

Perspective

Health promotion meets sustainable movement-based education in school—a “walking school” initiative in Sweden

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Abstract

The World Health Organization states that physical activity has the potential to influence physical, mental, and social dimensions of health in a powerful way. However, in modern society, physical activity is increasingly becoming an active choice, rather than a part of everyday life. Schools have been identified as key settings for health promotion, but physical activity initiatives in schools have rarely had a sustained impact. Interventions have been criticized for seeking to increase levels of physical activity by focusing on individual behaviors rather than considering the contexts and social structures in which individuals live their lives. With a theoretical foundation in settings-based health promotion, this article proposes an alternative initiative for sustainable movement-based education called Walking School. Walking School defines sustainable movement as the movement that is an integral part of the school day and school culture. Walking School, or outdoor teaching while walking, has the potential to (i) be inclusive of both teachers and students, (ii) extend the classroom and make physical activity a collective responsibility of all teachers, not just physical education teachers, (iii) reduce sedentary time and increase physical activity without losing instructional time, (iv) stimulate physical activity and create conditions conducive to the development of new habits by using the outdoor environment as a teaching space, and (5) become part of the school's core business of education, and ultimately a part of the school culture.

Keywords: settings approach; whole school approach; participatory; outdoor education; didactics; intervention; physical activity

Contribution to Health Promotion

- Schools are considered an important setting for increasing physical activity.
- Earlier research on physical activity initiatives in schools has often focused on individual behaviors.
- Outdoor education has potential and deserves further attention, not least from a sustainability perspective.
- We aim to present an alternative initiative called Walking School, which is intended to promote sustainable movement-based education with the theoretical frame of settings-based health promotion.

INTRODUCTION

There is a consensus that action is needed to increase physical activity levels among children and adolescents, and schools are considered an ideal setting to effect large-scale change (World Health Organization 2020). However, initiatives to increase physical activity have collectively failed to result in a significant increase in physical activity levels among children and adolescents (Owen et al. 2017, Love et al. 2019, Pfladderer et al. 2021). This underscores the necessity of focusing on how physical activity initiatives should be designed to become more sustainable.

To date, initiatives for physical activity in schools have given less attention to secondary school students (12–16 years), to lower-intensity physical activity, and to physical activity

integrated as a basis for teaching rather than as an addition to the traditional school environment (Love et al. 2019, Pfladderer et al. 2021, Brandes et al. 2022, Rodrigo-Sanjoaquin et al. 2022).

The aim of this article is to respond to criticism directed at initiatives for increasing physical activity and to present an alternative called Walking School, which is intended to promote sustainable movement-based education.

With sustainable movement in mind, the article will critically examine physical activity initiatives in schools, introduce outdoor education as an alternative educational context, and advocate for the use of a settings-based approach as a theoretical framework. Finally, the Walking School initiative will be presented, followed by arguments justifying its potential to contribute to sustainable movement-based education.

BACKGROUND

Physical activity is a polarized phenomenon worldwide, with cultural nationality, income, and gender as significant factors (Guthold et al. 2018). From a European perspective, the proportion of young people who meet recommended levels of physical activity decreases as children become adolescents (Kokko et al. 2019). At the national level, habitus and cultural capital have also been shown to influence individuals' participation in physical activity (Jakobsson et al. 2012). In modern society, physical activity is becoming less of an integral part of daily life, and sedentary behavior is on the rise (Tremblay et al. 2016, Guthold et al. 2018). Given this trend, one can argue that physical activity is increasingly becoming the result of an active choice, rather than a more unconscious choice related to habits and habitus. This is likely to increase the significance of cultural capital in relation to movement and to further polarize the practice of physical activity.

PHYSICAL ACTIVITY INITIATIVES IN SCHOOLS—A SUSTAINABILITY PERSPECTIVE

Schools are considered key settings for promoting various forms of sustainable development, such as health goals related to physical activity (World Health Organization 2020). In addition, schools are uniquely positioned to influence large numbers of people over a relatively long period of time (Webster et al. 2015). However, schools are traditional institutions where students are expected to be predominantly sedentary (Mygind 2007), school interventions typically focus on increasing physical activity rather than reducing sedentary behavior (Webster et al. 2015, Morton et al. 2016, Owen et al. 2017) and school-based interventions typically provide opportunities for moderate to vigorous physical activity (MVPA) rather than specifically targeting the educational context (Webster et al. 2015, Morton et al. 2016, Owen et al. 2017). The traditional classroom-centered teaching context usually remains unchanged in these interventions, and this has been problematized. The criticism is directed at how interventions seek to increase the level of physical activity by focusing on individual behaviors, rather than considering the context and social structures in which individuals live their lives. This individualistic focus is linked to the neoliberal governmentality discourse problematized by Larsson and Thedin Jakobsson (2023). Neoliberal governmentality advances an idea of human beings as independent individuals who make decisions in a free market guided by objective knowledge (Larsson and Thedin Jakobsson 2023). Neoliberal governance frameworks place a strong emphasis on individual responsibility and choice, positioning children as responsible for their own health (Powell and Gard 2014). This individualistic and reductionist discourse relates to Caspersen et al. (1985) definition of physical activity, which has broadly prevailed for a long time. Pigin (2019) contends that physical activity is an inherently individual pursuit for every individual but claims that it involves much more than just any bodily movement produced by skeletal muscles that require energy expenditure (Pigin 2019, p. 131). Pigin (2020) proposes an alternative definition.

Physical activity involves people moving, acting and performing within culturally specific spaces and contexts, and influenced by a unique array of interests, emotions, ideas, instructions and relationships. (Pigin 2020, p. 5)

In relation to Pigin (2020) definition of physical activity, and in contrast to physiological and behavioral studies, review articles have shown that initiatives aimed at increasing physical activity in schools through a multicomponent design that transforms the context have proven to be more successful (Owen et al. 2017, Brandes et al. 2022, Rodrigo-Sanjoaquin et al. 2022). Examples of such components include policy, physical education before and after school, staff involvement, family and community engagement, school curriculum changes, teacher training, and active breaks (cf Owen et al. 2017, Brandes et al. 2022, Rodrigo-Sanjoaquin et al. 2022). García Bengoechea et al. (2024) connect to this multicomponent approach and argue that the most significant improvements are likely to result from interventions that effectively transform the system by building on existing strengths and available resources, rather than concentrating on individual changes. A focus on the system should, however, not exclude the individual. An increasingly common approach within physical activity initiatives, Physically Active Learning (PAL), stresses a particular risk of students becoming passive recipients of structured activities if teachers overly focus on physical activity at the expense of educational quality (Chalkley et al. 2023, 2024, Mandelid et al. 2024). An overly focus on physical activity misses the point with PAL (Chalkley et al. 2023) and instead risks adding extra activities to the everyday school day, in contrast to an integrative “add-in” approach (Bentsen et al. 2022). One way to address this criticism is through the use of outdoor education, which has the potential to include physical activity as a means of teaching (Bentsen et al. 2022).

OUTDOOR EDUCATION

Education outdoors, or outdoor education, as the overarching term is called (cf Fiskum and Jacobsen 2012), fundamentally differs from more traditional teaching in four respects. Outdoor education is practiced outdoors, contributes to physical activity, typically incorporates the outdoor environment into the lesson itself, for example by studying the growth of a tree in relation to the movement of the sun during the day, and adds a sustainability aspect to the teaching in terms of conservation values, environmental ethic or environmental concern (Mygind 2009, Ernst et al. 2021, Bentsen et al. 2022). From a scientific point of view, four aspects of outdoor education are worth highlighting in relation to the ambition of creating a sustainable initiative. First, the contextual aspect: spending time outdoors, as opposed to indoors, is associated with higher levels of physical activity among children (Gray et al. 2015, Bentsen et al. 2022). Green environments also have the potential to positively influence our health and have been shown to stimulate physical activity (Schantz 2022). Secondly, the activity aspect: outdoor learning has been shown to contribute to significantly higher levels of physical activity and less sedentary time for students, compared to traditional classroom-based instruction (Mygind 2007, Romar et al. 2019).

Lower-intensity physical activity, which is typically integrated within outdoor education, has also been positively associated with various health markers, even when controlling for MVPA (Poitras et al. 2016, Amagasa et al. 2018). Thirdly, the teaching aspect: Outdoor education has been shown to have measurable academic benefits for students (cf Becker et al. 2017, Miller et al. 2021, Mann et al. 2022). Research

suggests that a combination of outdoor environment and physical activity can have an adaptive effect on our cognitive abilities (Boere et al. 2023). This adaptive effect may be one of the reasons behind the positive correlation between outdoor education and learning. And fourthly, the inclusion aspect: in relation to all sustainability dimensions, and in addition to the potential benefits of teaching in the environment we are trying to protect, it can be argued that lower-intensity physical activity is less dependent on physical and cultural capital than higher levels of physical activity and is likely to be more accessible to all individuals. This effect appears to be enhanced when the context is the outdoor environment (cf Bentsen et al. 2022).

Although the majority of studies on outdoor education show positive effects in relation to not only physical activity and academic performance but also social, physical and psychological dimensions of health, reviews of the field state that more research is needed to fully legitimize its place in education (Becker et al. 2017, Miller et al. 2021, Mann et al. 2022). Nevertheless, the potential of outdoor education deserves further attention and deeper analysis, not least from a sustainability perspective.

To maximize the potential for sustainability, there is reason to reflect on another aspect as well, namely feasibility (Bentsen et al. 2022). In terms of the characteristics of outdoor education, being in an outdoor environment, connecting abstract knowledge to a concrete and tangible reality, and being physically active all have inherent value, both individually and collectively (Miller et al. 2021, Schantz 2022). From a sustainability perspective, there are reasons to consider the effort required to implement and sustain a development initiative, regardless of its type. Less research has been done on outdoor education that focuses on the environment as the location and context of teaching without using the environment as a means of teaching (Miller et al. 2021). If one leaves aside the assumption that the environment should be used as a means for teaching, the effort required to implement and maintain movement initiatives can likely be reduced. Furthermore, such an approach has the potential to serve as a platform for making the outdoor environment a part of the teaching rather than just a context for it, if and when this is desired, and in a way that suits the teacher, the students, the location, and the specific subject.

One of the few exceptions in the field of outdoor education, which takes the environment as the location and context for teaching and focuses on incorporating physical activity into teaching is the Walking Classroom (TWC). TWC involves having students walk while listening to pre-recorded educational material and then answering questions related to the material upon returning to the classroom. TWC has only been studied to a limited extent, specifically in relation to 10-year-old children who had the option of walking indoors or outdoors and had limited opportunities to communicate with each other and with the teacher (Stoepker et al. 2018, Erwin et al. 2021). Overall, it can be said that TWC is a promising idea that has several strengths, but also some shortcomings, as it only allows for podcast-based teaching with pre-recorded material, affords limited opportunities for communication, and is not always conducted within and in relation to the outdoor environment.

To summarize, physical activity is a polarized phenomenon worldwide. Schools are considered an ideal setting to effect large-scale change. However, schools are traditional insti-

tutions, where students are expected to be predominantly sedentary, and initiatives have collectively failed to produce results. Physical activity initiatives have largely focused on individual behaviors rather than considering the context and social structures in which individuals live their lives. Less attention has been given to secondary school students (12–16 years), to physical activity of lower intensity, and to physical activity integrated as a basis for teaching. The outdoors is a promising context for addressing this criticism, and outdoor education is a promising pedagogical setting with the potential to integrate physical activity into the educational context. To do so effectively, and to further develop a recently created initiative for promoting sustainable movement-based education, a theoretical framework based on contextual and structural factors has been chosen.

A SETTINGS-BASED APPROACH AS A FOUNDATION FOR SUSTAINABLE MOVEMENT IN SCHOOLS

The settings-based approach to health promotion was initiated at the first International Conference on Health Promotion, held in Ottawa in 1986 (WHO 1986). The conference has been described as the starting point for the development of a public health agenda with a specific focus on contextual dimensions of health (World Health Organization 1986, p. 1). It was stated that: “Health is created and lived by people within the settings of their everyday life; where they learn, work, play and love” (World Health Organization 1986, p. 4).

A settings-based approach recognizes the direct and indirect impacts of a context on people’s well-being and aims to embed health in the culture, ethos, and core business of settings (Kokko and Baybutt 2022). This approach acknowledges the influence of social, economic, and cultural contexts on health behaviors and outcomes. WHO defines a “setting for health” as a social context in which people interact, highlighting the importance of integrating health into the cultures and structures of settings (World Health Organization 1998).

The approach has led to significant public health shifts advocating the empowerment of individuals in their everyday environments. This approach, while not explicitly articulating a theory, laid the groundwork for holistic, socioecological models of health that emphasize salutogenesis and the potentials inherent in social and institutional settings (Kokko and Baybutt 2022).

The settings-based approach seeks to move beyond traditional health education towards holistic initiatives that consider the broader context of people’s lives. Ultimately, it aims to foster supportive environments and empower communities to address health issues collaboratively (Kokko and Baybutt 2022), or to put it more concretely, the aim is to foster environments that make the healthy choice the easy choice.

Dooris (2006) proposed a conceptual framework for the settings-based approach that emphasizes core values such as equity and sustainability and comprises five characteristics. First, it adopts a salutogenic orientation, focusing on creating health rather than treating disease. Secondly, it employs an ecological model that recognizes the complex interactions between personal, social, and environmental factors. Thirdly, it views settings as dynamic systems, acknowledging their interconnectedness. Fourthly, it emphasizes holistic change through multiple interventions. Finally, it aligns health

promotion with the “core business” of settings and advocates for health in terms that are relevant to decision-makers. This approach seeks to embed health within everyday routines and activities (Kokko and Baybutt 2022).

The use of a settings-based approach as a foundation for health promotion in schools is not a novel concept. The concept of Health-Promoting Schools (HPS) emerged from the 1986 Ottawa Charter for Health Promotion. Initially developed by WHO in the European region, HPS has gained global recognition with its comprehensive guidelines and award systems (Kokko and Baybutt 2022). HPS has been proven to be effective in enhancing the health and well-being of students and in supporting teaching and learning in schools. Successful implementation of HPS is a multifaceted intervention that involves diverse and innovative activities across multiple domains, including the curriculum, school environment, and community (Lee et al. 2020).

Recently, a related concept has become increasingly common, namely the whole school approach (WSA) (Mogren et al. 2018). WSA stems from UNESCO's Education for Sustainable Development (ESD) (Mogren et al. 2018, Education For Sustainable Development 2022). As research on ESD in organizational contexts remains limited (Mogren et al. 2018), it is difficult to definitively determine when the term “whole school approach” was coined. Based on early theoretical literature related to WSA (e.g. Henderson and Tilbury 2004, Hargreaves 2008), it can be inferred that WSA probably emerged in the early 2000s.

HPS and WSA are sometimes used as synonyms (World Health Organization 2021, p. 9) and are said to have the same origin (World Health Organization 2021), and sometimes different aspects of them are emphasized rather than differences of a substantive nature. The existence of concepts such as WSA and HPS highlights the relevance of these types of concepts for education.

The significance of a holistic and context-based approach, such as the settings-based approach, becomes particularly clear in relation to traditional institutions like schools, where norms, habits and cultural factors have long been reproduced. In such contexts, the established cultural factors have the power to either unify or polarize the practice of different social behaviors and expressions, such as physical activity (cf. Jakobsson et al. 2012). Sustainable movement initiatives in schools therefore need to address these structures and complexities in order to be effective and sustainable (cf. Daly-Smith et al. 2024).

Several reviews and commentaries have been written on the topic of the settings-based approach, some of which stand out in terms of citations and significance. Collectively, these articles advocate for a nuanced, context-sensitive, and participatory approach to bridge the gap between research and practice, promote health equity, and achieve sustainable outcomes in various settings (Whitelaw et al. 2001, Green et al. 2009, Poland and Dooris 2010, Shareck et al. 2013, Bloch et al. 2014, Mittelmarmark 2014).

As with all theories and concepts, there are critical aspects and factors to consider. Regarding the doubts about the practical effectiveness of the settings-based approach (Shareck et al. 2013), one can ask whether it is possible to determine the practical effectiveness of a holistically conceived concept within health. Nevertheless, its conceptual strength remains (Shareck et al. 2013), which also makes it relevant in relation to the challenges we observe today in sustainable development.

THE SETTINGS-BASED APPROACH CONCEPTUALIZED IN TERMS OF THE WALKING SCHOOL INITIATIVE

In this section, the Walking School initiative will be described along with three aspects that describe and explain the initiative's potential to contribute to sustainable movement-based education.

Walking School is framed by a settings-based approach to health promotion and tailored to address the critical issues related to initiatives for physical activity in education, the definition of sustainable movement, and the limitations of TWC. Walking School is an initiative centered around outdoor education conducted while walking and is aimed at secondary school students (12–16 years old). Inspired by the settings-based approach, Walking School defines sustainable movement as movement that is integrated into the school day and the school culture. The realization of outdoor education during walks is a process that will be developed in collaboration between researchers, teachers, and students. During the project, the students will regularly answer questions about their experiences of the teaching and their wishes for changes to the teaching. These reflections will be compiled and, along with the teachers' reflections and the researchers' observations, will serve as content for the regular development meetings. Walking School will be implemented as a regular theme of curriculum-based education, in which teachers of all subjects share collective responsibility.

Researchers will gain buy-in from teachers when the researchers visit the school and provide information about the research study. The information includes, for example, (i) results from previous research showing positive correlations between outdoor education, physical activity, academic outcomes, and various dimensions of health, (ii) the initiative's ambition to be integrated into regular teaching, a so-called add-in approach, to prevent adding anything beyond curriculum-based instruction, (iii) time allocated for regular development meetings with researchers as support, (iv) development of the teachers' own teaching repertoire, and (v) contributions to research aimed at improving students' health.

In the Walking School initiative, the participating classes have two lessons per week that take place outdoors during walking. The start and end of the lessons can be conducted indoors or outdoors and pauses during the walk can be used to gather the class to enhance communication or teaching. The teacher has control over the content, structure, and route of the walk. Walk and talk with discussion questions, podcast-based teaching, or quiz walks are examples of how regular curriculum-based teaching can be adapted to the outdoor walking format. However, these are just examples, as the participating teachers determine the content and structure themselves. In keeping with the complex and personal nature of physical activity (Piggin 2019, 2020), Walking School is intended to offer a form of low-intensive physical activity that one does not have any specific opinion about, a form of habitual physical activity or an everyday routine (Dooris 2006). If we refer to research on habits and habit formation in relation to physical activity, studies show that habits form when behaviors are repeatedly practiced in response to noticeable triggers or stable environmental conditions, with a sense of automaticity and in the absence of conscious thought (cf. Hagger 2019). In short, this initiative aims to foster an environment that makes the healthy choice the easy choice (Kokko and Baybutt 2022).

The following three aspects describe the initiative's potential to contribute to sustainable movement-based education.

First, the outdoor environment can be argued to provide a supportive context (World Health Organization 1986, Kokko and Baybutt 2022) for physical activity, in contrast to the school environment, which is traditionally bound by more sedentary traditions and habits (Mygind 2007, 2009, Bentsen et al. 2009, 2022, Romar et al. 2019, Weight et al. 2021). In addition, the outdoor environment has the capacity to serve as a consistent and stable environment with contextual features and cues that contrast with those of the regular classroom environment. These aspects, in combination with the regular practice of outdoor teaching during scheduled walks within the curriculum-based teaching, collectively create conditions conducive to the development of new habits (cf Hagger 2019). This aspect concerns a contextual dimension related to the education.

Secondly, walking is a low-intensity physical activity with the potential to include all teachers and students. Walking can be practiced simultaneously with teaching, thus functioning as a means of teaching rather than the objective of teaching (Becker 2016, Biber and Heidorn 2021, Weight et al. 2021, Kokko and Baybutt 2022). This aspect relates to the content that is the focus of the educational practice.

Thirdly, outdoor walking has the potential to expand the classroom outside the school building and make physical activity a collective responsibility for all teachers, rather than solely the responsibility of physical education teachers (Poland and Dooris 2010, Skolverket 2011, Bentsen et al. 2022). Additionally, the participatory design makes the Walking School context-sensitive and empowers teachers and students to make the initiative their own (Shareck et al. 2013, Bloch et al. 2014, Chalkley et al. 2024). This aspect relates to a contextual dimension comprising the school and society.

Altogether, these aspects strengthen the potential for the initiative to become a part of the core business of the school, namely education, and ultimately a part of the school culture (Kokko and Baybutt 2022).

Despite the potential of the initiative, there are also many challenges and aspects that require critical examination. The initiative aims to foster a taste for physical activity, or more specifically, a taste for learning while walking. The participants consist of the teachers interested in taking part and the students they teach. The selection of participating classes, and thus of the students who are invited, is therefore not decided by the students themselves, but by the teachers. This is a logistical necessity for implementing the initiative and not something that distinguishes it from regular teacher-initiated instruction; however, it remains a subject of critical discussion in terms of autonomy and motivation. In addition, there are several issues that may challenge the initiative's aim of promoting sustainable movement. Teaching and learning outdoors while walking may be perceived as inconvenient by both teachers and students, which may have a negative impact on student performance and knowledge development. There may also be concerns about losing control of the class when it is not confined within four walls. Poor weather conditions can also undermine the motivation of teachers and students to carry out the lessons as intended.

THE WALKING SCHOOL INITIATIVE—IMPLEMENTATION AND STUDY

This article has presented the Walking School initiative, a conceptualization of the settings-based approach. The initiative

will be piloted during one semester at the secondary school level of a Swedish compulsory school. It will use a mixed-methods participatory design to be able to answer questions about how to promote sustainable movement-based education.

With the intention to create conditions for integrating the initiative into the core activity of the school, namely teaching, a didactic perspective has been added to better understand how the initiative can become part of the teaching process. The expanded didactic triangle developed by Hudson and Meyer (2011), regarding the contextual dimension of teaching, serves as the theoretical foundation for the didactic perspective.

The didactic triangle is a methodological aspect that illustrates the complexity of teaching and the interplay between its components. The form and content of teaching are shaped by the relationship between student, teacher, and content, and in relation to the context in which it occurs. The expanded didactic triangle, which includes the school and society, adds a contextual dimension within which teaching is conducted and with which it interacts (Hudson and Meyer 2011).

To address all of these aspects, the data will include audio recordings of planning meetings with teachers, surveys of students before, during, and after the initiative, observations of walking school lessons, interviews with students and teachers, and GPS data on the walking lessons. These various types of data are intended to enable a determination of how Walking School contributes to the movement that is integrated into and becomes a part of the school day and the school culture. In line with health promotion traditions, the study will combine diverse but complementary methods or approaches (Kickbusch 1986). To identify the extent to which the initiative will align with this aim, the following five aspects will be analyzed from the perspectives of both students and teachers (Hudson and Meyer 2011).

The first of these aspects is whether the outdoor walking will be the means of teaching rather than the objective of teaching and is related to the content in the expanded didactic triangle (see Fig. 1).

How and to what extent the initiative becomes a routine, or a habitual part of the school day, is the second. This is connected to the relationship between the contextual dimensions of school and instruction. The third aspects concerns whether students and teachers perceive themselves as competent, autonomous, and socially connected to the initiative (Deci and Ryan

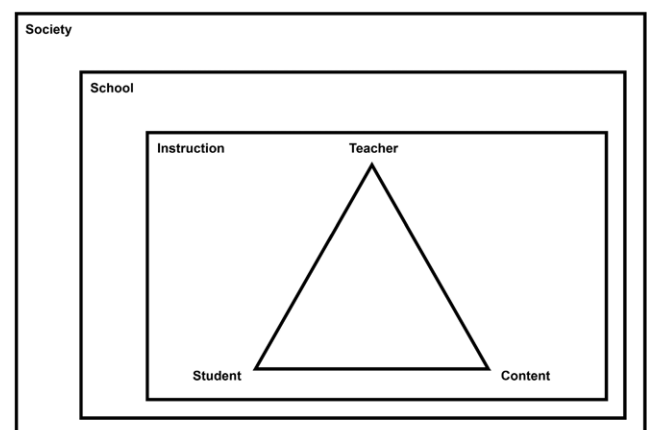


Figure 1. Inspired by Hudson and Meyer (2011, p. 19).

2013). This considers both the teacher and the student respectively in relation to the content. The fourth aspect concerns possibilities and challenges regarding didactic aspects such as the relationship between the teacher, the student and the content, and in relation to didactic questions such as what, how and why. For example: What content is suitable? Why is this content chosen? And how is it taught? Finally, we will analyze teachers' and students' experiences, opinions, and feelings about the initiative.

The Walking School initiative was started by researchers with a background in teaching and has been refined in collaboration with participating teachers and students through a process aiming to advance toward sustainable movement-based education, a so-called top-down/bottom-up approach (Dooris 2006). Walking School positions itself at the intersection between public health and didactic research traditions and can therefore be described as interdisciplinary research. In its attempt to obtain concrete knowledge within the watertight gap between medical science and social science, Walking School has the potential to make the healthy choice the easy choice, in contrast to a neoliberal governmentality discourse problematized by Larsson and Thedin Jakobsson (2023).

A development that promotes physical activity as a natural part of everyday life, for both teachers and students, rather than as an identity marker, has the potential to make physical activity a habit and a part of a culture, and it can likely counteract further polarization, making physical activity and its health benefits more accessible to all individuals. The future will reveal whether this can become practice-based evidence.

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Author contributions

Both authors contributed to the conceptualization of the study. R.K. has been mainly responsible for the review of the literature and writing. S.G. has contributed to all parts. Both authors have read and approved the final manuscript.

Conflict of interest

No conflict of interest.

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Ethical information

Ethical approved by the Swedish Ethical Review Authority reference number 2024-01338-01.

Data availability

No empirical data were collected for this study.

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