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# The association between education outside the classroom and students' school motivation: Results from a one-school-year quasi-experiment

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## ABSTRACT

The aim of this quasi-experimental intervention study was to investigate the association between primary school students' (9–13 years) school motivation and regular participation in education outside the classroom (EOtC). School motivation of 311 Danish public students from 24 intervention classes and 88 students from seven parallel comparison classes was measured at the start and end of the 2014–2015 school year using the Academic Self-Regulation Questionnaire (SRQ-A). Exposure to EOtC was monitored by intervention and comparison teachers. Multilevel analyses showed that regular exposure to EOtC was associated with improvement in intrinsic motivation and was moderated by prior intrinsic motivation in favor of students with higher prior intrinsic motivation. Results were independent of gender and socio-economic-status.

## 1. Introduction

Autonomous motivation has been found to be a strong predictor of long-term involvement in learning activities, and is associated with higher school achievement, better understanding of taught concepts, improved school satisfaction, and a lower dropout rate (Deci & Ryan, 2002; Gottfried, 1985; Ryan, 2009; Vorhaus & Gutman, 2012). In comparison, controlled forms of motivation have been associated with students' experience of distraction, negative feelings, and lower grades (Guay et al., 2010). Unfortunately, students' reporting of enjoyable and stimulating school days declines with age and their satisfaction with school decreases, particularly between ages 11 and 15 (Gutman, Brown, Akerman, & Obolenskaya, 2010; Rasmussen, Pedersen, & Due, 2015). It is therefore crucial for teachers and school managers to develop and establish a learning environment that nurtures autonomous motivation and prevents controlled types of motivation (Gottfried, 1985; Guay et al., 2010; Liu, Wang, Tan, Koh, & Ee, 2009; Ratelle, Guay, Vallerand, Larose, & Sénécal, 2007; Ryan, Deci, Grolnick, & La Guardia, 2015).

### 1.1. Education outside the classroom

Education outside the classroom (EOtC) is a teaching method in which teachers in primary and secondary schools relocate some of their curriculum-based teaching activities from the classroom to places outside the school's buildings (Becker, Lauterbach, Spengler, Dettweiler, & Mess, 2017; Bentsen, Mygind, & Randrup, 2009; Waite, Bølling & Bentsen, 2015). It takes place in locations close by

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such as parks, or in remote places that require transportation, such as a forest, museum or factory (Bentsen & Jensen, 2012); however, it is predominantly conducted in nature and green places (Bentsen, Schipperijn, & Jensen, 2013). EOTC is practiced in most subjects, and is often interdisciplinary. The learning activities in EOTC are often led by students, who use their bodies and senses in collaborative work in “real-world” contexts with the purpose of obtaining concrete and personal experiences (Bentsen et al., 2009; Waite, 2011).

### 1.2. Research on the influence of EOTC on school motivation

Dettweiler et al. (2015) investigated the motivational behavior of 84 former primary school students participating in a one-week curriculum-based EOTC course. They concluded that students with lower levels of self-regulation motivation showed significantly higher self-determined motivational behavior after participating in the one-week intervention. A follow-up study from the research group confirmed those findings and explained the increase of self-regulated behavior with increase in students-teacher relations, competence support and autonomy support (Dettweiler, Lauterbach, Becker, & Simon, 2017). Fägerstam and Samuelsson (2014) conducted a quasi-experimental study investigating ten weeks of teaching in a primary school (students aged 13) where 25% of the math lessons were conducted outdoors. For students who were only exposed to traditional lessons they found a decrease in the students’ intrinsic motivation, while this decrease was not found for the group exposed to EOTC. Sproule et al. (2013) investigated motivation and the extent to which key motivation constructs predicted the skill development of 224 early primary school students participating in a 12-day outdoor adventure project work program. The results indicated a positive effect on autonomous motivation. In sum, EOTC seems to have the potential to promote school motivation; however, there are few studies supporting these claims. Furthermore, the reported intervention length is quite short and most studies are qualitative case studies (Becker et al., 2017).

Studies investigating the association between EOTC and types of school motivation are limited, having investigated sporadic programs (Dettweiler et al., 2015; Sproule et al., 2013), having a questionable link to the core school curriculum (Liu et al., 2009), or having a short-term implementation with only a small number of participants (Fägerstam & Samuelsson, 2014).

### 1.3. Satisfying basic psychological needs through EOTC

This study uses Self-Determination Theory (SDT) (Ryan & Deci, 2000) as a framework to investigate students’ motivation for school. SDT distinguishes between controlled extrinsic and autonomous intrinsic types of motivation. Being extrinsically motivated towards an activity means being driven by external rewards associated with and gained through the activity, but is external to the activity itself. SDT differentiates between four types of controlled (extrinsic) motivation: Behavior motivated by avoiding punishment or obtaining a reward is labeled 1) *External regulation*, which is the most controlled form of motivation; 2) *Introjected regulation* is also extrinsic, but is less controlled, and is characterized as behavior regulated by ego inflation through attaining success relative to others’ expectations; 3) *Identified regulation* is when an individual recognizes and identifies with the value of the behavior; 4) *Integrated regulation* is the most internalized form of extrinsic motivation, and is found when the underlying value of an individual’s behavior is not only recognized but is also in coherence with other parts of the individual’s deeper value system and identity. Finally, the only type of regulation categorized within *intrinsic motivation* is *intrinsic regulation*, which is categorized as behavior driven by reasons innate in the activity itself.

SDT proposes the existence of at least three basic psychological needs: the feeling of competence, the feeling of autonomy, and the feeling of relatedness to others. An activity’s capacity for fulfilling these three basic needs is fundamental to the development of intrinsic motivation towards an activity (Deci & Ryan, 1985; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000).

Student-led approaches in teaching, focusing on meaningful content for the students and inviting them to make their own choices in the learning activities, are prosperous ways of satisfying their basic psychological needs (Deci & Ryan, 2016; Ryan & Brown, 2005; Su & Reeve, 2011). It is likely that EOTC provides a need-supportive learning environment and thus promotes intrinsic motivation for the EOTC activities (Beames, Higgins, & Nicol, 2012; Becker et al., 2017). In EOTC, the feeling of autonomy may be fostered through student-led approaches, games and play; the feeling of competence may be promoted by the involvement of non-theoretical skills, through hands-on and inductive learning approaches and experimentation; and the feeling of relatedness to peers may be supported by collaborative group work. Teachers also experience that EOTC can have a positive influence on students’ overall school motivation (Fägerstam, 2014). This potential supplementary function of EOTC is in accordance with the hierarchical nature of motivation, which proposes that motivation for a subject-specific teaching activity can lead to an increase in general school motivation (Vallerand, 2000) and thereby potentially to better academic performance for students (Fortier, Vallerand, & Guay, 1995).

### 1.4. Purpose of the current study

It is argued among teachers that one advantage of EOTC is the promotion of academic inclusion, for instance of students of low socio-economic status (SES) who are at potential risk of exclusion in the modern school system (OECD, 2009; PISA, 2012). Teachers have experienced that the incorporation of practical and body-based approaches to learning, which is operative in EOTC (Szczeplanski & Dahlgren, 2011), may attenuate the motivational disadvantage of sedentary learning activities (Fägerstam, 2014; Norhdahl & Jóhannesson, 2014), particularly among boys (Rosenfeld, 2017). To our knowledge, no study has investigated the influence of SES on the association between regular exposure to EOTC and school motivation.

Despite the likely positive influence of EOTC on autonomous forms of motivation, the influence of regular use of EOTC on students’ school motivation is still unclear (Becker et al., 2017). The aim of this study is to investigate the association between primary school

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