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Examining the effects of a professional development program on teachers' pedagogical practices and students' motivational resources and achievement in written French☆

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ABSTRACT

We tested the effects of a professional development program (CASIS) on teachers' pedagogical practices and students' motivation and achievement in written French. CASIS involved a two-day workshop in which we taught teachers to use collaboration, autonomy support, authentic tasks, involvement, and structure. We conducted a quasi-experimental longitudinal study among 18 elementary school teachers and 277 of their students. The results showed large group effect sizes for four of the five pedagogical practices and increased intrinsic motivation for students whose teachers attended CASIS. The discussion centers on the implications of these findings for research and practice.

1. Introduction

In Quebec, a Canadian province where the official language is French, approximately 20% of sixth-grade students (11-year-olds) fail the final French exam prescribed by Quebec's ministry of education (MELS, 2012). Concerns about writing quality are neither recent nor specific to Quebec (Harris, Graham, & Mason, 2006). However, they are nonetheless relevant, because the minimum literacy level required to function in society has risen substantially in recent decades (Cartier, 2006; Torgesen, 2002).

The purpose of this study was to evaluate a teachers' professional development (PD) program called CASIS, which was designed to improve teachers' pedagogical practices, to foster elementary students' motivational resources and writing achievement. Indeed, waiting until later grades to address writing problems that originate in the elementary grades has not proven successful (Slavin, Madden, & Karweit, 1989). We held a two-day workshop based in part on self-determination theory (SDT; Deci & Ryan, 2002), where we taught teachers to use the five following pedagogical practices: *c*ollaboration, *a*uthentic activities, *s*tructure, *i*nvolvement, and *s*upport for autonomy, or CASIS. We investigated three main questions: 1) Is CASIS effective in encouraging teachers to increase their use of the five pedagogical practices? 2) Does CASIS help children increase their motivational resources? and 3) Does CASIS improve their writing performance?

2. Motivational resources from a self-determination theory perspective

We focused on three motivational resources that were expected to be important for children's functioning at school: regulation types, perceived competence, and perceived relatedness to teachers (Ryan & Deci, 2009).

2.1. Regulation types in writing

According to SDT (Ryan & Deci, 2000), motivation is defined as the reasons that underlie behavior (hereafter referred to as "regulation"). SDT makes a distinction between different regulation types, which vary in terms of self-determination (i.e., the extent to which behavior originates from the self). Intrinsic regulation refers to engaging in a writing activity for its own sake, for the pleasure and satisfaction derived from it (Ryan & Deci, 2000). Most students are intrinsically regulated to write early in school, but unfortunately, the pleasure and satisfaction decrease with age (Boscolo & Gelati, 2013). This decline may be attributable to the increasing complexity of writing, leading to a switch from intrinsic to extrinsic regulation. The latter refers to engaging in a writing activity for instrumental rather than intrinsic reasons.

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According to SDT, there are different types of extrinsic regulation, which vary along a self-determination continuum. From low to high self-determination, these are external regulation, introjected regulation, identified regulation, and integrated regulation (Ryan & Deci, 2000).

External regulation occurs when behavior is motivated by the desire to obtain a reward or avoid punishment. Introjected regulation refers to behaviors in response to internal pressures, such as obligation or guilt: students somewhat endorse the reasons for doing writing activities, but in a controlled manner. In this study, we assess introjected and external regulations jointly under the construct of controlled regulation (see Shahar, Henrich, Blatt, Ryan, & Little, 2003). Identified regulation occurs when students identify with the reasons for performing a writing activity, or when they personally find it important. This is a self-determined form of extrinsic motivation, because the behavior originates from the self in a non-contingent manner. Integrated regulation occurs when the identified regulation is congruent with other values and needs. However, this type of regulation requires individuals to have formed a clear conception of their various identities (Deci, Ryan, & Guay, 2013), which is not the case with elementary school children. Therefore, we did not assess integrated regulation in this study.

Similar to students who are intrinsically motivated, those who adopt identified regulation are more persistent and cognitively involved in their tasks, experience more positive emotions, and earn better grades, whereas students who are motivated in a controlled fashion are less persistent, more distracted, experience more negative emotions, and obtain lower grades (Guay, Ratelle and Chanal, 2008). Very few studies have investigated these regulation types in writing. In one study, however, Guay et al. (2010) found that the more elementary school students performed written tasks for intrinsic and identified reasons, the more competent they felt in this field.

2.2. Perceived competence in writing

Perceived competence means that students see themselves as being effective in their interactions with the school environment (Marsh, 1990). Specifically, students who perceive themselves as highly competent in a given school activity will perform it better (Guay, Marsh, & Boivin, 2003) and persist longer (Guay, Larose, & Boivin, 2004). Research in this area has shown that perceptions of competence are not unitary, but are instead specific to school subjects (see Marsh, 2007). Although perceived verbal competence and verbal self-concept have been widely investigated in the motivation literature, perceived writing competence has been less studied. However, findings from the self-efficacy literature show that students' confidence in their writing capabilities influences various writing outcomes (Pajares, 2003).

2.3. Perceived relatedness to teachers

According to Ryan and Deci (2002), perceived relatedness refers to students' feeling connected to others. Students' representations of relatedness are of interest because previous research shows that these representations are important organizers of psychosocial development (Guay, Marsh, Senécal & Dowson, 2008). This is especially important when students are not very intrinsically motivated to write, but must nonetheless endorse this school value. Students are more likely to internalize external demands when they feel connected to significant others (Deci & Ryan, 1991). Numerous studies have shown that when students feel connected to their teachers, they perform better in various school subjects (see Martin & Dowson, 2009).

2.4. The five pedagogical practices

According to some researchers (Boscolo & Gelati, 2013; Guthrie, Wigfield, & VonSecker, 2000; Guthrie et al., 1998; Reeve, 2002), five pedagogical practices may help students feel more competent, develop a sense of relatedness to their teachers, and regulate their school behaviors in an intrinsic and identified, rather than a controlled, manner.

Autonomy-supportive practices mean that the teacher considers the students' perspective; provides a rationale for his/her requests; acknowledges students' feelings and perceptions; provides them with information and choices; and minimizes the use of pressure and control, such as task deadlines, performance-based rewards, imposed goals for a given activity, and competition (Ryan & Deci, 2009). *Involvement* means that the teacher is aware of the students' personal knowledge and interests, cares about each student's learning, and sets realistic, positive goals for students' efforts and learning (Skinner & Belmont, 1993). *Structure* means giving students clear expectations, optimal challenges, and effective feedback (Reeve, 2002). The research to date shows that teachers who are autonomy-supportive and involved and who use appropriate structures foster intrinsic and identified regulations, perceived competence, academic achievement, conceptual learning, and greater creativity (Skinner & Belmont, 1993). These three pedagogical practices may also be linked to the concept of person-centered teaching (Cornelius-White, 2007), whereby teachers who listen, are caring, and have positive regard for others produce higher achievement outcomes (Hattie, 2009).

In addition to these pedagogical practices, we focused on two others that are not linked to interpersonal dimensions per se, but which could affect the above-mentioned motivational resources (Guthrie et al., 2000), namely authentic tasks and collaboration. *Authentic tasks* refer to meaningful writing activities. Such tasks have real consequences for a child's life (Duke, Purcell-Gates, Hall, & Tower, 2006; Hibert, 1994). Past research suggests that these types of activities capture attention, raise questions, and promote active learning, because they call on autonomous regulation and develop perceived competence in the educational task (Boscolo & Gelati, 2013). *Collaboration* requires students to share their knowledge and ideas with their peers while receiving feedback on their work. Research has shown that collaboration helps reduce competition and social comparison among students (Guthrie et al., 2000) and may thus foster autonomous regulation, perceived competence, and perceived relatedness, and reduce controlled regulation.

3. The CASIS professional development framework

CASIS was developed based on knowledge about teachers' professional development (PD; Desimone, 2009). The CASIS workshop included four learning units. In Unit 1, we provided a detailed explanation of motivational resources and why they are important for children's learning and achievement. In units 2 and 3, we thoroughly defined the five pedagogical practices. Written case studies were provided to ensure that all participants had a good understanding of the concepts. We also illustrated each pedagogical strategy with a series of videos featuring teachers and their students. Additionally, we asked teachers to observe their own practices (videotaped) in light of the five proposed pedagogical practices. Several studies have demonstrated the usefulness of classroom videos to support teacher learning (Visnovska & Cobb, 2013). This way, teachers can gauge their progress on goal achievement. Self-observation, combined with discussions with the PD facilitator, can thus motivate teachers to make behavioral changes. Unit 4 focused on the teachers' own competencies in applying the pedagogical practices.

We designed each unit to include core characteristics of PD programs that have been demonstrated to be effective in improving teachers' instructional practices (see Desimone, 2009), namely a) content focus (i.e., all examples are in line with the writing content to be covered in second grade), b) active learning (i.e., teachers observe videos of other teachers, share their "usual" teaching practices and those they have adopted in light of CASIS, and do some in-session collaborative work), c) coherence (i.e., the material taught is consistent with the Québec Education Program), d) duration (i.e., CASIS is a 16-h training workshop spread over one semester, a duration in line with most