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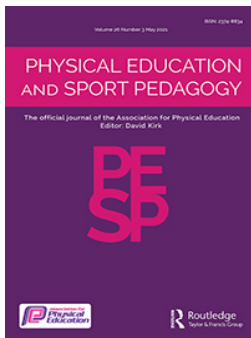
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Assessed movement competence through the lens of Bourdieu – a longitudinal study of a developed taste for sport, PE and physical activity

Anna Tidén, Gunilla Brun Sundblad and Suzanne Lundvall 

Department of Movement, Culture and Society, the Swedish School of Sport and Health Sciences, GIH, Stockholm, Sweden; Department of Food and Nutrition and Sport Science, University of Gothenburg, Gothenburg, Sweden

ABSTRACT

Background: The interest for young people's movement ability has increased. Literature shows that many factors, apart from movement ability, influence the development of and sustained interest in or taste for physical activity and the learning thereof.

Purpose: This longitudinal study illustrates, through the lens of Bourdieu, whether and how assessed movement ability at the age of 15, together with cultural capital and sports habitus, is reflected in exercise habits and a taste for participation in sport and physical activity as a young adult.

Data collection and analysis: A multidisciplinary project called School-Sport-Health (Skola-idrott-hälsa) was established in 2001 in Sweden to investigate the physical and health status of children and youth, as well as attitudes to and participating in school physical education. Schools were randomly selected by the agency Statistics Sweden. In total, 1,975 pupils aged 9, 12 and 15 answered a life style questionnaire, and took part in at least one sub study of the baseline study in 2001. Movement ability was examined using the NyTid test. 560 pupils (283 girls, 277 boys) aged 15 (born in 1985, ± 1) completed the test. In the follow-up study, lifestyle questionnaires, were answered nine years apart by the pupils who had participated in the NyTid test at the age of 15. The response rate was 61 per cent (341 young adults: 186 females, 155 males). Group and gender differences between those who had a high level of assessed movement ability (HLG) and those with a low level (LLG) were analysed. Data were analysed through Bourdieu's analytical concepts habitus and capital.

Findings: The assumption that an acquired high level of movement ability plays a central role in being physically active later in life is both confirmed and challenged by the results. The HLG view themselves as more physically active and with a higher intensity (71 per cent) than the LLG (44 per cent). A low level of assessed movement ability at the age of 15 did not prevent young adults from acquiring a taste for sport and physical activity later in life. Habitus is a generative principle and can, according to the logic of practice, give action meaning, which may go against earlier habitus and trigger actions. Earlier described gender differences appear to be less evident in young adults.

Conclusions: Further research is needed to understand how pupils' movement narratives are constructed to support young people's taste for movement and development of movement competence.

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CONTACT Suzanne Lundvall  suzanne.lundvall@gih.se  Department of Movement, Culture and Society, the Swedish School of Sport and Health Sciences, GIH, Stockholm, Sweden; (From the 1st of September 2020) Department of Food and Nutrition and Sport Science, University of Gothenburg, Gothenburg, Sweden

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Introduction

In many countries, the school physical education (PE) curriculum focuses on the lifelong learning of physically active lifestyles. A common assumption is that being active during childhood and having an all-round movement competence and fundamental movement skills (FMS) can lead to a life-long and maintained interest in exercise (see, for example, Barnett et al. 2009, 2016; Robinson et al. 2015). Young people acquire movement experiences not only from PE. Besides school, young people gain experiences by doing sport and physical activity (PA) spontaneously, in everyday life together with parents and/or at a sports club. These experiences help, in different ways, to shape and reshape young people's movement competence and the development of different tastes for sport and PA. The understanding of participation in sport, PE and PA is a complex issue. According to Bourdieu, the interest in bodily movement is formed under specific conditions (Bourdieu 1984, 1990; Brown 2005; Engström 2008).

In spring 2018, the World Health Organization (WHO) commissioned a global action plan on physical activity. It advocated the multidimensional concept of physical literacy (PL) to be used in the education sector in order to embrace not only physical capacities and skills execution but also learning processes that instil embodiment encompassing confidence, motivation and enjoyment to execute movement (WHO 2018). This action plan represents an answer to aspects of lifelong health considerations in relation to physical inactivity and obesity among children and youth. However, as a legitimate solution to supporting health and physically active lifestyles, PL is a contested concept. In parallel, other concepts and perspectives of movement education exist (see, for example, Bailey 2020; Quennerstedt, McCuaig, and Mårdh 2020; Edwards et al. 2018; Roetert et al. 2017; Barker, Bergentoft, and Nyberg 2017; Evans 2004). The interest in movement education and competence as part of an embodied disposition touches upon what role school PE could or should have, and how children's and adolescents' participation in, and learning of, movements can be supported (Nyberg, Barker, and Larsson 2020; Dudley et al. 2017). Already at the beginning of the 2000s, several researchers were calling for more research on movement abilities and how 'to become a learner' in PE (Evans and Penny 2008). To 'become a learner' in PE is also related to existing assessment systems (Hay and Penney 2013). What can be noted is that gender is neither part of the discussion about the PL-concept nor the above-mentioned studies of movement learning and education. According to Ennis (2015), there is also a lack of research that can inform and improve practice.

In this paper, we take our point of departure in participation in sport, PE and PA constituting a cultural and social practice. These practices require a development of specific dispositions if an individual is to acquire a taste for learning and an interest in lifelong participation in PA (see, for example, Bourdieu 1984; Brown 2005; Engström 2008; Vollmer, Lohmann, and Giess-Stüber 2019). What young people develop a taste for is also part of an orientation towards or from certain values and behaviours.

At present there are few empirical studies of movement competence in a more social and cultural context (Bailey 2020; Edwards et al. 2018). Longitudinal studies examining whether movement competence at a young age is reflected in exercise habits later in life are even scarcer (Lloyd et al. 2014; Engström 2008; Scheerder et al. 2006). Hence, it is of interest to illustrate how assessed movement ability at the age of 15, together with cultural capital and sports habitus, is reflected in exercise habits and a taste for participating in sport and PA as a young adult. In this longitudinal study, we follow, with nine years apart, two groups of 15-year-old adolescents, one with an assessed low level of movement ability (low-level group [LLG]) and the other with an assessed high level of movement ability (high-level group [HLG]). The more precise research questions are as follows:

- • How do the two groups differ in terms of described preferred recreational activities, participation in PE and PA, past PE grade and having physically active friends?
- • What gender differences between the two groups of assessed movement ability can be identified, and how can these differences be understood?

Theoretical frame of reference

Bourdieu's concepts of habitus and capital have inspired our analysis of whether movement competence at a young age is reflected in exercise habits and a taste for sport and PA later in life (Bourdieu 1984, 1990; Bourdieu and Wacquant 1992). Habitus can be explained as social structures embodied as corporal dispositions, or corporeal schemes of values and perceptions (Bourdieu 1984). Habitus comprises the ideals, beliefs, competencies and tastes that people have developed and embodied through years of interaction with others (Bourdieu 1984). Habitus can therefore be understood as a system of habits and dispositions imprinted on the body and difficult, but still possible, to change (Bourdieu 2000; Brown 2005). It determines how individuals act, think and perceive their surroundings (Bourdieu and Wacquant 1992; Engström 2008). According to Bourdieu, people's ways of orientation to sport and PA are dependent on the assets they have and can draw upon. Capital, for example physical capital, is thus a relational concept and can be viewed as an asset. Habitus can be converted into different forms of capital, values and assets and is in this sense generative beyond what is learned. What is regarded as capital depends on what might be of value in a certain field or social room (Bourdieu 1984). Movement ability as part of a physical capital, conveys and legitimates values in a specific PE educational context or social room, but is also linked to sport and PA. A person's perception of his or her own ability is, following Engström (2008), an important part of an individual's habitus. Engström concludes in his longitudinal study: A person's perception of his or her own abilities, of whether (s)he is good at sport or feels mediocre or totally hopeless in this context, is an important part of an individual's habitus (Engström 2008, 324).

Applied to sport as a social practice, a certain habitus is required in order to adapt to, be comfortable with, and want to continue to take part in, for example, organised sports. The composition of embodied cultural capital encompasses an individual's view of his or her body and the ability to distinguish between and choose the value of various physical activities determining the engagement/involvement. In the analysis, the focus is on how assessed movement competence at the age of 15, together with cultural capital and sports habitus, is reflected in exercise habits and a taste for participating in sport and PA as a young adult. We used as indicators of cultural capital, including physical capital, described preferred recreational activities, past PE grades and having physically active friends. For the analysis of sports habitus, besides the assessed movement ability, we use self-reported data on frequency and intensity levels of PA (illustrated by the question: I am a person who exercises ...), as well as participation levels in PE at upper secondary school. The conclusion section of this paper will highlight the relevance of the empirical findings and how different perspectives on movement competence and education fit with current ideas of teaching and learning practices within PE and lifelong engagement in executing movement.

Movement ability and its assessment

Before coming to the methods and findings of this paper, we need to clarify our use of different concepts, such as FMS, movement ability and movement competence. Movement ability is generally described as an ability to master FMS, often called locomotor, object control and stability/balance skills (Gabbard 2012; Gallahue and Donnelly 2003).

A number of previous empirical studies have supported the assumption of a relationship between FMS and PA levels (Barnett et al. 2009; Hands et al. 2009; Kalaja, Jaakkola, and Liukkonen 2010; Lloyd et al. 2014; Okely, Booth, and Patterson 2001; Wrotniak et al. 2006). In addition, in a review of studies of this relationship, Holfelder and Schott (2014) found a strong association in cross-sectional data with children but a lower predictive value for adults. Other studies have shown the importance of movement ability in correlation to becoming physically fit as a child (Haga 2008), an adolescent (Hands et al. 2009) and a young adult (Stodden, Langendorfer, and Robertson 2009).

As movement ability is seen as important, several test and assessment tools have been developed to study and follow children's development of practical knowledge of movements and their ability to use acquired movement patterns in known and unknown situations (Stodden et al. 2008). Scholars have approached and highlighted the problematic processes of movement assessment and the measurement of movement abilities in order to understand how the development of motoric capacity occurs. For example, Okely and Wright (1997) have illuminated the gender bias in assessment tools and tests used in Australia, where most of the movement skills derive from a sporting context in which boys usually participate more frequently than girls (see also Barnett et al. 2010).

Barker, Nyberg, and Larsson (2019) relate capacity to motoric capacity, to move in different ways constituting practical movement knowledge. In line with this way of reasoning; movement education becomes pedagogical attempts to improve pupils' movement capability. As assessment itself is constructed in accordance with what is considered legitimate knowledge in the educational field of PE and physical culture, these tests and assessment tools also risk serving as message systems that benefit some people and disadvantage and marginalise others (Hay and Penney 2013).

Few assessment tools have been designed to examine more complex and developed movement skills that can relate to movement competence in or practical knowledge of using the body to execute or perform complex movement patterns. One example of a process-oriented assessment tool, known as the NyTid test, was developed in Sweden in the early 2000s and designed for compulsory school pupils aged 12–16 (Tidén, Lundqvist, and Nyberg 2015; Nyberg and Tidén 2002). A reason for developing the NyTid test was the lack of reference data on movement competence among Swedish schoolchildren.

Accordingly, the value of established gross motor skills and FMS as prerequisites for a physically active life has been debated among researchers from different fields (see, for example, Barnett et al. 2016; Robinson et al. 2015; Larsson and Quennerstedt 2012). Stodden, Langendorfer, and Robertson (2009) discuss the importance of mastering movement skills as a mediator of both health-related fitness and PA in adolescence and adulthood. They encourage further investigation into this relationship in younger and older populations. Other scholars such as Larsson and Quennerstedt (2012) highlight the need for alternative ways to outline and engage with motor development, the motor ability testing of children and the results deriving from such practices in a school context.

As mentioned, longitudinal studies are limited in number, especially regarding research on typically developed children with no identified movement difficulties or disabilities. The findings of Engström's (2008) longitudinal study have shown that cultural capital and sports habitus, in terms of high PE grades, a breadth of sports experience and active friends, are crucial indicators of a lifelong physically active lifestyle. One of few longitudinal studies of assessed FMS and self-reported PA is Lloyd et al.'s (2014) study. It reports a potential long-term association of motor skills proficiency at the age of six and self-reported PA twenty years later. The results indicate that motor skills proficiency at the age of six is positively associated with leisure-time PA at the age of twenty-six (Lloyd et al. 2014). A similar study but with a different age span (Year 7 pupils) was conducted by Jaakkola et al. (2016). They examined pupils in 2007 and followed up the data with a self-reported PA questionnaire in 2013. The findings support the assumptions of a predictive role of FMS at a young age as an indicator of PA in adolescence (Jaakkola et al. 2016). To our knowledge, no studies have illustrated how *assessed movement ability* at the age of 15, together with cultural capital and sports habitus, is reflected in exercise habits and a taste for participating in sport and PA as young adults.

Methods

Sample and participants

A multidisciplinary study called the Skola-idrott-hälsa (School-Sport-Health, SSH) project was established in 2001 to investigate the PA levels and the physical and health status of children

and youth (Engström 2004). The baseline study was carried out in Stockholm, Gothenburg and Malmö with participants from schools throughout Sweden. The schools were randomly selected by the government agency Statistics Sweden. In total, 1,975 pupils aged 9, 12 and 15 answered a lifestyle questionnaire and took part in at least one substudy of the baseline study in 2001. A total of 560 pupils (283 girls, 277 boys) aged 15 (born in 1985, ± 1) completed the substudy examining movement ability using the NyTid test, further described below under Movement assessment tool.

In the follow-up study, nine years later, all participants in the 2001 baseline study were contacted and asked to answer once again the lifestyle questionnaire (missing addresses were checked at the Swedish Tax Agency managing civil registration of private individuals). This time the participants could choose between a paper questionnaire and an online version. A total of 341 (61 per cent) young adults (186 females, 155 males) who had participated in the NyTid test at the age of 15 answered the questionnaire both in 2001 and 2010. These data form the empirical material for this study.

Movement assessment tool (the NyTid test)

The NyTid test was used to assess both basic and more complex movement skills representing a versatile movement repertoire for compulsory school pupils. A detailed description of the 12 tasks in the revised NyTid test and the qualitative assessment criteria for the different movement skills included in the test have been described elsewhere (Tidén 2016; Tidén, Lundqvist, and Nyberg 2015). The NyTid test is validated into four factors based on the characteristics of the movement tasks: (1) strength, (2) stability and axial movement skills, (3) object control skills, and (4) dynamic balance and coordination skills (Tidén, Lundqvist, and Nyberg 2015).

Based on the participants' summarised scores, three groups of movement ability were defined. The score was based on the assessment of whether the movement was performed with initial skill (1 point), emerging skill (2 points), developed skill (3 points) or proficient/established skill (4 points). The maximum score was 48 points and the minimum 12 points. The total score was then used to dichotomise into an HLG and an LLG. The distribution of results and the cut-off points for the HLG and the LLG are shown in Figure 1. The reason for dichotomising these two groups is to understand possible future tastes for sport and PA having either a low or high assessed movement ability at a young age.

In this study, our focus is on two of the three groups of young adults who in 2001 were assessed with a score indicating a developed high or low level of movement ability. The results of the 160 participants were analysed and divided into the LLG ($n = 80$) and the HLG ($n = 80$) (the 'in-between' group [$n = 181$] was omitted from the analysis). See Figure 1 above for the distribution of scores and Table 1 below for the gender differences.

Questionnaire

The 2010 questionnaire was, for the questions in focus of this study, identical to the 2001 baseline study questionnaire. The questionnaire demonstrated its validity in terms of construction and high reliability in a test-retest procedure (Spearman rank correlation 0.80 or higher; Thedin Jakobsson et al. 2012). Central to the analysis were the correlation of participating in PE and PA (what person

Table 1. Sample distribution.

| | LLG ($n = 80$) | HLG ($n = 80$) | Total ($n = 160$) |
|---------------|------------------|------------------|---------------------|
| Girls/females | 55 | 34 | 89 |
| Boys/males | 25 | 46 | 71 |

($p \leq 0.001$).

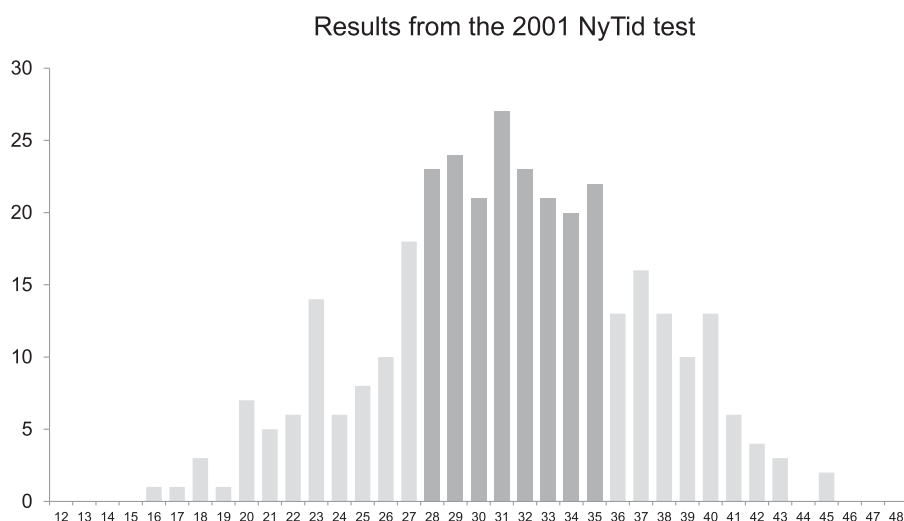


Figure 1. Distribution of scores in the 2001 NyTid test divided into the LLG, score 16–27 points, and the HLG, score 36–45 points. No participant received 12–15 points or 46–48 points.

do you resemble the most?), the frequency and level of PA, leisure-time habits/recreational activities, having friends engaged in sport and PA and attitudes towards physical activities, at the age of fifteen and nine years later. The self-reflection question: ‘What person do you one resemble the most’, was seen as an indicator of participating in PA, being physically active with an embodied sports habitus (Tidén, Lundqvist, and Nyberg 2015; Engström 2004). Five answering alternatives were given:

I am a person who

- (A) Exercises very little.
- (B) Exercises to some extent but never gets sweaty or out of breath.
- (C) Exercises to some extent and once in a while gets sweaty and out of breath.
- (D) Exercises so that I get sweaty and out of breath several times a week.
- (E) Exercises so that I get sweaty and out of breath every day or almost every day.

For the analyses, the alternatives A–E were dichotomised into two groups: in the first group (A–C), a person was regarded as not being very physically active, and in the second group (D–E), they were viewed as physically active. These same questions were answered in 2001 and 2010.

In the follow-up study, the participants were asked to list three recreational activities (in an open-ended question) that they favoured and preferred. In the analysis, the answers were coded as: (0) non-PA, such as watching TV, listening to music, etc., (1) a low – to moderate-intensity PA (one activity was listed), and (2) a high-intensity PA, such as cardiovascular and strength training and vigorous sport activities (more than one activity was listed). The intensity level of PA was then compared with the respondents’ answers to the question and the five levels of which person do you resemble the most.

Statistical methods

Group differences were analysed using descriptive statistics, the Spearman rank correlation and cross-tabulation (the chi-square test) using IBM SPSS Statistics 22 (SPSS Inc., Chicago, IL). A

correlation coefficient between 0.3 and 0.49 was considered moderate (Cohen, Manion, and Morrison 2007). The level of statistical significance was set at $p < 0.05$.

Ethics

In both studies and at all stages of the analysis, the identities of the participants were coded to ensure anonymity. Further, the confidentiality of results and answers was emphasised when informing the participants of the studies. The ethical committee at Karolinska Institute, Stockholm (ref. no. 00-416), approved both the baseline study and the follow-up questionnaire study. Participation was voluntary, and the participants could withdraw at any time.

Findings

Before comparing the results of the HLG and the LLG, the gender differences in the movement assessment test (factors) should be highlighted as a background. At the age of 15, the boys received higher overall scores in the movement ability test. In addition, there were more girls among those with lower scores in strength ($p < 0.001$, factor 1) and object control skills ($p < 0.00$, factor 3). The balance and coordination skills, factor 4 (ns), showed no significant gender difference. The girls scored either high or low for the tasks measuring stability and axial movement skills ($p = 0.005$, factor 2). The boys' results for factor 2 neither scored high nor low, instead were spread in the middle.

In the follow-up study, when the same young adults answered questions identical to those answered nine years earlier, certain differences in attitudes and preferences could be discerned between the two groups, the one with an assessed high level of movement ability (HLG) and the one with an assessed low level of movement ability (LLG). In the assessed HLG, 71 per cent of the young adults regarded themselves as physically active, compared to 44 per cent in the LLG ($p \leq 0.001$). Almost two-thirds (65 per cent) of the female participants and just over three-quarters (76 per cent) of the males in the HLG viewed themselves as physically active and at high PA intensity levels as young adults, compared to 44 per cent (both females and males) in the LLG (ns). A gender difference was also found for the indicator of having physically active friends. This was more common in the HLG (61 per cent) than in the LLG (39 per cent) ($p = 0.008$). However, this was only significant for the male participants ($p = 0.007$) when the data were split for gender.

The correlation between the participants' answers to the question 'What person do you resemble the most?' in 2001 and 2010 was moderate (.337, Spearman rank correlation). However, when comparing the HLG and LLG divisions, the correlation was low for the HLG (.275) and moderate for the LLG (.369).

Approximately 79 per cent of the HLG and the LLG favoured physical recreational activities in their leisure time (the question had five non-responders). One-fifth favoured *non-physical* recreational activities in their leisure time. Close to 71 per cent of the HLG and 41 per cent of the LLG mentioned *sport and fitness training as main recreational activities*. Around 28 per cent of the LLG and 14 per cent of the HLG did not favour physical recreational activities at all [Table 2](#).

The participants' answers to the open-ended question about preferred recreational activities showed that 72 per cent of the LLG listed *one or more physical* activities. The HLG and the LLG, seen as two categories, described different kinds of recreational activities. These activities can be interpreted as representing different levels of physical intensity. The LLG's physical activities were distributed as shown in [Table 3](#).

[Table 3](#) shows that being in the LLG did not prevent the male and female participants from describing moderate – to vigorous-intensity recreational activities.

Almost all the respondents (99 per cent) in the HLG regarded themselves as participatory and active pupils in PE at upper secondary school, compared to 73 per cent of the LLG ($p \leq 0.001$). In addition, 61 per cent of the participants in the HLG received higher grades (pass with distinction

Table 2. Recreational activities that responders enjoyed and preferred doing (open-ended questions).

| Recreational activities that responders enjoyed and preferred doing | Movement ability level | | Total (<i>n</i> = 155) |
|--|------------------------|----------------------|-------------------------|
| | LLG (<i>n</i> = 76) | HLG (<i>n</i> = 79) | |
| (0) No recreational physical activities | 21 27.6% | 11 13.9% | 32 20.6% |
| (1) Recreational physical activities – low to moderate intensity, one listed physical activity | 24 31.6% | 12 15.2% | 36 23.2% |
| (2) Recreational physical activities – high intensity, more than one listed physical activity | 31 40.8% | 56 70.9% | 87 56.1% |
| Total | 76/100% | 79/100% | 155/100% |

$p = 0.001$.

or pass with special distinction), compared to 14 per cent in the LLG ($p \leq 0.001$). Overall, in both the HLG and the LLG, girls had lower PE grades.

Discussion and conclusions

The specific aim of this longitudinal study is to, through the lens of Bourdieu, illustrate how assessed movement ability at the age of 15, together with cultural capital and sports habitus, is reflected in the exercise habits and a taste for participating in sport and PA as a young adult. Several studies confirm an association between FMS/movement ability and PA later in life (e.g. Barnett et al. 2009, 2016). Furthermore, evidence indicates that motor competence is positively associated with perceived competence and multiple aspects of health (Robinson et al. 2015). However, unlike previous studies, this study indicates that the answer is more multifaceted than that.

Let us start with the findings of how the two groups differed in terms of described preferred recreational activities, participation in PE and PA, past PE grade and having physically active friends. More than 70 per cent of the young adults in the LLG who finished their compulsory schooling in 2001 had taken up physical recreational activities that they enjoyed doing in their leisure time. From the findings, it is apparent that an assessed low level of movement ability in adolescence does not play a decisive role in becoming physically active as a young adult. A conclusion is thus that a low level of movement ability at the age of 15 does not prevent the development of a taste for sport and PA as a young adult. Habitus is a generative principle and can, according to the logic of practice,

Table 3. Distribution of the LLG's preferred recreational physical activities divided into different levels of intensity and a number of listed activities (*n* = 55).

| (1) Recreational physical activities (<i>n</i> = 24) <i>Low to moderate intensity level and one activity listed in the open question</i> | (2) Recreational physical activities (<i>n</i> = 31) <i>Moderate to vigorous intensity level and more than one activity listed in the open question</i> |
|--|---|
| Biking/cycling 2 | Aerobics 3 |
| Chopping wood 1 | Ball games 8 |
| Horse riding 1 | Cycling 1 |
| Outdoor activities (nature) 6 | Dance 3 ex. Lindyhop/Boogie-woogie |
| Running/jogging 2 | Gym training 5 |
| Sailing 1 | Martial arts 1 |
| Swedish gymnastics 2 | Orienteering 1 |
| Swimming/bathing 1 | Outdoor activities (nature) 1 |
| Walking 8 | Running 2 |
| Water gymnastics 1 | Sports 1 |
| WII-sports 1 | Swimming 1 |
| | Training 19 |
| | Walking 2 |
| | Yoga 1 |

give action meaning, which may go against earlier habitus and trigger actions. The period between the ages of 15 and 24 is dynamic. Teenagers seen as social agents have to take decisions about all kinds of actions, such as, for example, moving away from home, choosing a study programme or getting a job. Dealing with young adulthood includes moving between different fields and values (Bourdieu 2000; Bourdieu and Wacquant 1992). All these aspects have to be taken into consideration when looking at the correlation of answers between the baseline and the follow-up study and the question 'What person do you resemble the most?' The correlation is moderate for the LLG and low for the HLG. Even so, almost half of the LLG had changed their perceptions of how they identified themselves as 15-year-olds and young adults in terms of being physically active.

However, when answering the question 'What person do you resemble the most?' only 44 per cent of the participants in the LLG see themselves as *very* physically active, compared to 71 per cent in the HLG. One identified difference is clearly that participants assessed as having a high movement ability (HLG) view themselves as *more* physically active and with a higher intensity (71 per cent) than the LLG. This is the case for both males and females. The majority of the participants in the HLG can be said to have a strong sport habitus and hence a high physical capital. When comparing females and males in the HLG group, 65 per cent of the females and 76 per cent of the males described themselves as physically active. So what gender differences between the two groups of assessed movement ability can be identified, and how can these differences be understood? One finding is that the earlier described differences between males and females appear to be less evident in young adults. This is an interesting finding, and future studies are needed to understand this decrease in gender difference.

In the LLG, 28 per cent of the participants did not mention physical activities at all as preferred recreational activities, compared to 14 per cent in the HLG. To be noted though, is that there are almost twice as many females in the LLG.

Participants in both the HLG and the LLG (79 per cent) favour physical recreational activities in their leisure time. It is worth emphasising that also participants assessed as being in the LLG, nine years later, describe a taste for physical recreational activities, for example cycling, dancing, fitness/strength training, hiking and outdoor activities, horse riding, martial arts, orienteering, swimming, ball games, water aerobics, running, jogging. The described activities represent a range of traditional sports and recreational physical activities requiring a moderate to vigorous intensity. The preferred recreational activities also need to be seen in relation to the surrounding society and the current valuing of certain lifestyle habits and physical activities. They can all be associated with the idea of health and future well-being and as parts of a cultural capital. What is perceived as natural and obvious can accordingly be an incentive for change and trigger actions, influencing a person's former habitus and taste (Bourdieu 1990, 2000; Engström 2008).

Being part of a culture in which PA is both valued and common can play a vital role in becoming physically active, especially at a high-intensity (self-reported) level. It has been shown that having physically active friends is an important factor in developing a 'taste for sport' and becoming physically active in adulthood (Engström 2008). Having physically active friends is more common in the HLG but only significant for males ($p = 0.007$). One reflection is that being part of a high-intensity training and fitness culture fits well with traditional masculinity. This disposition of sports habitus renders a certain kind of cultural capital. Furthermore, a larger group of men, compared to females, seems to have acquired this sort of capital, already at the age of 15 (Tidén, Lundqvist, and Nyberg 2015). Still more boys than girls are members of sports clubs, although this pattern has started to change (Blomdahl et al. 2014; Coakley 2003; Dartsch, Norberg, and Pihlblad 2019).

As described in the result section, the male participants in the NyTid test have higher scores for two of the four factors: factor 1, strength and coordination skills, and factor 3, object control skills. Similar results have also been reported in previous studies (Hands et al. 2009; Robinson 2010; Barnett et al. 2010). The participating females' scores are high or low for factor 2, stability and axial movement skills, and there are no significant gender differences for factor 4, balance and coordination skills. Again, these gender differences have been observed in previous research. O'Brien,

Belton, and Issartel (2016) address girls' weaker results in object control skills and go as far as to recommend PE intervention programmes in order to facilitate girls' and young females' development of object control skills to support movement ability. These gender differences at young ages also need to be related to how movement education is made visible, provided and valued in PE-practice.

However, as indicated elsewhere (Tidén, Redelius, and Lundvall 2017), movement ability is not a neutral concept. Assessments are acknowledged as social-cultural processes that actively shape, and are shaped by, social and educational systems. Assessments also serve as message systems that benefit some groups but disadvantage and marginalise others. Girls' lower results and, using Bourdieu's term, lack of physical capital at a young age in some of the movement skills need to be analysed further and related to the kinds of specific physical capital included and valued in the existing movement tests and assessment tools (see also Barnett et al. 2010; Okely, Booth, and Patterson 2001).

Not surprisingly, participants in the HLG viewed themselves as very active during PE – lessons. They also received higher PE-grades (self-reported). Here there is a distinct difference between the HLG and the LLG (61 per cent and 14 per cent respectively). In the light of Bourdieu's theoretical framework, a high grade illustrates an acquired cultural capital, including a physical capital (Bourdieu 1984; Engström 2008). Pupils with high grades receive confirmation that their cultural and physical capital are of value and legitimate in the context of PE, sport, and PA.

Final thoughts

Before presenting our final thoughts we would like to address some of the strengths and limitations of the methods used and the design of the longitudinal study. A longitudinal study often has a large dropout rate. In this study, 61 per cent of the responders answered the questionnaire, which is regarded as a reasonable response rate and a strength of the study. No certain groups of pupils were identified among the drop outs. Another aspect is what kind of 'reality' the responses from the survey reflect. As the survey includes PA and health-related questions, people's interest in the latter may have contributed to the completion and return of the questionnaires. Furthermore, assessing or measuring movement ability can be done in different ways. Another strength in this study is the use of a process-oriented assessment tool, which encompass basic and complex movement skills, and was especially designed and validated for the 12–15 age group (Tidén, Lundqvist, and Nyberg 2015). Even though validated, this instrument is constructed by people within a certain cultural context involving movement tasks that may emphasise and value specific skills. Possible confounding variables such as socioeconomic class, educational level and area of residence, were beyond the scope of this study. This can be regarded as a limitation and a call for further research.

Keeping in mind these strengths and limitations, this study illustrates that movement ability at a young age reflect exercise habits and a taste for PA later in life. The assumption that an acquired high level of movement ability at the age of 15 plays a central role in developing 'a taste for sport and PA' is confirmed but also challenged by the results of this study. Even though some of the pupils at the age of 15 had a low physical and cultural capital as measured in this study, this did not prevent several of them from acquiring a 'taste for sport and PA' later in life.

The findings of this longitudinal study provide perhaps more questions than answers as to what movement education is of relevance in PE. Moreover, there is a need for further research, and perhaps interdisciplinary research, in order to understand, from different perspectives, more about what can support children's and young people's taste for movement, exercise habits and development of movement competence over the years. Barker, Bergentoft, and Nyberg (2017) have pointed to the need to pay attention to different pedagogical perspectives on movement education in PE but less to the consequences of the chosen perspective. As well-described by Ennis (2015), a crucial point for PE is how pupils can become engaged in this learning and how this knowledge can be of relevance, transferred and transmitted to new and other situations.

Different chosen perspectives and pedagogies will have practical consequences seeing that movement education touches upon physical, emotional, affective well-being, guided by a person's taste for different movement cultures. More empirical research is needed and, according to our study, also collaboration between movement scientists and pedagogues in order to actually understand how pupils' movement narratives are constructed and how assessments work as message systems of value (Hay and Penney 2013). This is of importance for PE educators in order to support and challenge these narratives over the years. We look forward to future studies of movement education and the underlying mechanisms for developing 'a taste for sport and PA', particularly in the light of the many efforts made to increase people's PA levels.

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ORCID

Suzanne Lundvall  <http://orcid.org/0000-0003-1298-8186>

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