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DECISIONS TO ACT: Investing In Physical Activity To Enhance Learning And Health



THE ISSUE

The current policy and programmatic decisions affecting schools today are likely to influence the future educational levels and health of the US population. Investing in school physical activity offers multiple advantages for school children.¹ Many studies have found that school-based physical activity (PA), including physical education (PE), is linked with a wide range of favorable educational and health outcomes, such as heart health, bone growth, body composition, improved cognitive function and academic performance.^{2,3}

Currently, the majority of children do not⁴ get the recommended minimum of sixty daily minutes of moderate to vigorous physical activity.⁵ Schools play a critically important role in this regard, through a variety of strategies including active transport, classroom activity breaks and especially PE.^{2,6} In fact, the Centers for Disease Control and Prevention recommends that schools provide multiple opportunities to help students participate in sixty minutes of moderate to vigorous physical activity each day. Yet, only a limited number of schools nationwide provide physical activity opportunities to assist children in meeting the daily PA guidelines.^{1,7} The experience of this group of PA-supportive schools can shed light on future approaches to effectively increase PA levels among children within schools. However, the decisions schools make to prioritize and put physical activity strategies into action have been largely unknown, particularly among schools with fewer socioeconomic resources.

This study investigated why and how PA strategies are prioritized and executed in elementary schools that strive to provide students the minimum recommended amount of daily physical activity. The findings offer important insights that, if applied in a considerable number of schools, have the potential to increase levels of physical activity as well as advance learning and health among children nationwide. The data revealed that schools strengthen PA programs through creating a culture of learning and health, advocating and generating buy-in for the benefits of and implementation of PA strategies, encouraging adherence to PA/PE policies, and collaboration focused on PA.

Making physical activity an everyday
experience for all children

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Recommendations

Based on findings from this study, we offer the following recommendations for elementary schools, school districts, funding agencies and policy-makers to help increase PA levels and advance learning and health among children nationwide.

- **Create and promote a culture of learning and health in schools and school districts.** Schools and school districts can create and support an environment in which PA is an integral strategy to enhance student academic, behavioral, social and emotional learning. A culture of learning and health embraces the value that PA adds to student outcomes and ensures PA strategies are consistently integrated in the school environment. In turn, this environment can endorse and sustain PA practices, and contribute to making PA an everyday experience for children at and away from school. Promoting a culture of learning and health requires leadership and advocacy to champion the benefits of PA and to motivate stakeholders to implement and sustain PA strategies. This is more likely to be achieved by multiple organizations, including in the health and education arenas.
- **Foster collaboration and provide technical assistance to carry out PA/PE strategies in schools and school districts.** Schools and school districts can support networking and collaboration focused on PA by allocating time and resources (e.g., for participation in professional development opportunities and PA related conferences) for staff and community members to explore creative solutions and approaches to effectively incorporate PA in schools. Collaborations enable stakeholders to share and maximize PA related resources and increase the capacity of schools to boost the offerings of PA opportunities. Moreover, collaborations stimulate critical innovation to tailor PA strategies to the unique needs of local schools and student populations.
- **Provide grants and technical assistance to support grant writing for low resourced schools.** Funding agencies can increase the grant-writing capacity of low resourced schools by providing mini-grants and technical assistance for staff and community members. This will be especially needed as long as funding appropriations are absent in policies for PA/PE.
- **Strengthen policies governing PA/PE by including provisions for funding allocations, guidelines for implementation and compliance measures.** Policy and decision-makers can enhance PA/PE policies to further facilitate increasing PA across schools. In order to enable schools to implement and sustain PA practices over time, policies for PA/PE must include funding allocations. Funds can cover the cost for personnel (e.g., district-wide PA resource staff and PE teacher positions in schools) and PA related resources such as equipment, facilities and supplies. Funding allocations are especially critical for those schools serving student communities that have fewer socioeconomic resources and face multiple barriers to engaging in physical activity. Moreover, policies for PA/PE can provide critical direction for implementation (e.g., designating staff to lead PA strategies at the school and district levels) and compliance. Measures for compliance can include periodic reporting about the amount and quality of PA schools provide to students. Strengthened PA/PE policies make it more likely that schools can consistently integrate and sustain PA strategies.

Methodology

Our study focused on specific elementary schools that put in practice multiple PA strategies (including PE) to support students to reach or approach the daily minimum recommended minutes of moderate to vigorous PA. These schools served as case studies and provided in-depth information⁸ about why and how they make decisions to focus on and implement PA strategies. Using several recruitment strategies, including referrals, outreach to professional networks, internet searches and direct contacts to schools and school districts, we identified a convenience, therefore non-representative, sample of schools. We attempted to obtain schools that are located in different states and that serve students with different sociodemographic characteristics. We focused primarily on elementary schools for several reasons: lifelong habits are often established early in life;⁹ PA practices at elementary grade levels have been linked with increased PA¹⁰ and compared to other grade levels, elementary schools may have more flexibility for PA supportive strategies. We emphasized recruitment of schools that primarily serve students of color and students from low income households because these school communities typically have fewer socioeconomic resources and limited PA opportunities.^{11,12}

After establishing contact, the key informants consented to participate in the study and provided data about their cases through an online survey and a telephone interview. Some of the questions we asked participants included: How does your school make decisions about PA strategies for your students; what are the reasons for those decisions; what factors have allowed your school to prioritize its PA strategies; and, which factors have been the most effective in increasing your school's commitment to PA programs? All responses were aggregated and anonymized to protect study participant confidentiality. The respondents received an electronic gift card for their participation in the study. Frequencies and distributions of responses were calculated using data from the survey. We analyzed the content of the telephone interview data and identified themes that recurred across interview responses, cross-checking and validating the themes with supporting evidence from direct quotes.

Results

A total of forty-two key informants from forty-two schools in seventeen states plus the District of Columbia (DC) (Figure 1) completed the online survey and participated in a telephone interview. Of the forty-two key informants, 86% (n=36) were from elementary schools, 9.5% (n=4) were from middle schools, and 4.8% were from an alternative school serving 6-12 grades (n=1) and a school district (n=1). The key informants included principals,

PE teachers, classroom teachers and wellness coordinators. Based on self-reported survey data, the vast majority (80%) of the schools serve a high proportion (more than 50%) of students who are eligible for free or reduced price meals. Of the total number of schools, 45% are located in urban areas, 29% in suburban areas and 26% in rural areas. The racial or ethnic majority student enrollment among schools is: 38.0 % Latino; 38.1% White; 9.5% African American; 2.4% Asian/Pacific Islander; 5.0% have other racial/ethnic majorities; and 7.0 % have no single racial or ethnic majority in their student enrollment.

Figure 1. Location of study sample schools (in orange color ■)





Key Findings

The interview data revealed that schools engage in differing kinds of processes to make decisions related to PA strategies. Those decisions are often driven by or depend on who is involved in promoting, implementing and integrating PA strategies. The decision-making processes often involve multiple stakeholders at all levels, including students, parents, staff, school and district administrators, and community partners. In some schools, teachers or principals use state mandates to justify increasing PA, while in others, teachers press the district for more PA. In yet others, both of these processes work together synergistically.

We identified the following seven interrelated themes that shed light on why and how schools make decisions to prioritize PA and put PA strategies into action. The themes are summarized in [Table 1](#). We discuss each theme below and include participant quotes to illustrate the themes.

Table 1. Summary of key themes*

1.	Schools prioritize physical activity because it helps advance learning and health
2.	Advocates play a key role in generating support to integrate physical activity
3.	Stakeholder buy-in enables decisions to increase physical activity opportunities
4.	A culture of learning and health advances decisions to offer physical activity
5.	Policies and standards for PA/PE reinforce the importance of physical activity
6.	Funding and resources drive decisions to put physical activity strategies in practice
7.	Collaboration can facilitate decisions to enhance physical activity strategies

* Based on data from forty-two interviews with key informants from forty-two schools in seventeen US states plus DC

Schools Prioritize Physical Activity Because it Helps Advance Learning and Health

Many participants reported that their schools implement physical activity strategies primarily because PA can advance learning and health goals. An overwhelming majority of the respondents noted that the learning and health benefits of PA are moderately or very important in their school decisions to select and execute PA strategies (Figure 2). Several respondents mentioned that they know from research and from direct experience (e.g., as teachers, principals) that PA can yield multiple learning-related benefits including better focus in class and improved test

scores. The health benefits associated with PA were also mentioned; for example, PA is seen as a strategy to help reduce obesity and sedentary behavior. Additionally, some respondents consider the advantages of PA within a broader lens that centers on the whole child, in which PA can benefit academics, physical, mental and behavioral health, as well as social and emotional learning.

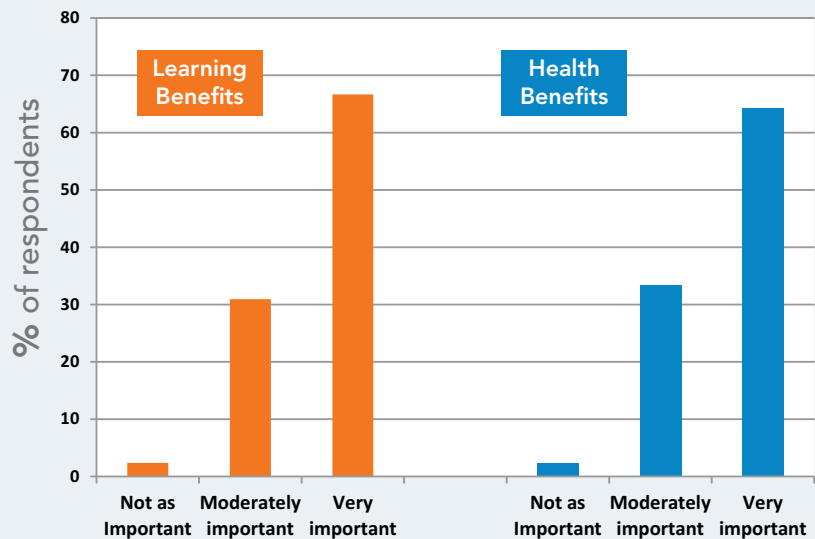
“We have read many studies about the benefits of health and movement as it relates to school and student test scores, so of course that’s something we are always interested in.”

“I want kids to be successful in their whole life, in every aspect of their learning. I want them to be successful physically when they are in the gym. I want them to be successful in their classrooms. I want them to be successful socially and emotionally with one another, and to be able to have healthy relationships. And physical activity is one of those things that can catch all of that. And so, I guess for me, I just want to help kids be their very best.”

“Well, just because of everything that teachers have to get accomplished in one day, if it wasn’t benefiting their learning it wasn’t going to happen.”

“Learning doesn’t happen, like we used to learn where we are all sitting at the desk, everyone quiet, everyone facing the same way, doing the exact same things...I have to tell this story: there is a first grader, the first day she got an exercise ball, she was sitting on the ball, got her math paper in front of her and she’s lightly bouncing, because

Figure 2. How important are the learning and health benefits of physical activity in your school decisions to select and implement PA strategies*?



*Data from the online survey: n=42

light bounces are okay...and she's working on this paper and her teacher is filming her. She said she had to film this because she would never finish a math paper without a lot of nagging, prodding, and pushing to get it done. She did the entire paper by herself bouncing contentedly away."

However, some respondents shared that stakeholders in their schools or districts have not fully recognized the connections between PA, learning and health.

"There is always an academic push and (the district-level administrators) haven't yet bought into the (PA) research... We have preached. We have presented. We have shown them the stats and they just aren't buying in yet."

THEME 2 Advocates Play a Key Role in Generating Support to Integrate Physical Activity

Advocacy for physical activity within schools is key to generating support among stakeholders. Many respondents mentioned that PA advocates who are persistent, committed and passionate play a central role in their school's ability to focus on and execute PA programs. PE teachers, school district PA/PE administrators, classroom teachers, and principals were most often cited as influential advocates of PA (Table 2). PA advocates also include wellness coordinators, parents and students. A committed advocate, with support from the school's principal, can build acceptance for various PA strategies and their subsequent implementation in schools. PA advocates provide leadership and resources, share knowledge about PA research, policies and standards, and demonstrate the positive influences of PA on students. Some advocates provide technical assistance to classroom teachers and school administrators as they adopt and integrate PA strategies in the school environment.

Table 2. Respondents* who reported that these stakeholders are the most or very influential in the school's selection and implementation of physical activity strategies**

Stakeholders	Percent (n)
School district funded PE teachers	88.1 (37)
Principals	69.0 (29)
School district PA/PE administrators***	57.1 (24)
Classroom teachers	45.2 (19)
Parent teacher organizations (PTA/PTO)	7.1 (3)

*Data from the online survey: n=42.
 **Study participants were asked to rate the level of influence for each stakeholder.
 ***Denotes one missing response, n=41

"The bottom line is that you have to have PE teachers or somebody in the school that is going to promote (PA). Whether it is a parent or principal or staff member, it has to come from the passion of the people that work there."

"I've been at my elementary school now for nine or ten years and I've worked really hard to develop a good rapport with the classroom teachers, to be an advocate for PE and PA in my building...Building those relationships has been really important because I've had five different principals since I've been here, but every one of those principals have supported me."

“We need to be vocal; we need to be advocates; we have to believe in what we need to believe in and not just say we need to have it. With our research articles backing us to say this is what we need to be doing...we need to be showing up to the school board meetings. We need to be shaking hands with our community members. Commitment and buying in now (is) about changing culture.”

“I think it’s really important that you have a physical education department that recognizes the importance, because PE departments have every student within the school, and that’s going to make a huge impact on your physical activity. Secondly, you need to have a very active wellness committee (that) is going to push the additional physical activity time before...and after school and during the classroom, and lastly it’s very, very vital to have your principal on board to help push and promote activities that you can do outside the classroom.”

THEME
3

Stakeholder Buy-in Enables Decisions to Increase Physical Activity Opportunities

Respondents noted that convincing stakeholders to embrace the importance of PA requires a blend of compelling research, advocacy, education, and experience directly observing its positive influences. Many respondents often referred to the acceptance and belief in the benefits of PA as acquiring “buy-in.” Although buy-in toward PA often occurs at many levels, it is critically important that PE teachers, classroom teachers and principals value and embrace PA, because ultimately they are the ones who are responsible for executing the PA strategies. While the research tying PA to favorable student outcomes often shapes school decisions to prioritize PA, direct observations of the positive effects of PA on students is an especially powerful motivator for stakeholders. Additionally, buy-in that leads to action is more likely to occur when strategies are easy to execute, fun for the students and can be incorporated effectively with academic learning. Moreover, some participants mentioned that when stakeholders (e.g., administrators, teachers, and parents) buy into PA strategies, they often themselves become advocates for physical activity.



“We have an administration right now that has great buy-in, and they are seeing. It’s not just that they’re buying in because we are saying this needs to be a priority, but because we have initiated some of these programs in advance, they are seeing the great benefits that are coming from it.”

“Of course, like you have in every school, you got to have a couple teachers that you go to to say ‘hey, will you try this,’ and once they do, then other teachers start seeing it work, and we had one teacher in particular that the very first year of this, she totally bought in and the parents from her classroom were such advocates, telling other parents about how great the active seating was and things they were doing in the classroom, so parents helped other parents buy into how this was a good change.”

“One thing I got online was about how physical activity helps the brain. It shows a display of the brain and the benefits of physical activity on the brain, and I have shared that with the teachers at our meetings...and that was one thing I did. Like I said, I got some buy-in from teachers to do brain breaks in between their lessons, and to increase the recess minutes.”

“Getting buy-in has been huge, not only from the teachers, but if you don’t have buy-in from the top down, then some (stakeholders) are not going to do it...So, we really went with our wellness committee. We made sure we had school board members on there; we made sure our assistant superintendent and all our building principals were a part of that committee, so that they are hearing firsthand what we would like to do...getting their initial thoughts and why they think it would or wouldn’t work, and then getting their buy-in from the top down.”

THEME
4

A Culture of Learning and Health Advances Decisions to Offer Physical Activity

Multiple respondents remarked about a culture, a mindset that exists in their schools which considers PA as integral to learning and health. This culture of learning and health is created in part through promoting the value of PA across stakeholders. The process of raising awareness about the importance of PA can shift the frame of mind among stakeholders who consider PA as competing against the academic agenda to seeing PA as an integral part of education. Schools that display a culture of learning and health



“The classroom teachers have gotten really good at incorporating (PA) into their instruction. Like math teachers have found ways to teach math through movement so they don’t lose any instruction time and keep up with the standards they have to meet academically. So that physical activity is not actually taking away from academic efforts, but rather enhancing them by using physical activity.”

enable decision-makers to focus on PA alongside other core curricular areas (e.g., reading and math). In turn, the school environment is set up to ensure PA strategies are carried out. This includes allocating time and space, providing technical assistance, equipment and supplies as well as personnel dedicated to carrying out the PA strategies. In addition, policies as well as standards for PA/PE at the national, state, district and/or school levels (see Theme 5) contribute to fostering a culture of learning and health. All these elements often combine to stimulate a learning and health culture in the school environment that is associated with physically active students who are engaged and better able to learn.

“Teachers understanding and seeing it in action has changed the mindset.”

“It’s all about building a culture in your school. That it’s not just the PE teacher’s job to keep the students active; it’s everybody’s job and...it benefits everybody...it’s a really big piece.”

“My principal, if you were speaking with her, she would say, we feel like these two things go together hand in hand; the academics and the physical activity complement each other.”

“As far as our healthy school initiative, (it) became a part of the culture at our school, so PA as one facet of that is one of the categories that was included in that program. It is just kind of ingrained in the culture of our school now.”

“It’s just the environment we have here, that moving is part of what you have to do to be healthy, to be strong and to have a long life. I think that’s probably the most basic simple answer. We have buy-in from all levels, from the students to the teachers all the way to the parents.”

THEME
5

Policies and Standards for PA/PE Reinforce the Importance of Physical Activity

Many respondents mentioned that policies and standards facilitate making PA a priority in schools. Participants shared that standards to recommend or require specific daily or weekly minutes of PA (e.g., school wellness policies and recommendations of sixty daily minutes of moderate to vigorous intensity PA) and policies governing PE help legitimize decisions, guide planning and implementation of PA strategies, and promote accountability. For example, data from the online survey shows that the vast majority of respondents considered PE policies to be very important in their decisions to select and put PA strategies into action (**Figure 3**).

Figure 3.

How important are state policy mandates for specific weekly PE minutes in your school decisions to select and implement physical activity strategies*?



*Data from the online survey: n=42

“When I got started on this (county wellness team), we had a principal that was a member and he told us...when anything is in policy, you better be following it. He said if it’s not in policy, you’re going to have trouble getting people to do those things. Suggestions are not going to be followed, but (with) policy you’re going to get in trouble for not doing what you’re supposed to be doing.”

“We have made it a priority and our state has made it a priority. A state policy says all elementary and middle schools have to provide thirty minutes of moderate to vigorous physical activity daily, beyond PE.”

“I mean that (the state policy for weekly PE minutes) definitely influenced because this is the first year that fifth and sixth graders get forty-five minutes (of PE).”

“That’s a really big program, of course, falls right in line with...recommendations of sixty minutes of active play, and falls along the lines as well for the new state laws that we have implemented this year for students to get fifty-four minutes of physical activity every day. I think those are just big driving pieces statewide that people see are important and...that’s a big influence in what we are doing and why we are doing it.”

THEME
6

Funding and Resources Drive Decisions to put Physical Activity Strategies in Practice

The vast majority of respondents indicated that cost is a moderately or very important factor in school decisions to select and implement PA strategies (Table 3). The limited availability of funds (e.g., to cover staffing and expenses for equipment/supplies) was frequently mentioned as an obstacle that restricts the types of PA strategies schools can carry out. Several participants reported that they go out of their way to secure grant funding, but they are not always successful. While very important, funding is not the only factor that drives decisions to make PA happen at the schools (see Theme 1). Participants shared that they also need and utilize a variety of other resources including information, best practices and technical assistance to augment their ability to put PA decision-making into action. They access these resources through an array of avenues, including collaborations with local and national organizations (e.g., SHAPE America, Alliance for a Healthier Generation, Active Schools, SPARK, and AHPERD), local and national conferences, and targeted internet searches (e.g., online videos, forums, and information resources focused on PA).

Table 3. The importance of cost in school decisions to select and implement physical activity strategies*

Degree of Importance	Percent (n)
Very Important	38.1 (16)
Moderately Important	45.2 (19)
Not as Important	16.7 (7)

*Data from the online survey: n=42

“I was able to take two, two and a half hours off my day to...work on things like this (grants). That’s what started pushing...we were writing for another grant...and (a) lot of the things we have done over the last five years are sustainable but without funds, things are hard to sustain.”

“So, I’ve been able to, on my own, and not part of my job description...I got a grant and that is actually how we got the funding for a new playground.”

“The school’s county-wide budget obviously is (the source of) our bigger purchases... And if they don’t budget (it), we can’t get it. Our (parent teacher organization) does stuff here and there but not a lot...the main source for our bigger stuff comes from grants.”

“I am involved as a teacher leader for (organization name redacted), which is...a state funded project that is based on working with universities and getting the latest and greatest on research and information related to PA and health and physical education. I work with that, so I bring that information back. I attend as many conferences as I can... I am a part of...organizations so I am able to take info from there, and then I use articles and things, that are either handed to me through my professional organizations or I’ve looked up before.”

“I got grants and bought equipment for (teachers) to use in the classrooms and I got... exercise balls for the kids to sit on and...in the old days before I figured out how to email people stuff, I would print off ideas of things that I would see online or the things that would get sent to me.”

THEME
7

Collaboration can Facilitate Decisions to Enhance Physical Activity Strategies

Many participants indicated that collaborations enhance their school decisions to adopt and carry out PA strategies. Respondents mentioned that collaborative relationships between school leadership and staff, school districts and school sites, and the school and the community strengthen connections, expand resources, and secure technical support toward PA strategies. Collaborations, such as wellness committees, partnerships and professional development opportunities stimulate innovation, increase the capacity of schools to generate buy-in and contribute to a culture of learning and health that promotes PA.



“I go to conferences. Yes, absolutely I steal from other people, and I do so gleefully because they can steal from me... A better word is collaboration and working with like-minded peers...the whole goal is to have better, healthier, more well-educated children about physical education, health and wellness...and if someone else is doing something, that’s great. Yes, by all means and I’m going to take a look at that and I’m going to see if it’s going to work at our campus.”

“We have actually gone to a (PA) summer institute which is held in our school. We are pretty pumped about that...and it’s just amazing. Your brain just explodes with all that information. And then we were able to then share it with our school, and that’s been a terrific adventure. We’re looking to get a movement lab put in for the whole school.”

“We get to meet with teachers...help them and work with (them) statewide, and so I try to listen when people have successful lessons or units. Then I’ll try to adapt them to meet the students that I have, and just that collaboration with other teachers has been very helpful.”

“I was working with the music teacher and we just finished up a hip hop dance unit; the kids, as part of their brain break were doing the dance all together. It’s definitely something that (the principal) tries to encourage me to do, in terms of collaborating with other teachers to help them.”

Limitations

This study has several limitations. The case study design is based on a convenience sample of forty-two mostly elementary public schools in seventeen states plus the District of Columbia. Thus, the findings and conclusions are suggestive rather than definitive, and may not apply to all schools across the nation. The data are self-reported, anecdotal and not suitable for generating statistical conclusions. Additionally, we were unable to independently verify that study participant schools are fully implementing the array of physical activity strategies reported. Nonetheless, the findings from the present study suggest areas that could be explored more systematically in future studies to better understand how PA strategies can be increased in schools. Moreover, our results offer critical insights that have promising applications for policy and decision-makers.



Conclusions

Our study findings point to current challenges and future directions for policy and decision-makers committed to increasing levels of PA among children in elementary schools. Several obstacles currently make it difficult for schools to fully integrate PA. For example, some stakeholders believe that physical activity strategies compete with academic goals. This stakeholder concern requires attention, advocacy and assurance that PA has potential to yield compelling health, and especially, learning benefits. In addition, cost is an important factor shaping decisions to integrate PA within schools. Furthermore, policies for PA/PE reinforce the importance of PA. However, in line with findings from other studies,^{13,14} the experiences shared by the study respondents underscore that many current PA/PE policies do not easily lead to the implementation of school-based PA/PE programs. Nevertheless, the findings from this study provide insights into future directions that may be fruitful in efforts to integrate PA strategies within elementary schools and increase children's levels of physical activity.

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