Chapter 2
Decreasing Perceived Barriers and Enhancing Facilitators of Movement Integration

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Abstract This chapter deals with the idea that classroom teachers may not be prepared to facilitate physical activity within the academic setting. Perceived barriers are addressed with practical suggestions for decreasing barriers and steps are given to facilitate classroom physical activity.

Given the benefits of physical activity on both health and academic performance, and the prevalence of school-aged children who are not achieving the recommended levels of daily physical activity, an increase in opportunities for students to be active during the school day is necessary. Models and initiatives, such as the Comprehensive School Physical Activity Program (CSPAP; see Fig. 2.1) and *Let's Move! Active Schools* (see http://letsmoveschools.org), identify physical activity within the classroom as a necessary component in this whole-of-school approach (Kohl & Cook, 2013). Content-area teachers, as the individuals with the most contact time with students, must be prepared to facilitate physical activity within the academic setting.

When considering the likelihood of any behavior change, understanding an individual's perception of potential barriers to and facilitators of taking action is paramount to promoting successful change. Curricular change, although generally viewed as an overhaul or revision of current lesson plans, materials, and standards at a policy-level, refers to any change to current practices within the classroom. Implementation of new or different classroom practice is largely dependent upon the classroom teacher, as the planner and facilitator of lesson plans. The success of implementation is dependent upon educators accepting change (Zimmerman, 2006), and changes in classroom practices ultimately rely on teachers (Borko, 2004; Spillane, 1999). Accordingly, it stands to reason that teachers are instrumental in the success, or failure, of adding or increasing physical activity into the general education classroom. Specifically, Martin and Murtagh (2015) propose that teacher attitude toward movement integration is linked with the level of activity among

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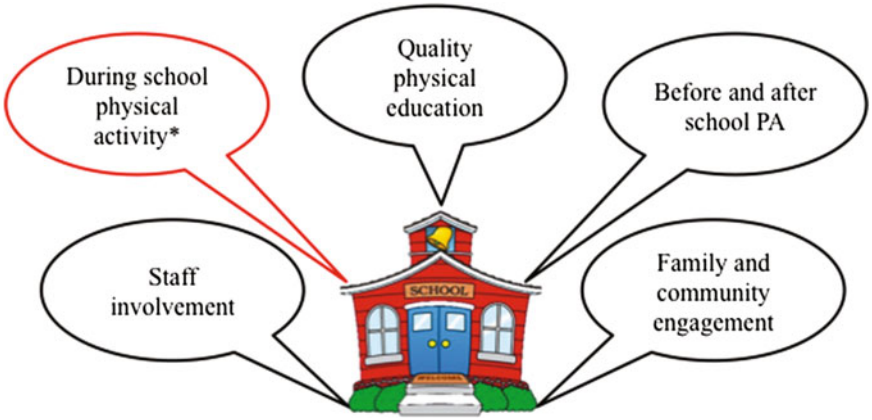


Fig. 2.1 Comprehensive School Physical Activity Program (CSPAP) model. Image adapted from SHAPE America (see http://www.shapeamerica.org/cspap/what.cfm). Note *Asterisk* distinct from during school physical education

students, further demonstrating the impact of the teacher on the effectiveness of classroom physical activity practices.

There is evidence to support that teachers acknowledge the need for classroom physical activity, but that barriers exist to limit implementation. When these barriers are perceived by the teacher as greater than the benefits, teachers are less likely to integrate movement into curricula. However, there are also evidenced facilitators of classroom physical activity that are correlated with the number of movement opportunities that teachers offer. Gaining an understanding of both perceived barriers and facilitators to movement integration is critical to promotion efforts. This understanding enables teachers and supporters to proactively diminish barriers and enhance facilitators, thereby increasing the likelihood of successful integration of movement within the classroom.

Perceived Barriers to Classroom Physical Activity

Research in multiple disciplines offers insight into common barriers to movement integration as perceived by classroom teachers. Research in organizational change has identified failure to recognize the need for change, fear of the unknown, and habit as three individual barriers to initiating action (Greenberg & Baron, 2000). If teachers are unaware of the need for the addition or increase of classroom physical activity, or do not support this change, implementation is improbable. In addition, a sense of comfort and security can be derived from maintaining familiar lesson plans, such that change that causes a disruption to current patterns may not be well-received by teachers. Classroom teachers have a great amount of responsibility and may be less inclined to offer curriculum they feel unprepared to teach (Hall,

Little, & Heidorn, 2011). Similarly, with the pressures of state testing and the lack of accountability for classroom physical activity implementation, teachers may feel their planning time should focus on core subjects (Hall et al., 2011) and less on the implementation of other non-core areas. Adopting new practices in the classroom may also be contingent upon relationships with colleagues and the level of support within the school (Opfer & Pedder, 2010). Administrative support is important (Parks, Solmon, & Lee, 2007), as teachers feel that school change is often contingent upon the principal (Till, Ferkins, & Handcock, 2011). As a more proximal barrier, teachers may also be constrained by lack of support from fellow teachers who disapprove of pedagogical strategies that integrate movement.

As further support of time as a barrier, in a qualitative assessment of classroom teachers' thoughts about offering physical activity, Cothran, Kulinna, and Garn (2010) determined a key factor of implementation was scheduling. Finding time within the school day for classroom physical activity was difficult for the interviewed teachers, and teachers felt available class time should be spent on academics (Cothran et al., 2010). This finding was replicated in a similar study by Howie, Newman-Norlund, and Pate (2014) where classroom teachers revealed, via focus groups, that physical activity breaks were difficult to implement given the lack of time within the daily routine. As part of a 5-week intervention targeting classroom physical activity, teachers in this sample also reported an initial fear that students would not be able to settle down after activity, but found instead that students demonstrated an improvement in learning and behavior following exercise breaks (Howie et al. 2014). This finding suggests that teachers will include student behavior as a barrier to classroom physical activity, but that following implementation, teachers may feel differently. In a quantitative study, prioritization of core subjects, lack of planning time, habit, lack of materials, and behavior concerns were the highest rated barriers to classroom physical activity implementation among classroom teachers (Nicksic, 2015).

Several studies have assessed classroom teachers' perceptions of providing physical education lessons to students. Although teaching a traditional physical education lesson in a gymnasium is not equivalent to providing classroom physical activity, this research may be relevant in further hypothesizing classroom teachers' perceived barriers to classroom physical activity implementation. In an early qualitative study that offered future researchers a foundation of knowledge, Faucette and Patterson (1989) found that classroom teachers tasked with providing physical education lessons reported only negative perceptions. Teachers felt that teaching physical education was not a valuable use of their time, that it required too much energy, and that academic subjects took precedence. Furthermore, all teachers felt unprepared to facilitate physical education and cited their lack of expertise in the area, along with a lack of materials and resources, as a barrier to teaching physical education lessons (Faucette & Patterson, 1989). Morgan and Hansen (2008) interviewed classroom teachers about barriers to delivering physical education programs and found a range of individual and institutional obstacles. Teachers reported a lack of confidence, lack of knowledge, and lack of expertise for teaching physical education. Personal attitudes about and experience in physical education

were also influential, as was individual perception about the value of physical education. Teachers felt that physical education was not a teaching priority and that successful implementation was constrained by class size and lack of materials, resources, and administrative support, with the primary barrier being lack of time (Morgan & Hansen, 2008). These results were corroborated in a larger sample of teachers who believed insufficient time was a major barrier to providing physical education lessons and listed insufficient training, lack of experience, and lack of facilities as other inhibitors (Morgan, 2008).

Taking Action to Decrease Barriers

Together, these data provide an overview of perceived barriers to classroom physical activity implementation among classroom teachers (see Fig. 2.2). Many of the highly ranked barriers may be managed through an increase in knowledge, including provision of materials. Knowledge is a multi-faceted component for diminishing

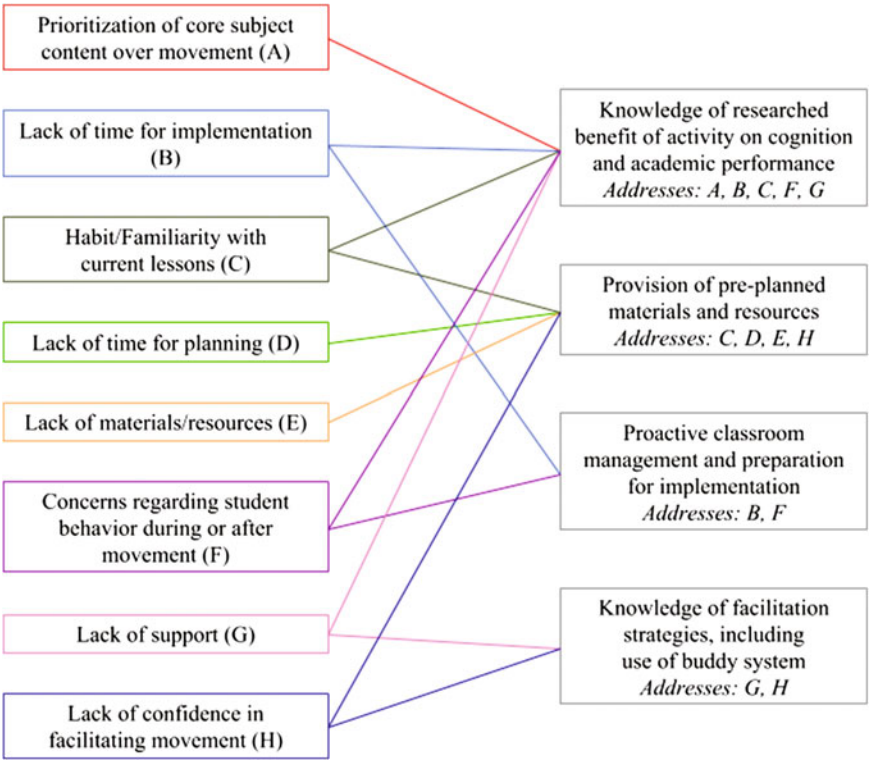


Fig. 2.2 Common barriers to classroom physical activity as perceived by classroom teachers and strategies to diminish or overcome perceived barriers

barriers, as it can refer to knowledge of the benefit of movement integration, knowledge of available materials, and knowledge of effective methods and strategies for implementation and facilitation. Evidence to support the health and academic benefits of classroom physical activity is critical. This knowledge is necessary both to alter the teacher's perception of the barriers-benefits ratio, and to generate support from teaching colleagues and school administration. Further, being knowledgeable of the research that supports a positive or neutral impact of movement integration on academic achievement targets the barrier of class time utilization.

A knowledge of materials that offer activity ideas and lesson plans removes the barriers to movement integration attributable to lack of materials and lack of planning time. Access to both preexisting materials and resources that provide tips and tricks for implementation can also address lack of confidence for facilitation of movement in the classroom. This knowledge about how to prepare for and offer movement integration to students is pivotal for initial adoption of classroom physical activity and for movement integration to become habitual.

Facilitators of Classroom Physical Activity

While identifying perceived barriers is an important step in exploring approaches for incorporating more physical activity into the classroom setting, equally important is the need to identify factors that may facilitate, or enable, organizational and classroom change, including adoption of new behaviors by the teacher to offer physical activity opportunities. Behavior theories, such as the Diffusion of Innovations, suggest that initial adoption of classroom physical activity is more likely if teachers feel implementation is compatible with their current teaching practices and easy to do, and that continued use of movement integration is more likely if teachers see positive results of implementation. Teachers who are more innovative may also offer physical activity in their classroom sooner and more willingly than teachers who are less innovative. Other behavioral theories address additional factors associated with an individual teacher's likelihood to engage in curricular change, such as perceived barriers, perceived benefits, and behavior-specific self-efficacy, or perceived competence to perform the behavior (Rosenstock, Strecher, & Becker, 1988). When applied to the implementation of classroom physical activity, these theories would suggest that facilitators to integrating movement into the classroom include perceived compatibility of movement, innovativeness, high-perceived benefits, and low-perceived barriers of implementation, and high personal confidence to offer opportunities.

Teachers who feel they are likely to adopt new educational teaching practices or be among the first to try different classroom practices can be identified as innovative. In a study of classroom teachers' implementation of classroom physical activity, Webster et al. (2013) found that teacher innovativeness was predictive of integrated physical activity opportunities in the classroom. A belief that classroom physical activity would fit well into current teaching practices was also related to

offered opportunities for movement, as was a belief that activity would produce results observable by school administration (Webster et al., 2013). An indirect relationship between promotion of activity and perceived school support (Webster et al., 2013) further suggests that while lack of support at the school level is a barrier to implementation, existence of support is a facilitating factor.

Perceived confidence in one's ability to successfully engage in a behavior, or self-efficacy, is an important factor assessing the likelihood that action will occur (Rosenstock et al., 1988). Teachers with higher levels of self-efficacy are more open to professional learning and engagement in new classroom practice than teachers with lower self-efficacy (Scribner, 1999). A teacher's decision to adopt new practices and the level of adoption are both impacted by self-efficacy (Fritz, Miller-Heyl, Kreutzer, & Macphee, 1995; Posnanski, 2002). In addition, self-efficacy in linked to maintaining the teaching practice over time, and to persistence when confronted with barriers (Posnanski, 2002).

When assessing implementation rates of content-based physically active lessons, Bartholomew and Jowers (2011) found a link with teacher self-efficacy regarding classroom management during physical activity. Self-efficacy specific to planning and offering activity in the classroom is also related to implementation (Nicksic, 2015). In a review of studies specific to teaching science, Posnanski (2002) presents evidence that self-efficacy is associated with content knowledge, such that teachers who report greater levels of science knowledge similarly report higher levels of science teaching self-efficacy beliefs, and that when teachers gain content and pedagogical knowledge, self-efficacy increases. These data support that self-efficacy beliefs regarding the provision of classroom physical activity opportunities can be positively impacted by providing teachers with knowledge about classroom physical activity, and that self-efficacy is associated with implementation.

One large-scale study with a sample of 314 elementary teachers and 38 elementary principals assessed willingness to implement classroom physical activity using a collective efficacy perspective (Parks et al., 2007). In this context, collective efficacy, an extension of self-efficacy, is a shared belief held by teachers within a school that they, as a collective entity, can positively affect student achievement. Several enabling factors were revealed in findings, with six items associated with highest likelihood of offering integrated movement. Participants reported they would be influenced by a campus-wide goal of classroom physical activity implementation, encouragement from administration, successful experience, and personal participation with classroom physical activity implementation, access to external demonstrations of successful implementation, and ability to observe peers successfully offering classroom physical activity. Furthermore, results indicated that 77% of teachers and principals felt physical activity was very important and that over 80% would be willing to incorporate engagement opportunities on at least 2 days per week. Interestingly, the majority of the sample (44%) felt math would be the subject most conducive to movement integration, followed by language arts (23%), science (21%), and reading (12%; Parks et al., 2007). As such, it may be beneficial to target math as the first subject in which to try classroom physical activity, as initial success leads to continued implementation.

Facilitator	Method of Enhancement
Compatibility of movement with current or habitual lessons plans	Increased knowledge of researched benefits of movement; access to materials that offer activities by subject or topic to aid in connectivity
Teacher innovativeness	Innovativeness is a stable character trait, but increased knowledge of researched benefits of movement may increase likelihood to initially attempt classroom physical activity
School-wide support for movement	Administrative and colleague awareness of researched benefits of movement, especially on academic achievement and learning preparedness
Low perceived barriers, high perceived benefits	Increased knowledge of researched benefits of movement; access to implementation and facilitation materials and resources
Teacher self-efficacy	Self-efficacy is a character trait that can be increased through successful trials of movement integration; observing colleagues' implementation; increased knowledge of implementation and facilitation strategies

Fig. 2.3 Potential methods for enhancing facilitators of movement integration

Taking Action to Enhance Facilitators

Research suggests that teachers will be more likely to adopt and maintain classroom physical activity practices if perceived barriers are low, and facilitating factors are present. Enhancing these facilitators, such as knowledge, self-efficacy, and connectivity to current practice, and decreasing barriers can be concurrently addressed through the provision of materials, resources, and information about integrating movement into the academic curriculum (see Fig. 2.3).

Strategies to Successfully Integrate Movement into Core Content

Step 1: Learn About, and Teach, the Benefits of Classroom Physical Activity

Perhaps the first step to overcoming barriers to classroom physical activity is to educate teachers about physical activity, the impact, and implementation strategies, as there is a strong correlation between increased knowledge and skills and a change in teaching practice (Garet, Porter, Desimone, Birman, & Yoon, 2001). As revealed in chapter one, integrating movement into the classroom can enhance learning preparedness through an improvement in attention, concentration, on-task behavior, and cognitive performance. In addition, school-based physical activity is either positively related to academic performance or there is not a significant relationship (Honas et al., 2016; Rasberry et al., 2011), supporting the use of class time for movement integration as a mechanism to impact academics.

Having a personal knowledge of the impact of physical activity on academic outcomes is necessary for implementation by the teacher, but educating others on these benefits is also crucial to implementation success. To set the foundation for classroom physical activity as an expected component of the academic school day, teachers should share information with students about the purpose and potential impact of physical activity engagement. Providing students with the intent for classroom physical activity will increase the likelihood of appropriate participation in movement integration (Eccles & Wigfield, 2002). Furthermore, sharing data with fellow teachers and with administration may engender necessary support for classroom movement. The known association between physical fitness and standardized test scores (Castelli, Hillman, Buck, & Erwin, 2007; Chomitz et al., 2009; Grissom, 2005; Van Dusen, Kelder, Kohl, Ranjit, & Perry, 2011) may encourage administrative support, while peers may be inclined to support, or even adopt, physical activity practices based upon associations with learning preparedness and behavior (Centers for Disease Control and Prevention, 2010; Goh, Hannon, Webster, Podlog, & Newton, 2016; Herman, Beer, & Morton, 2013; Mahar et al., 2006).

Step 2: Adopt Appropriate Classroom Management

Garnering support for classroom physical activity through an increase in knowledge of its benefits, among both colleagues and principals, diminishes a primary barrier to implementation. Yet increasing knowledge of implementation strategies among teachers is equally critical. Incorporation of appropriate procedures for activity facilitation is a necessary foundation for classroom movement. This could include anything from arranging the furniture in the classroom to be most conducive to

movement patterns to establishing start/stop cues to effective transition back to seated work methods. Strategies to increase the likelihood of successful movement integration facilitation are discussed further in chapter three of this text.

Setting expectations for movement integration is fundamental to managing student behavior during and after activity. Effective implementation of clearly set guidelines for acceptable behavior decreases disruptions and the need for disciplinary action (Marzano, 2003). As Boynton and Boynton (2005) note, teachers must invest the time to formally educate students on these guidelines and the expectations and parameters for behavior. For special situations, events, or locations, such as movement integration, Marzano (2003) proposes the provision of specific rules of conduct. To encourage students' ownership of these rules, teachers can facilitate the creation of a Code of Conduct specific to physical activity in the classroom (see Fig. 2.4).

To create a student-driven, movement-specific code of conduct

- Students brainstorm ideas for appropriate guidelines
- Teacher, as the scribe of each suggestion, encourages students to rephrase ideas as positive statements (ex: "walk" in place of "don't run")
- Students vote on the most important or influential guidelines until the list is narrowed down to no more than eight points

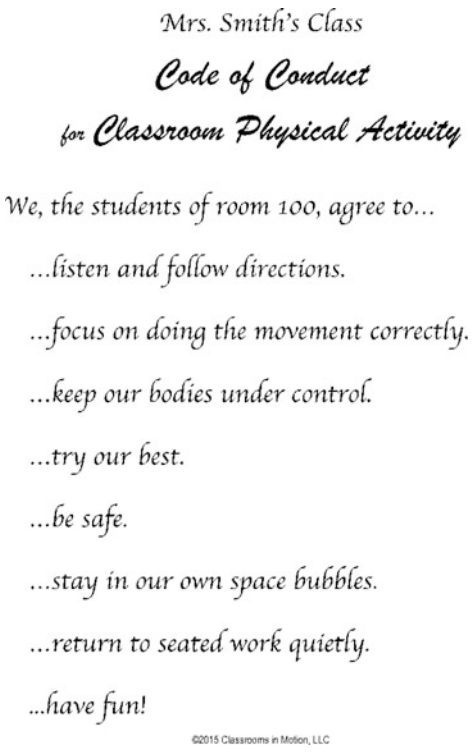


Fig. 2.4 Sample code of conduct for classroom physical activity. Copyright 2015 by Classrooms in Motion, LLC

- When the code is completed, each student signs his/her name indicating s/he will abide by the rules of the contract.

Proactively addressing classroom management can decrease the likelihood that students will exhibit disruptive behavior during or after movement opportunities. In addition, properly setting up the expectations for classroom physical activity, and maintaining these expectations, will enable movement to be more seamlessly integrated into the school day, thereby ensuring best use of available time. As mentioned in step one, sharing the purpose and intentions of activity with students is also critical to managing behavior. Students should view physical activity within the classroom as just another component of the academic school day that is intended to assist them in achieving learning outcomes.

Step 3: Utilize Available Materials and Resources

As demonstrated by the upsurge in research about classroom physical activity over the past decade (Castelli et al., 2014), the concept of integrating movement into school settings is increasingly recognized and supported. This awareness has facilitated the creation of a multitude of materials and resources to aid educators with implementation. One of the purposes of this textbook, for example, is to provide the classroom teacher with ready-to-implement lesson plans that incorporate activity into academic content. To supplement these ideas, online sources like Active Academics offers a searchable database of lesson plans categorized by grade level and content area (see http://www.activeacademics.org). In addition, free programs such as Fuel Up to Play 60 (see https://www.fueluptoplay60.com) and GoNoodle (see https://www.gonoodle.com) offer teachers simple physical activities for the classroom that require little to no planning; initial use of these activities may enable teachers to increase self-efficacy for movement facilitation before delving into the integration of activity into academic content.

The availability of materials and helpful resources reduces or removes several perceived barriers, including, of course, lack of materials. In addition, access to preexisting lesson plans addresses lack of planning time as an inhibitor to adoption of movement integration. Lack of confidence in facilitating movement may also be diminished as teachers will likely feel more confident with the provision of a lesson plan that provides step-by-step instructions.

Step 4: Start Small and Create a Peer Support System if Possible

When implementing curricular change, as with any attempted behavior change, it is important to start small and have realistic expectations for execution. Prior to

making the attempt to add or increase the level of movement within the classroom, teachers should assess the classroom environment and the students to determine an appropriate goal. Depending upon the outcome of the assessment, that goal may range from offering 3 to 5 min of structured physical activity several times per week to presenting a daily content-based, physically active lesson like those outlined in this textbook. Minor changes should be implemented first to allow both teachers and students to become familiar with the modifications. Again, expectations should be based upon current practices. If a teacher has previously offered multiple physically active academic lessons, a realistic expectation may be to offer one per day, while a teacher who is hesitant about implementation should begin with short opportunities for movement using a tool like GoNoodle.

Making small, realistic changes allows teachers to try new teaching practices and monitor results. This trialability is important as research reveals that perceptions and expectations of outcome change following implementation. Prior to a 5-week period of integrating physical activity into the classroom, teachers anticipated that students would be overstimulated after activity; after the intervention, these same teachers reported that classroom physical activity actually limited disruptive behavior (Howie et al., 2014). In trialing movement integration and monitoring results, teachers can assess what does or does not work in his/her specific classroom and plan accordingly for future implementation efforts.

Having a peer or team of support when trialing any new teaching practice is also beneficial, as it enables individual teachers to share lesson plans and success stories, gain external insight, and brainstorm resolution and future action after any negative implementation. This partner or team can also provide support, encouragement, and motivation to maintain classroom physical activity practices over a sustained period. Research suggests that forming a new habit takes an average of 66 days (Lally & Gardner, 2013), and having external support and accountability increases the chances that a teacher will continue to integrate movement into the classroom until it becomes habitual.

Step 5: Create a Culture of Movement in the Classroom

Classroom physical activity, as a concept, can be thought of as three components: procedural physical activity, structured physical activity, and content physical activity (see Fig. 2.5; Nicksic, 2015). Content physical activity, the movement integration promoted in this text, is the pinnacle of classroom physical activity as it enables activity to fit seamlessly into the learning process, enhancing the academic curriculum. That said, creating a classroom culture that embraces activity by including all three forms has the potential to diminish lingering barriers to movement integration.

Procedural physical activity is task-oriented movement. This would constitute opportunities for students to move about the classroom for a specific purpose, such as submitting an assignment or sharpening a pencil. Modifying simple classroom

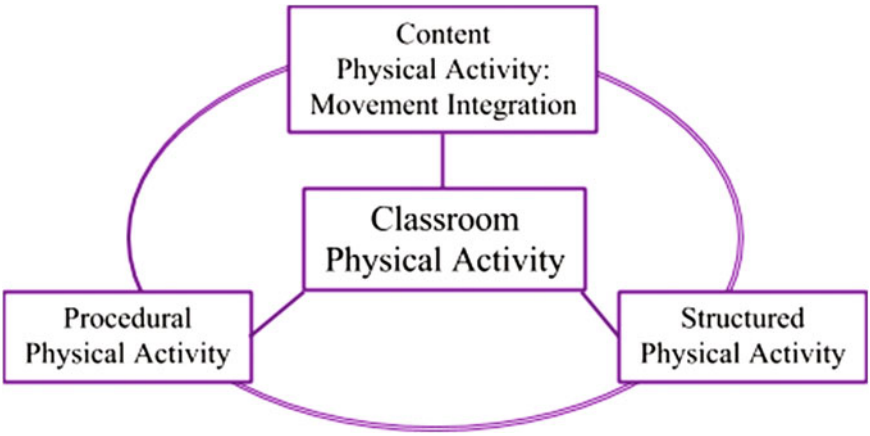


Fig. 2.5 Classroom physical activity triad

procedures to allow students to leave their seats makes physical activity a normal and expected component of the school day. For example, have a turn-in basket in one location of the classroom where students walk to place completed work, rather than having one individual collect work from seated students. If a student requires a new pencil, establish a procedure where he/she walks to a pencil cup to deposit the dull pencil and select a sharp one. Adopting procedural physical activity removes the novelty of being able to stand and move around the classroom while enables students to practice body control (Fig. 2.4).

Structured physical activity is movement within the classroom that is unrelated to academic content. This form of movement may be referred to as a brain break, although research that supports the impact of activity on cognition suggests that movement should not be considered a "break". Depending upon the length of the activity, structured physical activity may also constitute an attentional reset, allowing students to "reset" their attention to the academic task at hand. Teachers who may feel overwhelmed by the prospect of movement integration may be more comfortable offering structured physical activity first, which will likely facilitate an increase in self-efficacy while solidifying activity-specific classroom management techniques.

Finally, content physical activity, the movement integration into content curriculum, completes the triad to create a classroom culture of activity and movement for learning enhancement. To initiate this practice, teachers should first review their current units and activities and assess how movement can enhance preexisting plans. For example, perhaps a previous lesson had students estimate, and then use a ruler to measure, the length of objects pictured in the math textbook. As an alternative plan that integrates movement, students could use items around the room, first estimating and then measuring while they walk. For those teachers who feel comfortable and want to extend the activity, students could perform a different locomotion between items—tiptoe, giant step, bunny hop. By connecting

movement to lessons that teachers already feel comfortable teaching, a further increase in self-efficacy is likely to occur.

By adopting a culture that promotes and supports movement, teachers can enhance the educational experience of students in their classrooms. Engaging students in multiple opportunities for activity throughout the school day, via both procedure and core content, enables them to reap the health and academic benefits of classroom physical activity.

Chapter Takeaways

- There are barriers, perceived and real, to impede the successful implementation of movement into the classroom. Knowledge of these impediments is critical in devising a plan to address specific barriers.
- Barriers to classroom physical activity can be diminished with effective preparation and application of knowledge and materials.
- Proactively addressing barriers to classroom physical activity while enhancing facilitators increases the likelihood of successful implementation, thus enabling both teacher and students to reap the benefits of movement integration.

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