Are both classroom autonomy support and structure equally important for students' engagement? A multilevel analysis

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A B S T R A C T

The current study was carried out within the framework of self-determination theory and aimed to investigate specific, additive and combined effects of teachers' autonomy support and structure on students' engagement. Using multilevel analyses, main effects and interaction of autonomy support and structure provided at the classroom level were tested on behavioral, cognitive and emotional engagement. 744 ninth grade students from 51 classes completed a questionnaire about their engagement during language classes and their perceptions of the teacher's provision of autonomy support and structure. The results highlight the links between classroom context, especially structure, and the three components of engagement. Autonomy support has a complementary role as it was associated with emotional engagement. These results improve our understanding of the relationships between learning environment and engagement and provide more accurate indications to teachers and educators regarding the most effective ways to enhance students' engagement.

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1. Introduction

Student engagement has attracted the attention of many researchers and education professionals in recent years (Fredricks & McColskey, 2012). According to self-determination theory (SDT; Deci & Ryan, 2008), engagement is the reflection of the positive development of an individual. In the context of schooling, engagement describes the level of energy or effort students invest in learning activities which has positive consequences, notably on achievement and well-being (Reeve, 2002; Skinner, Furrer, Marchand, & Kindermann, 2008). Engagement is considered to be a malleable state influenced by contextual factors (Fredricks, Blumenfeld, & Paris, 2004). Improving our understanding of the effects of these factors is important in the design of learning environments that foster student engagement and, in turn, achievement.

SDT emphasizes the role of different dimensions of the social context in enhancing or diminishing student engagement (Skinner et al., 2008). Recently, there has been much discussion of the relationships between the dimensions of autonomy support and structure, and their respective contributions to engagement (Jang, Reeve, & Deci, 2010; Vansteenkiste et al., 2012). Autonomy support refers to the amount of psychological freedom teachers allow students in determining their own behaviors (Assor, Kaplan, & Roth, 2002). It consists in supporting students in the pursuit of their own goals and in creating congruence between students' motives and classroom activities (Reeve, Jang, Carrell, Jeon, & Barch, 2004). Teachers support autonomy by offering choices and rationales for mandatory activities, by highlighting meaningful learning goals, by presenting interesting activities, by adopting students' perspectives and by avoiding the use of control (Jang et al., 2010; Reeve et al., 2004; Skinner & Belmont, 1993). Structure refers to the amount and the clarity of information given to students about how to satisfy teachers' expectations and achieve the desired educational outcomes (Jang et al., 2010; Skinner & Belmont, 1993). Teachers provide structure by communicating expectations, by providing guidance, optimal challenges, and feedbacks (Reeve, 2006; Vansteenkiste et al., 2012). SDT posits that both dimensions are important for engagement, but there is little evidence in support of this claim (Stroet, Opdenakker, & Minnaert, 2013). Moreover, the results of the few studies that include both dimensions show substantial inconsistencies. For instance, Jang et al.

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(2010) found a positive link of autonomy support, but not of structure, with engagement. Skinner and Belmont (1993) found the opposite: Engagement was significantly enhanced only by structure. More work needs to be done to determine the relative importance of each dimension on engagement, and the value of combining them.

SDT postulates that autonomy support and structure are contextual characteristics affecting individual functioning. Many studies carried out in the SDT framework performed data analyses at the (student) individual level, and did not allow testing of learning environment effects (Marsh et al., 2012). Using a multi-level analytical framework, the present study aimed to investigate the main effects and interaction of autonomy support and structure at the classroom level on student engagement. Given the multidimensional nature of engagement, we investigated this question by distinguishing behavioral, cognitive and emotional engagement (Archambault, Janosz, Fallu, & Pagani, 2009; Shernoff, 2013).

1.1. Autonomy support and structure

SDT holds that teachers' autonomy support and structure contribute to the enhancement of academic engagement by fulfilling basic psychological needs. Autonomy support is hypothesized as fulfilling the need for autonomy, meaning the experience of a sense of volition. Structure is hypothesized as fulfilling the need for competence, meaning feeling effective (Dupont, Galand, Nils, & Hospel, 2014; Vansteenkiste et al., 2012).

Two main conceptions of the relations between autonomy support and structure have been proposed in the literature. On the one hand, they have sometimes been conceptualized as two opposed dimensions: Autonomy support is provided by removing structure and vice-versa (see Vansteenkiste et al., 2012). This conceptualization has been challenged for its interpretation of autonomy support as *laissez-faire*, or a lack of guidance (Reeve, 2002; Vansteenkiste et al., 2012). On the other hand, some authors have stressed that, according to SDT, autonomy support and structure should be conceptualized as distinct orthogonal dimensions, complementary and mutually supportive. Recent empirical studies support this latter conception (Jang et al., 2010; Sierens, Vansteenkiste, Goossens, Soenens, & Dochy, 2009; Vansteenkiste et al., 2012). This allows the examination of the most efficient combination of autonomy support and structure to promote students' engagement. Teachers can provide high or low levels of both dimensions to students, or a high level of one dimension and a low level of the other (Jang et al., 2010). However, it is unclear how autonomy support and structure enhance engagement in the most effective way. The effects of each dimension could be cumulative (*additive* effect): Each dimension makes its own positive contribution to engagement, and providing both would be particularly effective. One specific dimension could be more crucial for engagement than the other (*specific* effect). Providing students with the second dimension would have no significant effects beyond the effects of the first dimension. The positive effect of one dimension could be related to the presence or absence of the other (*combined* or interactive effect). The effect of one dimension on engagement could be accentuated when the level of the other dimension is high. Conversely, the provision of one dimension could compensate for the absence of the other.

Existing studies have left three important questions unanswered regarding the relationships between autonomy support/ structure and engagement:

1) SDT states that providing both dimensions is important in enhancing engagement, as they tend to fulfill specific needs (see Dupont et al., 2014; Skinner & Belmont, 1993). But what is the

relative weight of autonomy support and structure? Do they have additive, specific or combined effects on engagement?
2) Are autonomy support and structure related the same way to each component of engagement? SDT seems to postulate that the relationships are similar.
3) SDT claims that social context affects individual functioning. Is teacher provision of autonomy support and structure at the classroom level associated with student engagement at the individual level?

A review of the available evidence regarding those questions is presented below.

1.2. Do autonomy support and structure have additive, specific or combined effects on engagement?

Most studies have focused on autonomy support and highlighted its positive role for engagement (Assor et al., 2002; Reeve et al., 2004; Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004), while Nie and Lau (2009) focused on structure and found a positive link with engagement. A few studies have investigated the effects of both dimensions simultaneously. Using students' ratings of teachers' autonomy support and structure, some authors found only a main effect of structure (Skinner & Belmont, 1993); a main effect of structure plus an interaction between autonomy support and structure (Sierens et al., 2009); or independent main effects of both dimensions (Tucker et al., 2002) on engagement. Using observers' ratings of teachers' autonomy support and structure, Jang et al. (2010) found only a main effect of autonomy support on students' self-reported engagement. These contradictory findings may be due to the component of engagement investigated in these studies.

1.3. Do autonomy support and structure have identical effects on each component of engagement?

Most scholars view engagement as a multidimensional construct composed of behavioral, cognitive and emotional components (Archambault et al., 2009; Fredricks & McColskey, 2012; Shernoff, 2013). Behavioral engagement refers to students' actions towards learning and school activities such as participation, attendance, etc. Emotional engagement refers to positive and negative affective reactions toward school, teachers, etc. Cognitive engagement consists in psychological involvement in learning, including students' use of learning and self-regulated strategies (Fredricks et al., 2004).

Regarding behavioral engagement, studies including both autonomy support and structure found only a positive main effect of structure (Skinner & Belmont, 1993; Wang & Eccles, 2013). Regarding cognitive engagement, results differ. Sierens et al. (2009) found a positive main effect of structure on self-regulated learning and a significant interaction: Self-regulated learning was higher when structure was combined with a moderate or high level of autonomy support. Wang and Eccles (2013) found a positive effect of autonomy support on the use of self-regulated strategies. These authors did not investigate interactions between autonomy support and structure. Regarding emotional engagement, only a main effect of autonomy support was found on positive emotions (Wang & Eccles, 2013). No effects of structure were found on interest (Kunter, Baumert, & Köller, 2007). Vansteenkiste et al. (2012) found that test anxiety was reduced when teachers used both autonomy support and structure, in comparison with teachers who used a low level of both or a high level of only one of them, suggesting a combined effect of both dimensions. Specific relationships with autonomy support and structure could therefore exist depending on the investigated components of engagement. Since these studies