




## Physical Activity Education's Contributions to Public Health and Interdisciplinary Studies: Documenting More than Individual Health Benefits

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# Physical Activity Education's Contributions to Public Health and Interdisciplinary Studies: Documenting More than Individual Health Benefits

Bradley J. Cardinal

There is indisputable evidence that physical activity is good for health; countless studies support this conclusion and document many other affective, cognitive, physical and social benefits of regular physical activity participation (Lee et al., 2012). Remarkably, though, physical activity educators have to continually justify their existence. This is especially apparent at the college or university level, where physical activity education requirements have declined steeply over the past 80 years and are now at an all-time low, with less than 40 percent of four-year institutions having a physical activity requirement (Cardinal, Sorensen, & Cardinal, 2012).

To demonstrate and support the value of physical activity education courses and curricula, the default argument is often that physical activity is good for health, which is quite rational and easy to support, albeit individually oriented. While health is one of many reasons that college and university students report for enrolling in such courses, a primary reason reported across studies is to have fun (Lackman, Smith, & McNeill, 2015; Leenders, Sherman, & Phillip, 2003). As important as fun may be, though, it likely relegates physical activity education to the “nice, but not necessary” portion of a curriculum.

To better showcase the merit of physical activity education courses and curricula, instructors might have their students record their heart rate, step counts and energy expenditure, among other things. But demonstrating increases in physical activity (however measured) may not be sufficient. In part, this is because physical activity is state-like, in that its benefits will fade if the behavior is not sustained — and

sustaining physical activity across the lifespan remains an elusive phenomenon (Kohl et al., 2012). Are there other ways to document the real and sustainable effect that physical activity educators have on the world?

One area that has seen progress is the association of cognitive benefits to physical activity participation (Loprinzi, Herod, Cardinal, & Noakes, 2013). That is, physical activity is good for the brain and enhances learning, and it might amplify learning in other subjects such as mathematics and reading. Buoyed by philosophical arguments and fueled by credible scientific sources in a range of academic disciplines (e.g., education, evolutionary biology, kinesiology, neurology, psychology, psychiatry), these arguments are advanced to stave off program elimination or reductions. While appreciative of the value of documenting such benefits, it does place physical activity education in a supportive, rather than a primary role. As such, when curricular reforms (or budget reductions) are announced, the primary fields remain unquestionably intact with little or no need to justify their existence, whereas physical education programs and courses are put on the defensive in order to avoid reductions in size and scope, if not complete elimination. Moreover, key stakeholders in the process may fully acknowledge and recognize the value of physical activity, but still conclude that any amplification of cognitive outcomes can be achieved through less formal and less expensive means (e.g., classroom activity breaks, recreation programs). Again, physical education runs the risk of being deemed “nice, but not necessary” within a formal curriculum.

## The Role of Physical Activity Education and Skill Acquisition in Public Health

To increase the primacy of the field, some have suggested that “a public image makeover may...be in order” (Tietjen-Smith & Block, 2014, p. 14), with a greater emphasis placed on how physical activity education contributes to public health. This was no doubt fueled by the seminal Surgeon General's report on physical activity and public health in the mid-1990s (U.S. Department of Health and Human Services, 1996). That document and many subsequent documents have emphasized the health benefits of physical activity and the societal value of moving away from programs, products and services exclusively focused on the minority of children, youth and young adults who happen to be athletically gifted to a much more inclusive focus on the total population across a range of contexts.

Building on this paradigm shift and the reorientation of the field (back) toward a public health focus (Ainsworth & Hooker, 2015; Beale, 2015; Cardinal, Kang, Farnsworth, & Welk, 2015), what is sometimes overlooked is the trait-like quality of physical activity skill acquisition (Loprinzi, Davis, & Fu, in press). That is, when a new skill is learned, neuro-motor pathways are developed, and trait-like benefits occur. Unlike states, which can be fleeting and unstable, traits tend to be enduring and more permanent in nature. While overall performance levels may deteriorate without practice, basic skills remain intact. For example, once a person learns how to ride a bicycle, their basic bike-riding skills generally remain even if they are infrequent riders.

The idea that physical activity skills are taught and learned has sometimes gotten lost in the public health discourse, which often emphasizes the value of moderate-to-vigorous physical activity participation without a high regard for skill acquisition. Teaching and learning physical activity skills — helping people to attain physical literacy — is well within the professional purview of appropriately educated and licensed physical activity educators (Corbin, 2016). It also makes what physical activity educators do and contribute to the academy novel and necessary.

There are other documentable benefits to physical activity skill acquisition, and many of them contribute to public health in direct and relatively easy-to-quantify ways. To fully understand this, it is important to recognize the “big three” historical focal points of public health, which are air and water quality, safety and sanitation (Welsh & Rose, 1915). As the nature of diseases has evolved from infectious to chronic over the past century, the public health umbrella has expanded (Rosenstock, Helsing, & Rimer, 2011). Regardless, public health remains committed to ensuring air and water quality, safety and sanitation. Of these, *safety* stands out as an immediate area in which skill acquisition is paramount.

### Swimming as One Example of How Skill Acquisition Contributes to Public Health

More than 3,500 people die annually in the United States from unintentional drowning (Centers for Disease Control and Prevention, 2014). Accidental deaths due to drowning pose a significant public-health challenge, as do the morbidity costs associated with near-drowning events. If more people were taught basic water-safety skills and how to swim, at least some of these accidental deaths or near-deaths and the associated human suffering and financial costs could be prevented (Branche & Stewart, 2001). However, quantifying that something that might have happened did not happen as a result of prevention efforts is difficult to do, and getting people to buy into the calculations and underlying

assumptions of those calculations can be problematic.

Nevertheless, other immediate measures are readily available — namely, documenting how many certified professionals and/or first responders are prepared and introduced into communities through physical activity education courses (e.g., water-safety instructors, lifeguards). For example, documenting how many lifeguards (i.e., first responders) are trained and certified through physical activity education courses is a direct, irrefutable and meaningful measure of improving a community's safety. Within the social-ecological model, which is a commonly used organizing framework in public health, this would be classified as a community infrastructure improvement (Cardinal, 2010). Furthermore, this is in addition to how many people enroll in and pass the various swimming courses or how much physical activity is obtained while participating in such courses.

### Swimming as an Essential Skill for the Advancement of Other Disciplines

Swimming courses can also be linked to more advanced skills, such as those taught in self-contained underwater breathing apparatus (scuba) courses. Scuba-diving courses are grounded in basic, intermediate and advanced swimming and water-safety skills. Scuba skills and certification are not only important for those interested in recreation and tourism; they are critical to the success of other disciplinary fields such as marine biology and oceanography. In this case physical activity courses teach requisite knowledge and skills for those who seek to explore and understand the earth's water systems. This is another novel and documentable contribution that physical activity education courses make in the academy. It also makes these courses a natural partner in advancing interdisciplinary initiatives, which are growing in importance (Schary & Cardinal, 2015; Tietjen-Smith & Block, 2014). Expanding the diversity of partners who can serve as allies and advocates for physical activity education courses, curricula and programs can

help clarify the foundational value of human movement.

### Conclusion

Physical activity education courses clearly have much to offer, and the public-health value of such courses extends beyond the traditional and individually oriented physical and mental health benefits associated with living a physically active lifestyle. For example, a person must develop basic downhill-skiing skills before they become a member of the ski patrol (i.e., another type of first responder). By sequencing beginning through advanced physical activity skills, multiple illustrations such as the examples offered in this article can be constructed. Additional domains can be explored, too. For example, documenting how many people obtain first aid and/or cardiopulmonary resuscitation (CPR) training and certification through basic first aid and safety courses is another way to document tangible public-health benefits.

The work done in quality physical activity education is profound and impactful. It affects people's lives and communities every moment of every day. The more that can be demonstrated and documented, including expanding the field's narrative to be more inclusive of how skill acquisition contributes to individual and community safety (i.e., public health) and the essential role it plays in the development of other disciplinary fields of study, the more likely physical activity education will be understood and supported as a preeminent field of study. This is consistent with the aim of the College and University Instructional Physical Activity Program (C/UIPAP) special-interest group (SIG) within SHAPE America, which

strives to promote quality instruction of physical activity and wellness for all University students through education, research and communication, in support of SHAPE America's vision of healthy and physically active lifestyles for all. The SIG seeks to inform the general public and in particular, University policy makers and campus community members about the values of health and well-being as essential to higher learning. (Sweeney, 2015)

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