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Hyperactivity, inattention, and student engagement: The protective role of relationships with teachers and peers☆

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ABSTRACT

This study examines whether closeness with teachers and prosociality toward peers protect students displaying hyperactive or inattentive behaviors against behavioral, emotional, and cognitive disengagement throughout the school year. We collected data from a sample of 513 fourth- to sixth-grade students (50.5% girls) in seven elementary schools. Path analysis results first revealed that students who displayed high levels of inattention showed increased behavioral disengagement, while this trend was only marginal for students displaying high hyperactivity. Findings further suggested that, for students with high levels of hyperactivity or inattention, student-teacher closeness acted as a protective factor against behavioral disengagement. When students did not share such positive relationships with teachers, they reported a decrease in behavioral engagement as their level of hyperactivity or inattention increased. This protective role of student-teacher closeness was also found for the influence of hyperactivity on cognitive engagement in boys, but not in girls. Finally, prosociality had a direct positive influence on student cognitive engagement. It was also a moderator of the link between student hyperactivity and behavioral engagement; a high level of hyperactivity was not associated with behavioral disengagement for students who are prosocial toward peers. Overall, these results suggest that positive relationships with peers and teachers are important protective factors for hyperactive or inattentive students, especially against their behavioral disengagement in school.

1. Introduction

Student engagement in school promotes positive educational and psychosocial adjustment. Students who are engaged in elementary and secondary school perform better, have higher graduation rates and, in the long run, are more likely to take on undergraduate studies (Appleton, Christenson, & Furlong, 2008; Archambault, Janosz, Morizot, & Pagani, 2009; Baroody, Rimm-Kaufman, Larsen, & Curby, 2016; Finn, 1989). Conversely, students who are less engaged in learning are more likely to drop out of school (Janosz, Archambault, Morizot, & Pagani, 2008). They are thus more at-risk of having lower income jobs or of being unemployed (Ferrer & Riddell, 2002).

A great concern among professionals in education is that the incidence of classroom disengagement is not uniform across all students. Specific groups of children, like those with hyperactive and inattentive behaviors, are more likely to exhibit school-related problems and disaffection. Due to their lower behavioral inhibition, these children have difficulty remaining focused on, and investing their energy into classroom tasks (American Psychological Association, 2013; Barkley, 1997). Consequently, they are generally less engaged, less likely to appreciate assignments, and struggle to perform in school (Junod, DuPaul, Jitendra, Volpe, & Cleary, 2006). Over time, hyperactivity and inattention are associated with student disengagement. Fortunately, not all children follow the same disengagement trajectory (Janosz et al., 2008; Pagani, Fitzpatrick, & Parent, 2012; Vitaro, Brendgen, & Tremblay, 2014). Factors, such as prosocial skills toward peers and positive relationships with teachers, play a direct adaptive role on students' functioning in school (Birch & Ladd, 1997; Birch & Ladd, 1998; Wentzel, Battle, Russell, & Looney, 2010). These factors are likely to protect boys and girls with hyperactivity and inattention against a decrease in school engagement. Nevertheless, this hypothesis has never been tested. To address this gap in the literature, the present research aims to investigate the protective role of relationships with peers and teachers to prevent hyperactive and inattentive students' disengagement in literacy; a domain known to be central for student learning and mastery in every other academic subject matter (Wilson & Trainin, 2007).

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1.1. Student engagement in school

The Self-System Model of Motivational Development (SSMMD; Connell & Wellborn, 1991) suggests that student engagement is a key mechanism contributing to academic achievement and success. In this model, engagement is thought to be part of a lager motivational process in which inter- and intra-individual factors explain why students tend to be engaged or disengaged in class. Inter-individual factors notably include the bond students create with school and social surroundings. According to the SSMMD, sharing positive relationships with peers and teachers support students' inner motivation and, in turn, their active engagement in class. Likewise, intra-individual factors, such as students' sense of competence in school, influence their desire and energy to remain engaged in classroom tasks. Together, these individual and social factors are part of a system of influences that support student motivation, engagement, achievement, and perseverance in school.

The SSMMD relies on a three-dimensional definition of student engagement, including behavioral, emotional, and cognitive components. These distinct dimensions of engagement interact dynamically and are malleable. They evolve over time influenced by school factors and student individual characteristics (Fredricks, Blumenfeld, & Paris, 2004; Li & Lerner, 2013). First, behavioral engagement includes observable behaviors reflecting student participation and effort in academic tasks (Finn, 1993; Fredricks et al., 2004). A child with high behavioral engagement in literacy is more likely to answer questions in class and to be attentive to teachers' explanations during reading and writing tasks. Second, the emotional dimension of school engagement is defined by students' affective reactions to classroom activities. For example, interest, appreciation, and enthusiasm presumably enhance their bond with school (Finn, 1993; Fredricks et al., 2004). Finally, cognitive engagement encompasses students' ability to self-regulate during classroom tasks and their desire to understand and master difficult skills (Fredricks et al., 2004). Children who are cognitively engaged in literacy plan their writing and reading comprehension tasks and use effective strategies to avoid or to correct mistakes in assignments. Overall, existing work has shown that the three components of student engagement are important and complementary for understanding student academic achievement in literacy (Finn & Zimmer, 2012; Wang & Eccles, 2012a). Some have also shown that each dimension of student engagement is influenced by different factors (for review, see Fredricks et al., 2004), evolve through different paths, and tend to decrease when approaching the transition to secondary school (Duchesne, Larose, Guay, Vitaro, & Tremblay, 2005; Janosz et al., 2008). Consequently, it is important to deepen our understanding of the distinct contribution of these dimensions before this transition.

1.2. Hyperactivity, inattention, and student engagement

Children hyperactive and inattentive behaviors are defined in different ways. According to Haslam, Williams, Prior, and Graetz (2006), these behaviors and the difficulties associated with them ought to be conceptualized in a dimensional perspective, rather than in a categorical perspective. The dimensional perspective views hyperactivity and inattention problems as the number and severity of problematic behaviors a child displays. According to the American Psychological Association (2013), children who display hyperactive behaviors fidget, are unable to remain seated when expected to, run and climb in inappropriate situations, talk excessively, and interrupt or intrude on others. Some children also exhibit inattentive behaviors. They forget things, are easily distracted, and have difficulty organizing their work and material. They make careless mistakes, have difficulty focusing their attention on assignments, and sometimes neglect to listen when spoken to. Riberdy, Tétreault, and Desrosiers (2013) have reported a prevalence of hyperactive and inattentive behaviors in children as high as 12%.

Some studies have focused on the distinct influence of hyperactivity and inattention on student academic outcomes. Such studies have shown that inattention is more likely to undermine one' academic achievement and school completion than hyperactivity (Jaekel, Wolke, & Bartmann, 2013; Massetti et al., 2008; Ogg, Volpe, & Rogers, 2016; Pham, 2016; Pingault et al., 2011; Salla et al., 2016). There are very few studies that have considered this distinct influence on student engagement. Yet, Zendarski, Sciberras, Mensah, and Hiscock (2017) found that both hyperactivity and inattention were associated with lower emotional and cognitive engagement in adolescence, although the effect size of inattention was larger than that of hyperactivity.

As stated in the “Student Engagement in School” section, the SSMMD posits that key individual factors positively influence student engagement. Yet, hyperactive and inattentive students tend to have deficits in executive functions associated with low self-regulation, high impulsivity, difficulty in achieving their goals, increased school difficulties, and lower sense of competence in school (Barkley, 1997; Lee & Stone, 2012). Such factors undermine student active engagement in class. Numerous empirical studies also support the links between student hyperactive or inattentive behaviors and disengagement (Pagani et al., 2012; Portilla, Ballard, Adler, Boyce, & Obradovic, 2014; Searle, Miller-Lewis, Sawyer, & Baghurst, 2013; Vitaro et al., 2014). In class, these children begin projects or tasks without completing them and struggle to behave as expected; they move around a lot, make noise, and have difficulty paying attention (Volpe et al., 2006). As a result, they often participate less in class and have difficulty focusing on tasks. These are typical signs of behavioral disengagement (Demaray & Jenkins, 2011; Junod et al., 2006; Volpe et al., 2006). However, these studies have not considered inattention and hyperactivity separately. It is thus impossible to draw conclusions on their distinct influence on student behavioral engagement.

Students displaying hyperactivity and inattention also tend to depend on external help, such as reinforcement and rewards, to increase their motivation while learning (Carlson & Tamm, 2000; Wilkison, Kircher, McMahon, & Sloane, 1995). Yet, when these students are required to complete classroom tasks on their own, they have more difficulty remaining interested and enthusiastic. This results in lower emotional engagement (Carlson & Tamm, 2000; Demaray & Jenkins, 2011). Empirical studies suggest that hyperactive and inattentive students are often less persistent and more likely to give up during academic tasks. They prefer easier assignments that do not require self-regulation. This indicates weaker cognitive engagement (Searle et al., 2013). In sum, although not necessarily severe enough to lead to a diagnosis, hyperactive or inattentive behaviors are risk factors for disengagement during school years (Demaray & Jenkins, 2011). Fortunately, there are reasons to believe that some inter-personal factors thwart the negative influence of students' inattentive and hyperactive behaviors on their engagement.

1.3. Students' social interactions in school

Connell and Wellborn's (1991) SSMMD posits that the bond a student creates with his social surroundings initiate a motivational process leading to positive classroom engagement. Student prosocial skills toward peers and closeness with teachers are thus likely to ensure their social integration in school and, in turn, to promote their engagement (Buhs & Ladd, 2001; Roorda, Koomen, Spilt, & Oort, 2011).

On the one hand, students behaving prosocially with their peers tend to be sensitive and kind to others; they easily share things and help peers when they need it (Hay, 1994; Wentzel, 2003, 2005a). When playing with others, prosocial children also avoid disruptive behaviors, such as wriggling and making mouth noises (Ronk, Hund, & Landau, 2011). These students behave as they are expected to, which makes them generally more accepted by classmates, more able to maintain positive and mutual friendships, less bullied, and more likely to display higher school engagement (Berndt & Keefe, 1995; Wentzel & Caldwell, 1997; Wentzel, McNamara, & Caldwell, 2004).