

# The Process of Adapting High School-based Public Health Interventions for Use in Vocational High School Settings - The Case of the Young and Active Intervention

Marie Pil Jensen (✉ [mapj@sdu.dk](mailto:mapj@sdu.dk))

The National Institute of Public Health, University of Southern Denmark <https://orcid.org/0000-0003-4434-238X>

Louise Ayoe Sparvath Brautsch

National Institute of Public Health: Syddansk Universitet Statens Institut for Folkesundhed

Johanne Aviaja Rosing

National Institute of Public Health: Syddansk Universitet Statens Institut for Folkesundhed

Katrine Sidenius Duus

National Institute of Public Health: Syddansk Universitet Statens Institut for Folkesundhed

Andreas Jørgensen

National Institute of Public Health: Syddansk Universitet Statens Institut for Folkesundhed

Rikke Fredenslund Krølner

National Institute of Public Health: Syddansk Universitet Statens Institut for Folkesundhed

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## Research note

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# Abstract

**Objective:** The Healthy High school study aimed to promote wellbeing at high schools in Denmark. While the study was still running, the funding body encouraged the project group to test the applicability of one of the high school-based intervention components, i.e. the Young and Active (Y&A) intervention component, to a Vocational Education and Training (VET) school setting. Y&A comprised a peer-led innovation workshop aimed at inspiring first-year students to develop and implement activities at school which promote sense of community and movement during the school day. Students could apply for a start-up grant to establish new activities and facilities. This research note reports on the systematic process of adapting this intervention component to a VET school setting: 1) needs assessment, 2) preliminary adaptation design, 3) preliminary adaptation testing, and 4) adaptation refinement.

**Results:** Based on the needs assessment, the following adaptations were made to the original intervention component; 1) A narrowed objective and focus i.e. promoting active breaks during the school day, 2) The addition of activity props to support the implementation of active breaks, and 3) Changes to the target group. As part of the further adaptation process, this preliminarily adapted version will be pilot-tested among students at VET schools using mixed methods.

## Introduction

It is well-documented that there are socioeconomic inequalities in physical activity (PA) levels among 11-15-year-olds and that physical activity declines with increasing age (1, 2). 22% of male students and 9% of female students at Danish Vocational Education and Training (VET) schools (i.e. vocational high schools) engage in at least 7 hours of vigorous PA a week (3). VET, a more manual and labor market-oriented type of education, and The Higher General Examination Programme (i.e. high school), a more academically oriented type of education, are the most common types of upper secondary educations in Denmark. In 2015, a national school reform was introduced which directs VET schools to integrate 45 minutes of PA on each school day (4, 5). However, four years after the reform, small proportions of VET students report being regularly physically active during classes (24%) and school breaks (12%) (4). Thus, there is a need to promote PA among VET students, and a potential in supporting staff at VET schools in implementing 45 minutes of daily PA. The development of effective interventions to promote PA in young people are of key public health concern (6, 7), but they often fail due to difficulty translating intention to action (8). Active engagement in the form of participatory or co-creational approaches might be key to success in developing PA interventions for young people (9). Furthermore, multi-component PA interventions that affect both individual and environmental changes are recommended (10–12), and peer-led interventions can be effective in increasing PA (7). The Young & Active (Y&A) intervention component was part of a large multi-component intervention to promote wellbeing at high schools in Denmark – The Healthy High School study (13). Y&A uses co-creational methods to inspire and support high school students in developing activities to promote PA and sense of community at school (see methods). The project group was encouraged by the funding body to test the applicability of Y&A in a VET setting. Thus, we needed to adapt Y&A from a high school setting to a VET setting. The literature on

how intervention adaptations, sometimes called cultural adaptations, should be conceptualized, and how, when, and to which extent they should be conducted, is sparse (14). Most studies focus on adapting interventions from high to low income countries or between ethnic minority groups characterized by radically different cultural beliefs, traditions etc. (15, 16). However, adaptations can be sociocultural as well as geographical (14, 17). Thus, cultural adaptations may also be applicable for settings that differ from each other in more subtle ways e.g. in everyday practices and social norms such as two different educational settings i.e. high school and VET. The objective of the research note is to describe the systematic process of adaptation of the Y&A intervention to a VET school setting and present the preliminary findings of the initial phases of adaptation.

## Methods

### The Young & Active intervention

Y&A was originally developed for high school students as one of four intervention components of the Healthy High School study which aimed to promote student well-being (13). The purpose of Y&A is to enhance movement and sense of community in first year students at Danish high schools. Y&A consists of a peer-led innovation workshop facilitated by university students engaged to inspire students, through co-creational methods, to come up with ideas for activities that hold elements of movement and sense of community. Students may apply for a start-up grant to establish new activities and facilities at school. Five core principles underpin Y&A; 1) Peer-to-peer: The workshop is peer-led. 2) A broad concept of PA: We use the concept of movement rather than PA in the workshop to signify that activities do not have to be intense, and should be inclusive of all students irrespective of PA level and athletic abilities, 3) Creativity and innovation: Students are inspired to think creatively and innovatively during the workshops. 4) Student-driven activities: To promote ownership and motivation, students are encouraged to take responsibility for initiating and implementing their ideas for activities. 5) Sustainability: The workshop should be a recurrent event at the school and is designed for a three-year timespan with a gradual handover from the project group to the school. The program theory of Y&A is illustrated in Fig. 1.

### Cultural adaptation

The adaptation of Y&A was conducted in four phases inspired by the approaches described by Barrera & Castro 2006 and Marsiglia & Booth 2015: 1) needs assessment, 2) preliminary adaptation design, 3) pilot phase: preliminary adaptation testing, and 4) adaptation refinement.

### Phases 1 and 2: Needs assessment and preliminary adaptation design

The needs assessment focused on gaining insights into the new target population considering three domains inspired by Barrera & Castro 2006: 1) target group characteristics e.g. sociodemographic, norms, values, and preferences, 2) provider characteristics e.g. capacity and resources of VET staff, and 3) context e.g. features of the social, physical, organizational and political context (19). Multiple data

collection methods were applied: 1) review of existing literature (e.g. studies of the implementation capacity of VET schools) and other relevant documents such as the VET reform, 2) interviews with researchers and VET representatives who are experienced in working with the target group and participation in relevant conferences, and 3) two focus group interviews with VET students. The findings from the needs assessment informed the preliminary adaptation. Stirman et al. (2016) propose two broad domains of adaptations which guided phase 2; *content modifications*, which are changes to the intervention components and can be either at the surface level (e.g. language, visual identity) or deep level (e.g. aligning the content with the norms and values of the participants), and *contextual modifications*, which are e.g. changes in delivery strategies, setting, target populations etc. (14, 20).

## **Phases 3 and 4: Preliminary adaptation testing (pilot phase)**

The preliminarily adapted version of Y&A will be pilot tested in Danish VET schools and evaluated in a process evaluation mixed methods study design combining questionnaires, interviews with participants and participant observations.

## **Results**

### **Needs assessment (phase 1)**

The results of the needs assessment showed that VET students often experience a lack of PA offers during the school day, a lack of motivation to participate in the existing activities, and a lack of social activities and social cohesion at school. The most common barriers for implementing 45 minutes of daily PA reported by Danish VET teachers and managers are lack of student motivation to participate, lack of time, knowledge, practical skills among teachers, and lack of indoor and outdoor facilities (21). We also found that VET students are a more diverse group compared to high school students as the student composition in terms of e.g. sex varies greatly between the different educational tracks ranging from 6% females in the “Technology, Construction and Transportation” field to 82% females in the “Care, Health and Pedagogy” field (22). Furthermore, a higher proportion of VET students have a low socioeconomic background and have parents with low educational achievements (23, 24). VET school leaders and teachers expressed that students often carry histories of negative experiences from their previous schooling, and problems related to dyslexia and learning difficulties. VET has a vastly different educational structure than high school characterized by ongoing alternations between short school periods and short apprenticeships. The school periods shift between classroom based and practical teaching in different settings depending on the field such as wood workshops, kitchens, simulated hairdresser’s salons unlike high school which is almost exclusively classroom based.

### **Preliminarily adapted intervention (phase 2)**

Based on the needs assessment, the key modifications can be summarized into three categories; 1) Narrowed objective and focus: The adapted workshop focused on incorporating *active breaks* into the

school day, i.e. short activities that do not require specialized facilities and can be carried out within short periods to accommodate the educational structure and physical environment of VET as well as the implementation of 45 minutes of daily PA. 2) Addition of a set of activity props: We added a set of different activity props in a box that is brought for the workshop and donated as a gift for the participating classes. The box of props is used in an activity during the workshop to promote a more dynamic form of generating ideas for activities emphasizing movement and intuition i.e. acting out ideas rather than writing them down. Writing down ideas was a central part of the original intervention. After the workshop, the box of props is intended to support the implementation of active breaks during the school day as the different props are selected for this purpose. 3) Changed target group: Students at the 1st Basic Program at VET schools, a 20-week basic course for students aged 15–18 who completed lower secondary education within the last year, were chosen as the target group as they are an equivalent age group to the original target group. Moreover, due to the diversity of VET students we decided to narrow down the target group to Basic Program students at certain types of programs or educational tracks. We wanted to test the intervention at programs characterized by hard physical work, monotonous working positions, and sedentary work with regards to e.g. their future professions and work life. The materials for the workshop such as the introductory presentations and workshop activities were customized for each of the different participating programs for example by using examples of the benefits of PA appealing to the related future professions.

As the three-year timespan of the original intervention was not feasible within the scope of a pilot test, we made a limited version which could be carried out in a few months. Therefore, the gradual handover to the school is not included in the preliminarily adapted version.

## Discussion

In this research note we report on the adaptation of the Y&A intervention from a high school setting to a VET setting. The results of the needs assessment guided a preliminary adaptation design to be tested among VET students as a central part of the adaptation process. The intervention was modified in terms of content, e.g. changes in the objective, as well as context, e.g. changes to the target population. A key challenge in adapting Y&A to a VET setting is the educational structure. Students are only at the school for short periods of time, not for three consecutive years as in high school, which might complicate the establishment of student-driven activities, the peer-to-peer element, and the sustainability over time. The ongoing process of adaptation and the evaluation of the pilot test will further explore these challenges and will provide insights and knowledge that can contribute to finding viable solutions. Furthermore, a central task in the process of adaptation is finding a suitable balance between on one hand accommodating the new context and make adjustments to enhance implementation and sustainability, and on the other hand maintaining the fidelity, or integrity, towards the core principles or “active ingredients” of the intervention, and the underlying assumptions of how it works, i.e. the program theory (14). The further process of adaptation will carefully consider this dilemma. At the time of the initiation of the cultural adaptation process there was no systematic review or common guidelines of how to conduct intervention adaptations. The recently published systematic review from 2019 propose an 11-step

approach divided into four phases (exploration, preparation, implementation and sustainment) based on the review of 38 papers (14). The initial steps of the adaptation process described in the present study are in line with the proposed approach although the phases introduced by Movsisyan and colleagues (2019) are more comprehensive. The approach will be useful for the ongoing adaptation of Y&A to VET schools and will guide the further process.

## Limitations

- This research note presents preliminary findings from an ongoing process of cultural adaptation that form the basis for further research
- The needs assessment relies on limited empirical material
- The full version of the original intervention is not included in the preliminarily adapted version due to the scope of the pilot test, which limits the ability to evaluate the sustainability

## Abbreviations

PA: Physical Activity; VET: Vocational Education and Training; Y&A: Young & Active.

## Declarations

### Ethics approval and consent to participate

The Healthy High School study, including the Young & Active intervention, adheres to all Danish ethical standards and has been approved by the Danish Data Protection Agency (J. No. 2015-57-0008). The Regional Scientific Ethical Committee, the Capital Region of Denmark, reviewed the study and concluded that formal ethical approval was not required (J. No. 16018722). Written information was sent to principals and teachers at all invited VET schools explaining the implications of participating in the study. For all data collection methods, participants were informed that participation was voluntary, that their information would be used for research purposes only and treated confidentially. For interviews conducted as part of the need assessment, written consent was collected.

### Consent for publication

Not applicable.

### Availability of data and materials

The data that support the findings of this study are available from University of Southern Denmark (SDU) but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of SDU.

## Competing interests

The authors declare that they have no competing interests.

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## Author's contributions

MPJ participated in the design of the study, the data collection, the adaptation process, and drafted the manuscript. LASB participated in the data collection and assisted in the draft of the manuscript. JAR participated in the design of the study and the data collection. KSD participated in the data collection. AJ participated in the adaptation process. RFK is the principal investigator of the Young & Active intervention and was responsible for leading and coordinating the study, and contributed to the design, data collection, and adaptation process. All authors read, revised and approved the final version of the manuscript.

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