat breakfast in the morning. Nutrition is important. (Charles, PE)

Teachers discussed classroom based physical activity breaks and the benefits these breaks had on students' academic work. For example, Monica, a fifth grade teacher discussed,

> I think it does help them focus because like I said, the glazed over look is something we start to see early in the morning, all the way through the afternoon and this gets them up and moving around. They're more productive if they get a break.

Many teachers often discussed multiple values associated with taking a minute to "get the wiggles out."

> I like doing it [activity breaks]. I like doing it because you can tell when the kids are getting a little antsy and they just check out and so that's kind of a nice way to get them out of their seat, get them moving and then get right back to work. (Brittany, 1st grade teacher)

> It's a really good outlet…they're not only exercising and doing active things but they're also getting out their extra energies and they're not going crazy sitting at their seat, so it gives them a boost to do their academic work instead of lollygagging around (Jaimie, 1st grade teacher)

However teachers described great variance in how they would "do" these breaks, with a continuum of teachers who would use a variety of program provided activity cards,

> I started looking at the activity cards and there were a few on there that they love and some of them they hated…Sherlock Holmes was the first one we did and they loved it…They really loved the volleyball…They beanbag balance relay, that didn't work. (Julie, 6th grade teacher)

And those who would make up "little games" on the spot.

> I thought it was really good [the activity breaks] and I think the kids really benefited from it. I did not use all the activities in the activity card. I basically did my own thing with them. We played a lot of volleyball that was fun; they loved it. (Betty, 4th grade teacher)

Some teachers also discussed the ease of implementing these breaks,

> They don't really require much equipment and you can just drop what you're doing and take a ten minute break and do an activity and go back to what you're doing. I think it helps them focus and I really think it has been successful. (Julie, 6th grade teacher)

One school had a special wellness room set up with a very popular dance program called Dance Dance Revolution, otherwise known as DDR. Teachers could sign their classes up for fifteen minute sessions, with some teachers being identified as "regulars." A large reason for their popularity was the utility of these activities to help refocus students finding it hard to concentrate.

> When we're trying to conquer particular objectives when the kids are really like, oh wow, you can see that glazed look in their eyes and you can tell you know those kids that work really hard and try so hard and they're confused and they're about to cry because they are stuck. So physically it does get the wiggles out, and for some they need that mental break. (Joseph, 3rd grade teacher)

It was also used as a motivational carrot to entice kids to behave during class, as Sam (2nd grade) noted, "they knew if they got through testing or we got through some big activity where they had to be behaved that we could go use the wellness center..." These breaks however, took place within the contextual reality of a contemporary classroom. Namely time was always short, and anything not directly addressing high-stakes standardized tests was at times viewed as having to be "squeezed in."

Structured recess zones were a popular piece that schools one, three and four implemented in their Physical Education Pilot Programs. These zones were viewed to help decrease the amount of behavioral issues and also to increase physical activity among students, especially for those students not traditionally very active:

> I used to have to deal with a lot of behavioral issues when we came back from recess because we are not out there with them and I typically don't have as many of those situations, those clique things, those little girl situations because I think [with the structured recess zones] they are busy and have activities to do. So I think that is one huge thing I've noticed and I think in general they are just much more active period. (Jenny, 3rd grade) I man the ones who especially are not like super, super physically active, you know, the ones who are more inclined to bowl or to play scoops and balls...at least they are doing something, whereas, if they didn't have that they could be just standing around under the shade. (Sara, physical activity aid)

Change, Resources and Sustainability: Closely tied to economic realities are the sustainability aspects of a program. Teachers were very aware that their school's Physical Education Pilot Programs were one year only and many expressed emotions of fear and frustration at the thought of not having what they have had this year. Patti a fourth grade teacher, discussed,

> I think it's been great and I would hate to see it not be here next year. That concerns me a little bit because I think it's been such a great program, [it is hard] to think we might not have that next year, I think would be a drag.

One teacher on the possibility of losing their PE teacher,

> I wish we could keep our PE program. It doesn't really sound like we're going to be able to. I would have to go back to getting an aide because I think that's a real step back for a lot of reasons. Whether it's our PE teacher now or someone else I hope they have someone who is trained because a lot of people think that PE is just running around. (Julie, 6th grade teacher)

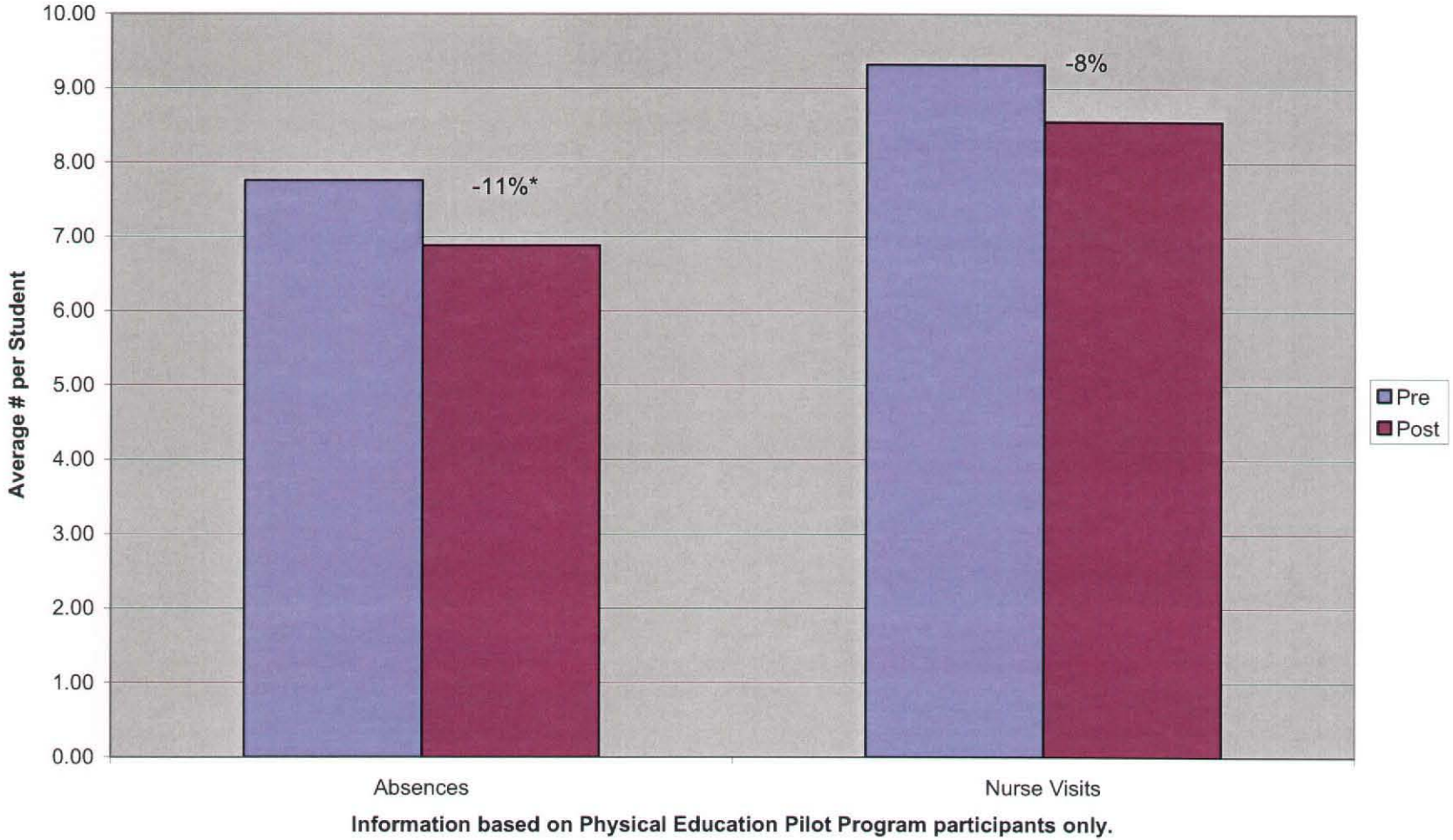
The school that implemented everyday PE will be able to maintain PE three days a week. This school and others also speculate being able to sustain recess zones through the use of teaching aides and paraprofessionals. However it should be noted that many teachers were wary of how the program would look once the funding was gone; and were pessimistic regarding adding and improving upon programmatic pieces without continued funding and support. Most of all, the teachers felt for their students:

> I think the kids are going to be truly disappointed and saddened at the fact when they come back next year and not be able to have it [everyday PE]. My fear is they're going to look at me and say well why don't I get it? For me to justify why we can't have it as being a budgetary situation is going to be very hard. (Laura, PE teacher).

Physical Education Pilot Grant Program

STUDENT ABSENCES & NURSE VISITS

School 1: Student Absences & Nurse Visits



Information based on Physical Education Pilot Program participants only.

* = statistically significant

School 1: Student Absences & Nurse Visits Based on Physical Education Pilot Program Participants					
Measure	Pre Mean	Pre SD	Post Mean	Post SD	% Change
Absences	7.76	5.40	6.89	2.02	-11%*
Nurse Visits	9.32	9.28	8.55	8.43	-8%

Note: SD = standard deviation
* = statistically significant

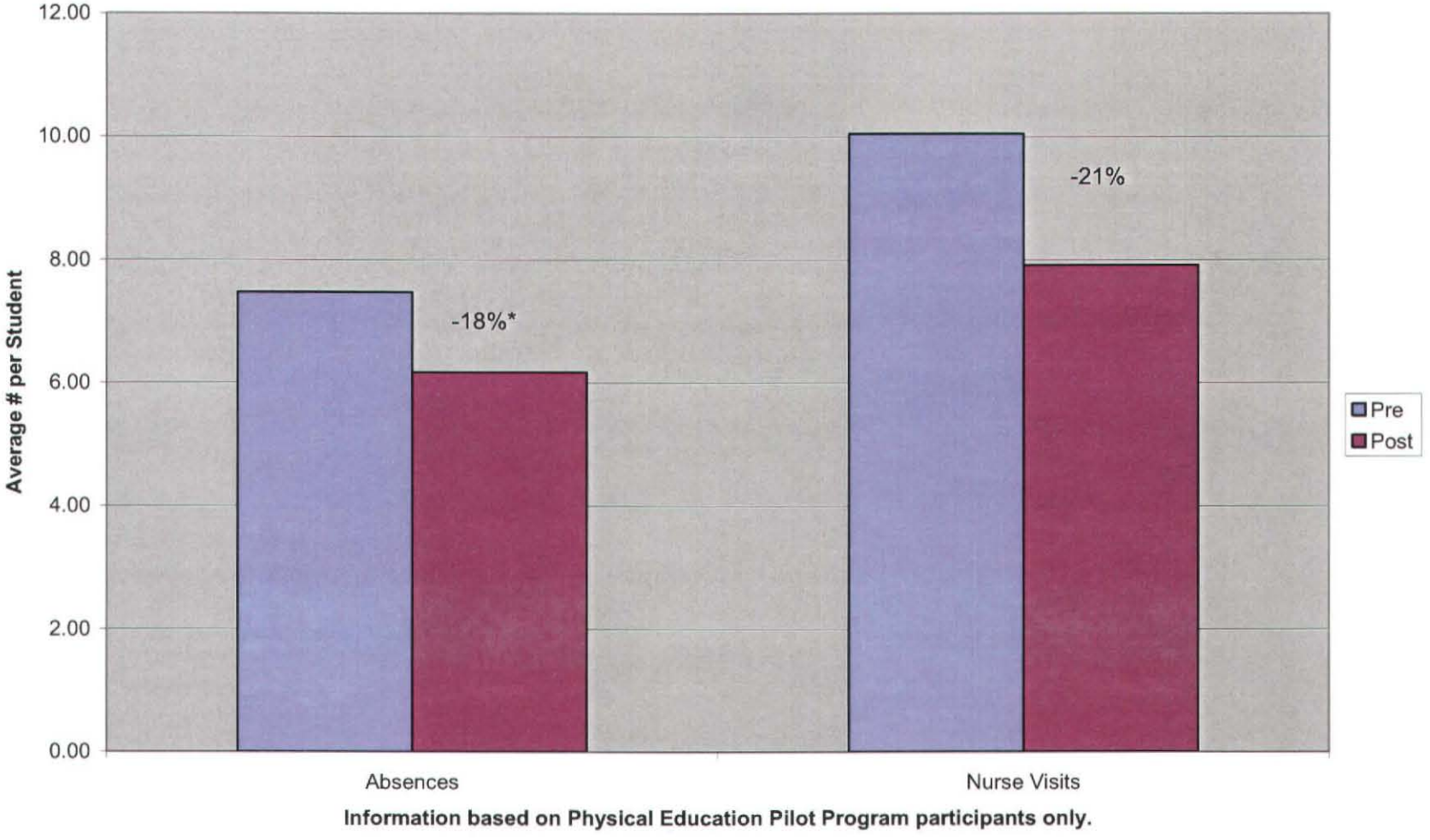
Student data from School 1 indicated that significant changes in absences (11%) were observed over the course of the intervention. Decreased incidences were reported at post-test for absences nurse visits (–8%).

School 2: Student Absences & Nurse Visits Based on Physical Education Pilot Program Participants					
Measure	Pre Mean	Pre SD	Post Mean	Post SD	% Change
Absences	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data
Nurse Visits	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data

Note: SD = standard deviation

Insufficient data was available to report in the areas of absences and nurse visits for School 2 due to the type of absence and nurse visit tracking system used by the school.

School 3: Student Absences & Nurse Visits



Information based on Physical Education Pilot Program participants only.

* = statistically significant

School 3: Student Absences & Nurse Visits Based on Physical Education Pilot Program Participants					
Measure	Pre Mean	Pre SD	Post Mean	Post SD	% Change
Absences	7.48	4.86	6.17	4.70	-18%*
Nurse Visits	10.05	14.01	7.92	7.69	-21%

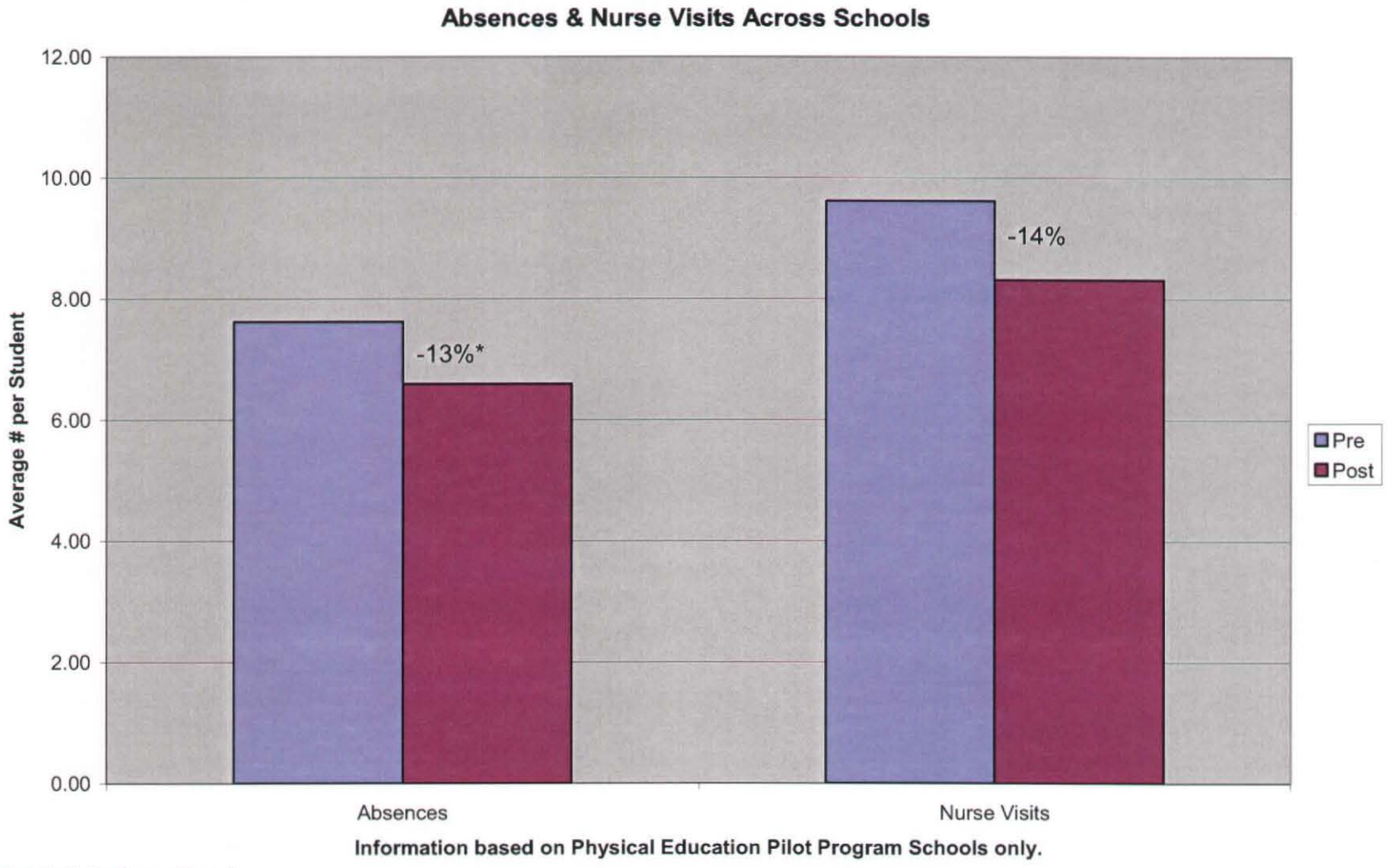
Note: SD = standard deviation
* = statistically significant

Student data from School 3 indicated favorable changes in the number of absences and nurse visits. Significant reduction in absences (–18%) were observed. While non-significant, nurse visits were also reduced (–21%).

School 4: Student Absences & Nurse Visits Based on Physical Education Pilot Program Participants					
Measure	Pre Mean	Pre SD	Post Mean	Post SD	% Change
Absences	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data
Nurse Visits	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data

Note: SD = standard deviation

Insufficient data was available to report in the areas of absences and nurse visits for School 4 due to transfer of school records to a new system.



* = statistically significant

Student Absences & Nurse Visits Across Schools Based on Physical Education Pilot Program Participants					
Measure	Pre Mean	Pre SD	Post Mean	Post SD	% Change
Absences	7.62	5.11	6.60	4.90	-13%*
Nurse Visits	9.62	11.77	8.31	8.03	-14%

Note: SD = standard deviation
* = statistically significant

Both student absences and nurse visits decreased over the course of the Physical Education Pilot Program. Average absences per student decreased by a statistically significant 13%. While not statistically significant, it is still important to note that average nurse visits per student decreased by 14%.

Physical Education Pilot Grant Program

STUDENT DESCRIPTIVE INFORMATION

Student Descriptive Information							
	N		Mean Age		Mean BMI		
	Boys	Girls	Boys	Girls	Boys	Girls	All Students
3rd Grade	11	4	8.27	7.75	17.50	15.12	16.82
4th Grade	201	210	9.10	8.98	19.40	18.88	19.14
5th Grade	194	202	10.11	10.00	19.97	19.19	19.56
6th Grade	10	6	11.00	11.17	19.29	18.18	18.81
7th Grade	11	12	12.18	11.92	20.35	21.06	20.72
8th Grade	9	14	13.11	13.14	19.09	22.25	21.05
All Grades	436	448	10.68	10.49	19.27	19.11	19.35
Total	**884**		**10.59**		**19.27**	**19.11**	**19.35**

School Personnel Descriptive Information Across Schools[%]	
Descriptive Item	Value
Gender	
Male	17 %
Female	83 %
Average number of years teaching	7.69 (SD 7.51)
Ethnic Background[#]	
Caucasian	50%
Hispanic	47 %
African-American	<1%
Native American	-
Asian/Pacific Islander	-
Other ethnic background	-

Note: [%] = Data based off of school personnel involved this project
SD = standard deviation
[#] = Only 27% response to this question

Physical Education Pilot Grant Program

APPENDIX

APPENDIX A

Senate Engrossed House Bill

State of Arizona
House of Representatives
Forty-seventh Legislature
Second Regular Session
2006

CHAPTER 326

HOUSE BILL 2140

AN ACT

ESTABLISHING THE PHYSICAL EDUCATION PILOT PROGRAM; MAKING AN APPROPRIATION.

(TEXT OF BILL BEGINS ON NEXT PAGE)

Be it enacted by the Legislature of the State of Arizona:

Section 1. Physical education pilot program; requirements

A. The department of education shall establish a two-year physical education pilot program consisting of at least the following schools:

1. One school from a county with a population of more than six hundred thousand persons.
2. One school from a county with a population of six hundred thousand persons or less.
3. One school that has a high percentage of students in poverty.

B. The department of education shall establish application procedures and additional selection criteria for school district schools or charter schools that wish to apply for participation in the program. Grant applications shall contain a detailed analysis clearly indicating what is necessary for the school to participate in the program and how the money will be used to meet the necessary requirements of the program for two years. The department of education shall award grants from monies appropriated for this purpose to school district schools or charter schools that are selected to participate in the pilot program. School district schools or charter schools that are selected to participate in the pilot program shall include a curriculum with the following components:

1. Structured physical education totaling at least one hundred fifty minutes per week.
2. A structure for each physical education class that follows the centers for disease control guidelines that recommend moderate to vigorous physical activity for fifty per cent of classroom time.
3. At least one certified physical education teacher for every five hundred pupils.
4. An annual assessment that provides an evaluation of the pilot program participants' improvement in the current year compared to the previous year.
5. A person who is responsible for the pilot program oversight at the school district level or at the school site level and who serves as the contact person for reporting and monitoring by the department of education.

C. Schools selected to participate in the pilot program shall ensure that every pupil who is enrolled in grades one through twelve participates in physical education, including pupils in special education programs unless the pupil's individualized education plan provides otherwise. Pupils shall participate in physical education for at least one hundred fifty minutes during each school week beginning in fiscal year 2006-2007 through fiscal year 2007-2008. The physical education required in this section may consist of a combination of physical education programs and additional physical activities, including

healthy schools programs that are integrated into existing curricula. For the purposes of this subsection, "healthy schools programs" means both:

1. Physical activity such as bodily movement of any type, including activity breaks in between subject matter breaks or after sixty minutes of instruction and motivation of pupils during lunch and recess periods and throughout the school day.

2. Additional physical activities such as physical activities that include healthy schools and wellness programs and that are integrated into existing curricula.

D. School districts that participate in the pilot program shall annually report to the department the following information about the pilot program:

1. The annual cost of the pilot program and budgeted expenditures.

2. The participation level of pupils, including the number of pupils who were exempted from the pilot program, the reasons for the exemptions and the actual amount of physical activity.

3. The performance indicators adopted by the school.

4. The manner in which the school met the time and integration requirements in relationship to the regular adopted curriculum.

5. An assessment of the community acceptance of the pilot program.

E. The department of education shall use the data provided by schools that participate in the pilot program and submit a report on or before December 15, 2008 to the governor, the president of the senate and the speaker of the house of representatives that summarizes the effectiveness and costs to the schools of the physical education pilot program required by this section. The department of education shall provide a copy of this report to the secretary of state and the director of the Arizona state library, archives and public records.

Sec. 2. Appropriation; department of education; exemption

A. The sum of $600,000 is appropriated from the state general fund in fiscal year 2006-2007 to the department of education for grants to be distributed to schools that are selected to participate in the physical education pilot program established by this act.

B. Of the monies appropriated pursuant to subsection A of this section, the department of education may use up to $25,000 to provide technical assistance to schools that request assistance with applications for the grants distributed pursuant to this act.

C. The appropriation made in subsection A of this section is exempt from the provisions of section 35-190, Arizona Revised Statutes, relating to lapsing of appropriations until June 30, 2008.

D. The department of education shall request a separate line item appropriation for fiscal year 2007-2008 to fund the pilot program.

Sec. 3. Delayed repeal

This act is repealed from and after September 30, 2011.

APPROVED BY THE GOVERNOR JUNE 21, 2006.

FILED IN THE OFFICE OF THE SECRETARY OF STATE JUNE 21, 2006.

APPENDIX B

Barriers

SECTION G: Think about your life, do the following things keep you from being physically active? Remember that physical activity can be any play, game, sport, or exercise that gets you moving and breathing harder. There are no wrong answers.

*Note: Lack means not very good. Self-conscious means not happy with how you look

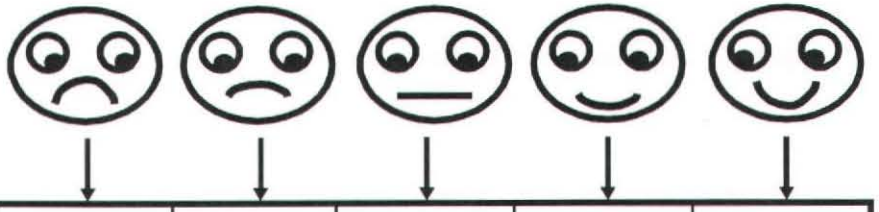
1.	Lack of convenient place to do physical activity.	_____ Yes	_____ No
2.	Do not have anyone to do physical activity with me.	_____ Yes	_____ No
3.	Physical activity is too much work.	_____Yes	_____No
4.	Lack of time.	_____Yes	_____No
5.	Self-conscious of my body when I do physical activity.	_____Yes	_____No
6.	I have too much homework.	_____Yes	_____No
7.	Lack of skills.	_____Yes	_____No
8.	I'm chosen last for teams.	_____Yes	_____No
9.	Lack of equipment.	_____Yes	_____No
10.	Weather is too bad.	_____Yes	_____No
11.	Lack of interest in physical activity.	_____Yes	_____No
12.	Lack of knowledge on how to do physical activity.	_____Yes	_____No
13.	Self-conscious about my looks when I do physical activity.	_____Yes	_____No
14.	No one at my skill level to do physical activity with me.	_____Yes	_____No
15.	Too overweight to do physical activity.	_____Yes	_____No
16.	Friends (other kids) don't like to do physical activity.	_____Yes	_____No
17.	Being active is physically uncomfortable	_____Yes	_____No
18.	I do not like how my body feels when I do physical activity.	_____Yes	_____No
19.	Friends tease me during physical activity/sports.	_____Yes	_____No
20.	Physical activity is too hard.	_____Yes	_____No
21.	Don't want people to see my body when I do physical activity.	_____Yes	_____No

STOP HERE

School: _____
Classroom Teacher Name: _____
Date: _____
Study ID: _____

STUDENT SURVEY

DIRECTION:
For each question, place an "X" under the face that best describes your feeling about the following statements



1. I always like to be physically active					
2. I like to be physically active in PE					
3. I like wearing pedometers					
4. I am now more physically active during PE					
5. I am now more physically active during recess.					
6. My classroom teacher encourages me to be physically active in the classroom					
7. I am now more physically active during Lunch break					
8. I am now more physically active after I leave school					
9. I am now more physically active on Saturdays and Sundays.					
10. Every day during school I have lots of time to be physically active					

APPENDIX D

SCHOOL STAFF SURVEY

School: _____ Classroom Teacher name: _____

Date: _____

DIRECTION:

For each question, place an "X" in one box on the right hand side that best describes your feeling about the following statements

Statements	*Very True*	*True*	*Untrue*	*Very untrue*
1. I am familiar with our school's efforts to promote daily physical activity amongst our students				
2. Because of our school's efforts in promoting daily physical activity, our students are now more active during the school day.				
3. I regularly participate in physical activity with the students during the school day				
4. I now promote physical activity as part of my daily work at this school				
5. My/Our students frequently talk about keeping themselves healthy and physically active				
6. My/Our students now have a lot of time throughout the school day to be physically active				
7. Daily physical activity breaks for teachers are needed as well				
8. My/our students are better behaved because of the increased number of physical activities throughout the school day				
9. My/our students have a better academic performance because of the increased number of physical activities during the day				
10. I now understand better the importance of daily physical activity for children				
11. The parents of our students are very aware of our school's effort on physical activity.				
12. During Parent-Teacher Conferences, discussion of the student's physical activity is included				
13. I have consistently implemented the use of classroom-based physical activity breaks				
14. I am happy to continue using classroom-based physical activity breaks				
15. For me, time for students in Physical Education is as important as time in classroom subjects (e.g., Math, Reading, & Writing)				
16. I am willing to give up classroom time for students to have more time in Physical Education				
17. I believe that the increased emphasis on physical activity is taking away from classroom subjects				
18. Our school should do everything possible to continue funding current efforts to promote our students' physical activity during the school day				
19. Because of our school's efforts to promote physical activity in our students, I now am more aware of its importance for all people				
20. Because of our school's efforts to promote physical activity in our students, I now engage in physical activity more often myself				

Provide your best estimate on the number of minutes during the school day that your students have the opportunity to engage in physical activity below:

(CIRCLE ONLY ONE):

30 min. 40 min. 50 min 60 min. 70 min. 80 min. 90 min.

THANK YOU VERY MUCH

APPENDIX E

PARENTS' SURVEY

School: _____ I am the (circle one): Father Mother Guardian
Classroom Teacher name: _____
Date: _____
Study ID: _____

Statements	*Very Untrue*	*Untrue*	*True*	*Very True*
1. Because of the school's efforts in promoting daily physical activity, my child is now more active than previously				
2. Because of the school's efforts in promoting daily physical activity, my child is now more active on weekends				
3. I am very aware of the increased focus on promoting daily physical activity at my child's school				
4. Currently, my child's school is doing more to promote daily physical activity during the school day than last year				
5. My child talks a lot about being healthy and active				
6. During every school day my child has lots of time to be physically active				
7. My child's school does enough to promote daily physical activity				
8. I believe Physical Education is as important as classroom subjects (e.g., Math, Reading, and Writing)				
9. I try to be physically active with my child				
10. Because of my child I am more physically active				
11. I know a lot about the new focus on promoting daily physical activity at my child's school				
12. I build physical activity into my day on most days				
13. I would like to learn more about my child's school's efforts to promote daily physical activity				
14. Because of the school's efforts in promoting daily physical activity, my child is now more active on weekends				
15. My child always likes being physically active				
16. My child has lots of opportunities to be physically active during school times				
17. My child likes to wear a pedometer				
18. My child is now more physically active after school				
19. My child is now more physically active on weekends				
20. My child is now more physically active during PE				

For each question, place an "X" in one box on the right hand side that best describes your feeling about the following statements

Please provide your best estimate on the number of minutes during the school day that your child has the opportunity to engage in physical activity below:
(CIRCLE ONLY ONE)

30 min. 40 min. 50 min 60 min. 70 min. 80 min. 90 min.

THANK YOU VERY MUCH

APPENDIX F

Pedometer used in the Physical Education Pilot Project Evaluation

Yamax Digiwalker SW 200 (DW). The DW is an electronic pedometer with a horizontal, spring-suspended lever arm which moves up and down with vertical accelerations of the hip. When accelerations are ≥0.35g, the lever arm makes an electrical contact and one event (i.e., step) is recorded and displayed on a digital display screen. The DW model used herein does not have a memory function. Studies assessing the validity and reliability of scores produced by the Yamax SW-200 have indicated that it is an appropriate instrument for the measurement of children's physical activity levels (Rowlands et al., 1999). This model of pedometer has produced valid and reliable scores in measuring children's physical activity (Barfield, Rowe, & Michael, 2004; McKee, Boreham, Murphy, & Nevill, 2005). Schneider, Crouter, and Bassett (2004) deemed the Yamax Digiwalker SW-200 the criterion or "gold standard" pedometer for free-living physical activity research studies and thus was used in this project.

APPENDIX G

Data Collection Protocol for Pedometers and Accelerometers

Pedometers and Accelerometers

To accurately determine activity levels of youth, pedometer step counts (and for some students, accelerometer data) are recorded for eight consecutive days, e.g. beginning on a Monday and ending on Monday of the next week. The following is a step-by-step protocol to guide data collection throughout this segment of the study:

Day 1

1. **Orientation**
   - Explain, "Pedometers are little machines that measure the number of steps you take".
   - Show the Reset button.
   - Let children hold a pedometer, shake the pedometer, and reset the pedometer.
   - Explain that the pedometers must be worn on the belt, in line with the right knee. Let the children put the pedometer on and do a "class check" to make sure pedometers are in the proper position. The pedometers must remain in the upright vertical position in order to accurately register counts. If a student is wearing something without a firm waistband, a belt will be provided.
   - Politely and firmly explain that it is important that the pedometers not be reset. If reset the data will not be able to be used.
   - Explain the prior day's activity (PDA) sheet. All children will fill out a PDA for every day. When analyzing the data, we will use PDA sheets, specifically if a child's activity level is unusually high or low.

2. **Pedometer Distribution**
   - Each child will be assigned a pedometer number. Distribute based on designated pedometer number (#'s are engraved on the back of the pedometer). This is done best by calling out names of the children and explaining that from now on you will call out pedometer numbers when distributing.
   - Have children put the pedometers on and make note of the time. Every effort should be made to record data and have the pedometer back on the students at the same time all eight days.
   - Issues such as specials, assemblies, etc., will need to be considered when determining the time to collect data. Generally the morning is most efficient as the "routine" works best with most classroom morning schedules.
   - A routine for daily pedometer distribution should be developed by the classroom teacher. As mentioned above, calling out pedometer numbers is efficient. (You will need to work with the teacher to determine the most efficient routine).

3. **Review of Procedures with Classroom Teacher**
   - Remind teachers to establish a routine for collecting and returning pedometers efficiently.
   - The following is a very efficient routine
     - Students will be prompted to record their data up to eight times and they then fill out their personal data sheet.
     - Students who have forgotten their pedometer should call home as soon as possible to see if the pedometer could be brought to school. (Forgotten pedometers will be addressed in data recording as well.)
   - Remind teacher to have children fill out PDA sheet first thing in the morning. This will allow for the best activity recall for students.
   - You will also need an attendance sheet each day. This will let you know how many absences, "forgots", etc. each day. (See *Tuesday – Thursday* step 2 and 3 for more)
   - Review Pedometer Distribution as well.

Day 2-8

- *Allow 45 minutes – 1 hr. to complete steps 1-6.*

1. **Collect Pedometers**
   - Report to the classroom and collect the tub at the same time pedometers were distributed on Monday. Pedometers and PDAs should already be in the tub. If not, please be patient, new routines will take a day or so to be established. In a four-day study, they may never be established. If the teacher is open to help, offer your assistance, as this will expedite the process. Take this extra time into consideration when planning data collection.
   - When carrying pedometers please attempt to minimize excess shaking of the tubs and/or pedometers to prevent added counts.

2. **Prompt to Record Step Counts**

   - Students will reset pedometers ONLY after recording first thing in the morning. The pedometers are to not be reset any other time.
   - Prompt students to record data and make any notes regarding problems or issues with the data collection (See symbols below for standardization).
   - Standard abbreviations will include:
     - F = Forgot
     - L = Lost
     - D = Damaged
     - ? = Step counts seem unusual relative to this child's other days (+ or – 2,500 counts).
     - = Pedometer Returned
     - * = Pedometer # Change

3. **Summarizing "needs"**
   - We have found it helpful and efficient to make a list of children you need to talk to regarding "Forgotten", "Lost", "Damaged", and "Questionable" pedometers, respectively. This will allow you to talk to groups of students with similar issues.

- The following are a list of the scenarios you will be faced with and how to handle them with a "needs" note.

  - *(F)orgotten Pedometer:*
    - Ask the child, "Is there anyone at home that can bring the pedometer to you?"
      - If the answer is yes, you may have to show the teacher how to secretly "slip" the cable off, record the data/time, and reseal in the event that the pedometer arrives after you have left.
      - If the answer is no, tell the child NOT to put the pedometer on when he/she gets home. Put it on the next morning. This will eliminate missing two days of data. Also, firmly and politely remind the child that they "need to wear the pedometer in tomorrow morning".
      - A follow up to a "No" response, will be necessary the following day. This will be an attempt to find out when the pedometer was put on. Please make notes about this.
        - For example, ask, "When did you put the pedometer on?" If they look confused, give prompts such as, "Did you put it on yesterday after school?"
        - More examples will be given and discussed during training for the study.

  - *(L)ost Pedometer:*
    - If child says the pedometer is lost, courteously encourage the child to find the pedometer and bring it in.

  - *(D)amaged Pedometer:*
    - Collect the pedometer and find out how it was damaged.
    - Using your own discretion, determine if you will replace the pedometer with an extra pedometer or collect the damaged pedometer and thank the child for participating.
      - Reasons **not** to give a child another pedometer include: chewed by their dog, submerged in water, or, smashed. This type of damage can easily reoccur.
      - Reasons **to** give a child another pedometer include: broken clasp or slightly cracked casing.
    - If a new pedometer is issued, on the Pedometer Step Count Data Sheet (PSCDS) please mark off the old number, write in the new number and place an * by the child's name.

  - *Questionable(?) Step Counts*:
    - If you have a PDA for a child with a questionable step count, please set it aside for the researchers to look at later.
    - If you do not have a PDA for the child, ask the child, "Can you remember what you did last night?" and record any answers on a PDA for the child.
    - Regardless of the response, please fill out a PDA with any information you could gather.
    - The previous steps ensure that we will have a PDA for all questionable step counts.

4. **Resetting Pedometers**
    - After all the data has been recorded prompt students to close and put their pedometers back on. (Again, the only time the pedometers are reset is first thing in the morning).

5. **Day 8/ Return Pedometers**
    - When returning pedometers, make sure there are enough PDA sheets for the entire class in the tub.
    - To ensure the pedometers are distributed and put on immediately, it may be best to assist in pedometer distribution.
    - Again, simply calling out pedometer numbers has been efficient in other studies.
    - Before you leave, make sure the pedometers are on each student and you have all of the answers for your "needs" note.

6. **Address Lost, Damaged, or Forgotten Pedometers**
    - See step 4.
    - We encourage you to make detailed notes on the data sheet. This will be very helpful when we are analyzing the data one or two months after the project.

Day 8

1. **Collect Pedometers**
    - Same as above
    - On Friday, place a check mark by all of the pedometers that are returned.

2. **Record Step Counts**
    - Same as above

3. **Keep Pedometers**
    - To prepare pedometers for the next use, reset and place in tub. It is not necessary to reseal the pedometers on Friday.

4. **Address Lost, Damaged, or Forgotten Pedometers**
    - On the last day, attempt to reduce the number of pedometers lost. This can be accomplished by asking the teacher to remind the children who have forgotten or lost their pedometers to bring them in the next day.
    - A follow-up visit on Friday afternoon and then on Monday will prove fruitful in replenishing pedometer supplies.

APPENDIX H

McClain, J.J., Sisson, S.B., Washington, T.L., Craig, C.L., & Tudor-Locke, C. (2007). Comparison of Kenz Lifecorder EX and ActiGraph Acclerometers in 10-yr-old Children. *Medicine & Science in Sports & Exercise, (39)*4: 630-638.

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