

**Danish 'add-in' school-based health promotion
integrating health in curriculum time**

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Danish ‘add-in’ school-based health promotion: integrating health in curriculum time

Abstract

Schools provide an important setting for health promotion and health education. In countries where health education is not a specific subject, it is typically undertaken by teachers in health-integrating subjects such as biology, home economics, or physical education (PE). More ambitious and holistic frameworks and whole school approaches such as Health Promoting Schools (HPSs) have been considered best practice for the past three decades.

Recently, more attention has been given to policy initiatives integrating health activities into school curriculum time. This paper discusses potentials and challenges of school-based health promotion applying an ‘add-in’ approach, that integrates health activities into teachers’ curricular obligations without taking time away from them, based on a presentation of three Danish cases. This may serve as a supplement to health promotion activities that have been initiated over and above the day-to-day teaching (‘add-on’).

We contend that an ‘add-in’ approach to school health promotion provides a potential win-win situation where both health and core education stand to gain; makes it possible to reach a wider range of schools; mobilises additional resources for health promotion; and leads to more sustainable activities. However, potential limitations including not addressing structural aspects of health promotion and reliance on a relatively limited evidence base should also be considered.

Introduction

Non-communicable diseases (NCDs) are now the main global health challenge in high-, middle- and low-income countries (WHO, 2013). Simultaneously, recent evidence shows the importance of a life course perspective indicating that intervention early in life has high impact on NCDs risk reduction (Hanson and Gluckmann, 2014). Along with interventions during pregnancy and early infancy, school health programmes play an important role in primary NCDs prevention. This means that it is important to continue experimenting with and documenting new and improved ways of school-based health promotion.

The WHO's Health Promoting Schools (HPS) framework, developed in the late 1980s, is underpinned by a reciprocal relationship between health and education (Langford *et al.*, 2014). In Europe, the HPS framework built on values like democracy, empowerment, equity, and participation (Barnekow-Rasmussen and Rivett, 2000; Young, 2005; Paulus, 2007). A HPS framework is a whole-school approach to health, addressing all areas of school life combining health education in the classroom with development of school policies, school environment, life competences, and involving the surrounding school community (SHE network, 2013). There is slight variation in the terms used HPS across different European countries; however, their intentions are similar (Turunen *et al.*, 2017).

Presently, there is evidence of small effects of some HPS interventions on physical activity, tobacco use, and fruit and vegetable intake. This was found in systematic reviews that included interventions addressing the main areas of a HPS: health education topics in the formal school curriculum, school ethos and/or physical environment change, and/or family and community (Langford *et al.*, 2014, 2015). However, only few of the included studies examined the long-term impact on outcomes once the intervention had finished, leaving the sustainability of the HPS approach still to be determined (Langford *et al.*, 2014). A challenge to sustainability is that the

multicomponent HPS approach tends to be viewed by schools and teachers as yet another ‘add-on’ in a busy school life. This was shown in an evaluation of the implementation of HPS in Scotland (Inchley *et al.*, 2007) and in the consensus statement from a colloquium of people from five continents on the HPS model (Macnab *et al.*, 2014). Both studies concluded that HPS should be integrated in all aspects of school life and linked to the core objectives and ethos of school.

The lack of historical and institutional traditions for this kind of holistic health promotion in schools, as well as more recent neo-liberal and neo-conservative (political) forces continue to act as structural barriers for teachers, schools and even students to prioritise health promotion (Danielsen *et al.*, 2017). Part of the explanation is that ‘health’ often does not represent a core subject and is thus not examinable in some countries, e.g. Denmark (Danielsen *et al.*, 2017). Many schools are reducing their provision of health education because it is not a statutory requirement and does not contribute to the academic performance metrics that are increasingly used by governments to manage schools’ performance and by parents to select a school for their child (Shepherd *et al.*, 2013, Tancred *et al.*, 2017).

Recently, there have been calls for holistic, school-based health promotion approaches that align with, and integrate within, school curricula and consider the core aims, objectives and essential procedures of education systems (ASCD, 2015; Norris *et al.*, 2015; Paulus, 2007; Webster *et al.*, 2015). Such approaches should aim to promote learning, health, and development of the whole child simultaneously (ASCD, 2015; Norris *et al.*, 2015; Paulus, 2007; Webster *et al.*, 2015), while drawing on both educational and health expertise (Bay *et al.*, 2017). Hence, there is a growing need to develop, implement and evaluate practices that integrate health promotion into curriculum time to deliver increasingly higher academic learning. One example of this is a meta-analysis that found school-based programmes were effective in improving pupils’ academic performance by a standardised reading or math test (Durlak *et al.*, 2011). Further, the analysis showed that

programmes conducted by classroom teachers were more effective than those conducted by non-school personnel, and contrary to the study hypothesis, single component programmes (only classroom-based) were more effective than multi-component programmes. The majority of studies included in the analysis was from the United States of America (186 of 213 studies = 87%), which makes additional cases from Europe relevant.

The present paper presents three Danish cases of health promotion in primary and lower secondary schools (equivalent to an age range of approximately 5-16 years of age) based on an ‘add-in’ approach that integrates health aspects within curriculum time of the educational system. We use the term ‘add-in’ to denote health promoting activities that becomes part of curriculum-based educational activities without taking time away from core curriculum obligations. In contrast, ‘add-on’ is used to describe activities applied on top of the core curriculum obligations as something extra during both classroom teaching and school management. ‘Add-in’ approaches seek to mobilise additional resources, interdisciplinary teaching and learning, and broaden the range of school-based health activities and increase sustainability. We argue that the ‘add-in’ approach may provide a more accessible approach for schools to implement health promotion components and thus provide an important supplement to the more comprehensive HPS programmes.

Three Danish cases of ‘add-in’ health promotion

In the following sections, we present three Danish cases illustrating the ‘add-in’ approach. Though different, the three cases share the main characteristics that educational activities are designed to integrate health promotion elements into curriculum time in addition to fulfilling explicit standard learning objectives.

IMOVE: awareness of daily physical activity in math education

IMOVE (www.imove.zone) is an ongoing educational programme that integrates health education about physical activity in maths with two objectives: 1) to enhance students' mathematical comprehension and ability to apply statistics, and 2) to develop students' understanding of the importance of daily life movement and how to achieve an adequate level of daily physically activity. The target group is Danish children in grades 5-7 (10-14 years). The educational approach includes participatory investigation and learning based on self-collected data. The students wear pedometers to measure the number of steps taken during school hours for one week, and during the following week they analyse the step data and work with health education assignments as part of their math lessons.

The programme was developed in several phases. First, an exploratory study identified that wearing pedometers followed by a visualization of the step data in diagrams promoted children's insight and the ability to reflect upon their own daily physical activity level (Bruselius-Jensen *et al.*, 2014). Second, self-reported step data from 281 children across four schools in Copenhagen showed that IMOVE was highly feasible with 96% of children having valid pedometer data (Bonde and Bruselius-Jensen, 2017). Third, the use and visualization of step data from the 281 children in 59 math lessons the following week showed that IMOVE contributed to developing children's physical activity-related health literacy and enhanced their ability to translate health knowledge into their own everyday lives (Bruselius-Jensen *et al.*, 2017a). However, one challenge the latter study identified was that some math teachers focused primarily on teaching math and did not engage the students in critical dialogues, e.g. on how physical activity was affected by the structure of the school day. Further, an evaluation, exploring the applicability of IMOVE in everyday school practice, by 87 math teachers from 59 schools showed that vast majority of teachers appreciated the concept of combining math and health education and reported that it worked well in practice, and they found it was motivating for pupils to collect their own data and to use them in the subsequent

teaching (Bonde *et al.*, 2016). Finally, in short, IMOVE is an educational programme that is easily integrated into maths to enhance pupils learning and awareness on physical activity.

Move Eat Learn: cross-cultural encounters as drivers for health

The Move Eat Learn (MEL) project is based on the didactics of ‘cross-cultural learning’ as an approach to promote learning by use of cultural encounters. The idea is to raise curiosity, generate authenticity and create insight into others’ lives, thus initiating reflections about oneself as an individual and as part of a culture and a society. Cross-cultural encounters provide an opportunity to enhance communication competences, comprehend plurality, and create room for students to discover similarities and differences between people and living conditions (Bruselius-Jensen *et al.*, 2017b). This learning concept may be used within all subjects or for themes such as health promotion in a school context (<https://www.melproject.com>). As the name indicates, the focus was on learning, raising awareness. and taking action in relation to movement and food.

The basic methodology used in MEL was developed by a group of Danish and Kenyan researchers in 2011-12 in collaboration with a Kenyan primary school (Larsen *et al.*, 2014). The three-year MEL project was initiated by three Danish primary and lower secondary schools in 2013 and a link to the primary school in Nairobi, Kenya was established. Initially, the four school leaders made the overall plans whereby grades 5-6 (age 10-13) and the educational activities were selected taking into consideration the incongruence between the school calendars (January-November in Kenya and August-June in Denmark). Each school year cycle started with exchange of handwritten letters between the students according to the traditional pen pal concept. This was followed by combinations of class preparations and Skype sessions between Danish and Kenyan students centred on various topics related to sports, food, math, science, and production of music videos. Four guides for teachers were produced describing aspects of exemplary teaching modules on

sports, food culture, math, and science using cross-cultural processes. In addition, a generic fifth book entitled ‘Move-Eat-Learn – An introduction to a transnational school project’ was written, which describes general principles of cross-cultural learning as well as practical advice (<https://www.melproject.com>).

An extensive process evaluation was conducted based on systemic action research (Burns, 2014). Even though the MEL project faced a significant number of practical challenges in terms of coordination and functionality of IT equipment, the cross-cultural encounters that took place led to very high levels of enthusiasm and learning among the pupils (Bruselius-Jensen *et al.*, 2017b). In addition, the teachers reported gaining many new insights about educational approaches in different countries and cross-cultural teaching competences. Thus, the MEL cross-cultural encounters ‘add-in’ themes such as food, daily physical activity and lifestyle to other traditional subjects and at the same time enhance motivation and opportunity for learning in relation to key elements of the students’ daily lives.

Education outside the classroom: learning, health and well-being through outdoor teaching

Education outside the classroom (EOtC) is a pedagogical method that changes the traditional classroom setting to whatever alternative environment is chosen by the teacher (Barfod *et al.*, 2016). We draw on Danish *udeskole* (literally meaning ‘outdoor school’) as an illustrative example of EOtC, targeting grade 0 to 9 (students aged 6-16), and defined as compulsory curriculum-based educational activities outside of school on a regular basis, e.g. one day weekly or fortnightly (Bentsen *et al.*, 2009) (www.udeskole.dk).

In Denmark, *udeskole* has mainly been practised in natural settings, e.g. forests or parks in the local community (Bentsen *et al.*, 2013). *Udeskole* activities are characterised by making use of the local environment when teaching specific subjects and curriculum areas by, e.g. measuring and

calculating the volume of buildings in math, writing poems in and about the graveyard when teaching religion, or visiting historically significant places or buildings in history education (Bentsen *et al.*, 2009). In Denmark, EOtC is neither a statutory requirement of the school system nor directly mentioned in the Danish national curriculum. Yet its practice has increased from a few teachers using the approach in 2000 to approximately 18% of all schools having at least one teacher practicing EOtC in 2014 (Barfod *et al.*, 2016).

A new school reform was introduced in Denmark in August 2014, which included support for the use of movement and physical activity. The reform encouraged variation of teaching methods with the aim of promoting more active, positive and healthy school days for pupils (the Danish Ministry of Education, 2014). Subsequently, the Danish Ministry of Education and the Danish Ministry of Environment joined forces with a consortium of university colleges and *udeskole* experts in the ‘Development of *Udeskole*’ project aiming to generate and disseminate practice-related knowledge about *udeskole*, to support the development of *udeskole* and to spread *udeskole* as a teaching method.

Several literature reviews have shown multiple benefits of EOtC, such as increased concentration, motivation and levels of physical activity (Becker *et al.*, 2017; Muñoz, 2009; Rickinson *et al.*, 2004). The Danish TEACHOUT project (www.teachout.ku.dk) addressed the overall research question: will the alternative teaching methods in the practice of EOtC improve children’s physical activity level, academic learning, social interaction, motivation, and attitudes towards schooling? And if so, how? (Nielsen *et al.*, 2016). Hence, Bølling and co-authors (Bølling *et al.*, 2018) documented that regular exposure to EOtC promoted social well-being, especially for pupils of low socio-economic status. Further, Schneller and colleagues (Schneller *et al.*, 2017a) showed that EOtC led to boys spending more daily time being moderately and vigorously physically active; no differences were found for girls. They concluded that implementing EOtC into

schools' weekly practice can be a time- and cost-neutral supplementary way to increase time spent being physically active for boys from grades three to six. They further showed that days with EOtC were associated with increased light physical activity for girls and boys (Schneller *et al.*, 2017b).

It is a limitation that often EOtC is not a compulsory curricular unit in basic training of school teachers. Therefore, several teachers have neither met the concept nor had training in EOtC during their education (Bentsen & Jensen, 2012). Further, the culture and tradition of 'mainstream' classroom teaching can be a barrier and limitation in relation to EOtC.

EOtC is an example of an 'add-in' holistic school-based health promotion approach, as it can integrate health promotion into curriculum time. EOtC may provide schools and teachers with a teaching method to improve learning, health and well-being in the class through outdoor teaching approaches as part of curriculum time.

Discussion

The three cases illustrate approaches where health promotion may be integrated within on-going curriculum-based activities in Danish schools. The IMOVE programme combined awareness of physical activity in everyday life with teaching applied statistics in maths (www.imove.zone). The MEL project illustrated how cross-cultural encounters may be used as a driver for learning in general and about food as well as everyday physical activity in particular (<https://www.melproject.com>). The TEACHOUT project illustrated that EOtC, which may be applied in any subject, increases physical activity and social well-being as well as potentially the students' learning and social relations (<https://teachout.ku.dk>). The three Danish cases share the characteristics that educational activities are designed to integrate – 'add-in' – health promotion elements into curriculum time in addition to fulfilling explicit standard learning objectives.

The ‘add-in’ approach has a number of implications for school-based health promotion. The integration of health aspects into education may benefit health promotion as well as the teaching itself, thus creating a win-win situation, e.g. in the case of IMOVE where teaching statistics becomes more concrete and relevant for the students (Bruselius-Jensen *et al.*, 2017). The integration within curriculum time means health aspects arise ‘automatically’, i.e. the pupils, and in some cases the teachers, are not required to opt for health in its own right. Thus, the number of health promoting agents is expanded from the group of health care professionals (such as school nurses) and teachers with a specific interest, to all teachers who apply the ‘add-in’ package within a given subject. Consequently, a much larger number of schools are exposed to various kinds of health promoting activities, and as long as ‘add-in’ approaches serve the purpose of contributing to the core goals of educational systems, they are also likely to be more sustainable (ASCD, 2015).

As compared to the comprehensive whole-school approaches (SHE network, 2013), adding health promotion into various parts of schools’ core educational activities (e.g. IMOVE in math and EOtC in all subjects) constitutes a more limited level of ambition. At the same time, it may be more manageable and realistic for many schools that find it difficult to apply new approaches in a busy school life (Inchley *et al.*, 2007). In other words, ‘add-in’ approaches to health promotion provide an opportunity for schools to have *some* health promotion activities, even though they are not ready to commit to a whole school approach such as the HPS framework (Barnekow-Rasmussen and Rivett, 2000; Young 2005; Paulus 2007). This broadens the coverage of school health promotion. Naturally, ‘add-in’ approaches can also be a component in whole school approaches as HPS.

On the other hand, the ‘add-in’ approach also has limitations. It may be argued that the application of an ‘add-in’ health package within a given subject in a given grade is rather limited and may not have a significant overall bearing on the pupils’ health. Furthermore, the ‘add-in’ perspective tends to be linked to teaching activities, which means that there is a danger that more

structural aspects of school health promotion (e.g. formulation of school health policies, improvement of canteen food or improvement of outdoor school facilities to make them more ‘movement friendly’) may not be captured by the ‘add-in’ approach. Although necessary and relevant, activities primarily targeting an increase in health literacy create little change in structural conditions, such as school policies. This addresses a general school health promotion dilemma: should we target pupils’ learning to promote healthy habits (in the individual) in the short- or long-term run, or should we target school and everyday structures to make better conditions for healthy behaviours in everyday school life?

The potential of the ‘add-in’ approach is highly sensitive to national and local variations. Factors such as national curricula, level of flexibility given to teachers’ choice of themes and didactical methodology, and degree to which the education system is focused on end-of-year exams provide important ramifications. Hence, we acknowledge that our argument for ‘add-in’ school-based health promotion is made on a limited set of Danish cases. However, we encourage exploration of the concept in other educational contexts.

Furthermore, it is essential for the success of ‘add-in’ activities, interdisciplinary teaching as with education in general, that the teachers have adequate training. Thus, these teaching tools should include instruction and guidelines for the teachers providing the necessary factual background knowledge and enabling them to apply both the subject-specific and health-related aspects, as was the case in IMOVE, MEL, and EOtC.

Since the Ottawa Charter in 1986, a number of global conferences have focused on specific aspects of health promotion (WHO, 2018). The global conference in Helsinki 2013 focused on Health in All Policies (HiAP), defined as “an approach to develop and implement public policies from outside the health sector that systematically takes into account the health and health systems implications of decisions, seeks synergies and avoids harmful health impacts, in order to improve

population health and health equity” (WHO, 2014). A HiAP approach emphasizes the consequences of public policies from other areas on health determinants, and it assumes that collaborations between policy sectors from both inside and outside the public health sector is an important precondition for the development and implementation of HiAP (Ollila *et al.* 2013; Stahl *et al.*, 2006). The ‘add-in’ approach, whereby health promotion is integrated into curriculum time, may be seen as an equivalent to the current HiAP initiative (ASCD, 2015).

Generally, teaching subjects such as language, math and science is considered the main task of school (ASCD, 2015). In many countries, there is a debate as to which other topics should be part of the curriculum, e.g. traffic safety, democracy, human rights, and reproductive health. In many cases these topics are promoted by various political or societal agents outside the schools that advocate for their particular priority area. Health may be seen as one of these ‘external’ topics.

The present paper advocates for the ‘add-in’ concept based on three cases, out of which only one, EOtC, has been subject to evaluation of effects. Further research is needed to examine the potential of the ‘add-in’ concept. More case studies are required to explore how it may be adapted to different grades, subjects, and countries. Further, the actual impact on health and education outcomes as well as the extent to which the concept appeals to schools that are not engaged in HPS activities. However, ‘add-in’ education may be perceived as complex interventions, which means that evaluation poses a challenge from a research methodological perspective.

Conclusion

In this paper, we have advocated for the need to consider the ‘add-in’ approach as a supplement to existing and more comprehensive school-based health promotion activities based on HPS. We contend that ‘add-in’ provides a win-win situation whereby both school-based health promotion and the core business of education stand to gain. From a health promotion perspective, it has the

potential of increasing the number of schools that engage in *some*, if not a *full-fledged*, health promotion effort. From an education perspective, the new approaches may provide new didactical perspectives on core subjects, which may increase learning and motivation outcomes.

Designing ‘add-in’ activities is highly dependent on local curricula, contexts, and teaching approaches. It is our hope that this paper has provided inspiration for educators and health promoters to collaborate in developing further ‘add-in’ activities integrated in curriculum time, which may be implemented and evaluated as a supplement to more comprehensive whole school HPS approaches.

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