

“Investigation of the effects of autonomy-support, structure and involvement on students’ engagement “

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Background and aims

Regarding the effects of teachers’ practices on student engagement, the self-determination theory (SDT) highlights the importance of autonomy support (provision of choice, facilitation of students’ expression and participation, acknowledgement of their perspective) (Reeve, 2009; Sierens et al., 2009). If this theory also includes teachers’ provision of structure and involvement in its model, the effects of these practices have been less investigated. Yet, the studies led showed significant effects of both these teaching practices: structure was positively linked with behavioral engagement and cognitive engagement, and teachers’ involvement was significantly linked with emotional engagement (Skinner & Belmont, 1993; Sierens et al., 2009). However these authors focused on individual perceptions of teaching and they did not taken the nested structure of their data into account. A recent study of Jang and colleagues (2010), using multilevel analyses and taking both structure and autonomy-support into account, stressed the main effect of autonomy-support at the classroom level on engagement. But these authors did not control for classroom composition, did not use longitudinal design and did not differentiate between components of engagement (emotional, cognitive, and behavioral). Yet, the results retrieved above suggest that the effects of teachers’ practices could vary depending on the component of engagement studied. In summary, the results regarding the effects of these teaching practices are quite contradictory, which could be due to differences in methodology used. Therefore, a longitudinal and multilevel approach seems essential to better identify and understand the effects of these teaching practices at the classroom level. In addition, some authors have recently investigated the relation between autonomy-support and structure. They found that these two practices could be complementary and orthogonal dimensions (Jang et al., 2010; Sierens et al., 2009). Nevertheless, the interaction between these teachers’ practices on students’ engagement has almost never been tested. The relative importance of each practice and the interest of combining them have been little discussed.

Using a multilevel analytical framework, the aims of the current study were:

- (a) to assess the magnitude of the classroom effect on engagement in mathematics,
- (b) to examine the effects of teacher’s autonomy-support, structure and involvement (main effects and interaction) on engagement in mathematics in 8th grade, controlling for 7th grade engagement, individual characteristics and 8th grade classroom composition.

Method

Sample and procedure

Seven hundred and thirty-seven students from 57 classrooms were asked to fill in a questionnaire assessing their perceptions of teaching practices and their engagement during mathematics lessons. They completed it once in 7th and then in 8th grade.

Measures

Individual socio-demographic characteristics: gender, age, grade retention, socio-economic status (SES).

Classroom composition: number of students, gender ratio, ratio of retained students and mean SES.

Teaching practices: aggregated students' perceptions of autonomy-support, structure and involvement provided by the mathematics teacher.

Engagement: emotional (positive and negative emotions), cognitive (self-regulation and use of deep processing strategies) and behavioral engagement during mathematics lessons.

Results

Multilevel analyses were performed with the HLM7 software, using a stepwise procedure.

First, models without predictors were run to estimate the partition of variance between and within classrooms. Significant between-classroom variance (from 3% to 7% of total variance) appeared for engagement in mathematics.

Second, models including individual control variables (socio-demographic characteristics and 7th grade engagement) and classroom composition were run. The results showed an effect of previous engagement: students who reported higher engagement in 7th grade reported higher engagement in 8th grade. Students who had more material resources reported higher cognitive and emotional engagement and those who had more cultural resources reported more cognitive and behavioral engagement. Finally, boys reported more positive emotions. No effects of classroom composition were found.

Third, perceptions of teachers' practices aggregated at the classroom level were added in the models, controlling for the variables introduced at step two. The main effects of autonomy-support, structure, and involvement, and the interaction between these practices on engagement were tested. The results showed that engagement (cognitive, behavioral engagement and positive emotions) were higher in classroom with more provision of structure. Negative emotions were lower in classrooms with more autonomy-support. A significant interaction between structure and involvement was found regarding students' self-regulation (i.e. when the level of teacher's involvement was moderate, students reported more self-regulation when the level of structure was high than when it was moderate).

Discussion

The results highlight the effect of contextual variables on engagement, above the effect of students' previous level of engagement. Students' engagement fluctuates from one classroom to another, and these between-classroom variations are only slightly related to socio-demographic characteristics of students or classroom composition. Structure provided by the teacher appears more central to explain between-classroom differences in students' engagement. It is consistent with Skinner and colleagues (1993) and Sierens and colleagues' (2009) findings at the individual level. But it is quite divergent from Jang and colleagues' (2010) multilevel study which stressed the main role of autonomy-support on a global measure of engagement. Nevertheless, our results also stress the importance of autonomy-support provided by teachers at the classroom level, for emotional engagement. While a lot of studies led in the SDT framework focus on the effects of autonomy-support, our results stress the interest to take other teachers' practices into account, especially structure, and to combine them in classroom context to enhance the various components of students' engagement.

References

- Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and how they can become more autonomy supportive. *Educational Psychologist*, 44(3), 159-175.
- Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology*, 85(4), 571-581.
- Sierens, E., Vansteenkiste, M., Goossens, L., Soenens, B., & Dochy, F. (2009). The synergistic relationship of perceived autonomy support and structure in the prediction of self-regulated learning. *British Journal of Educational Psychology*, 79(1), 57-68.
- Jang, H., Reeve, J., & Deci, E. L. (2010). Engaging students in learning activities: It is not autonomy support or structure but autonomy support and structure. *Journal of Educational Psychology*, 102(3), 588-600.