Changing teachers' beliefs regarding autonomy support and structure: The role of experienced psychological need satisfaction in teacher training

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Nathalie Aelterman [a,*], Maarten Vansteenkiste [a], Hilde Van Keer [b], Leen Haerens [c]

[a] Department of Developmental, Personality and Social Psychology, Ghent University, Belgium
[b] Department of Educational Studies, Ghent University, Belgium
[c] Department of Movement and Sports Sciences, Ghent University, Belgium

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ABSTRACT

Objectives: Grounded in Self-Determination Theory, this study examined whether physical education (PE) teachers' psychological need satisfaction experienced during continuous professional development (CPD) on need-supportive teaching predicted changes in their effectiveness and feasibility beliefs regarding the proposed teaching approach, as well as their intentions to apply this approach and sub-sequent changes in their self-reported in-class behaviors.
Methods: Prior to the training, a sample of 80 PE teachers (57.5% men, Mage = 42.70 ± 10.15 years) reported on their effectiveness and feasibility beliefs regarding autonomy-supportive and structuring teaching strategies and their in-class application of these strategies. Immediately following the training, these beliefs were assessed again and participants reported on their psychological need satisfaction experienced during the training and their intentions to apply the proposed strategies. Finally, two weeks after the training, participants' self-reported in-class application of the teaching strategies was measured for the second time.
Results: Psychological need satisfaction experienced during the training related to a change in effectiveness and feasibility beliefs regarding autonomy support and structure, and to teachers' intentions to apply the proposed strategies as reported immediately after receiving the training. In addition, teachers' intentions related to a change in their self-reported in-class application of structuring, but not autonomy-supportive, teaching strategies.
Conclusions: Experiences of psychological need satisfaction during CPD can help to increase the likelihood that teachers become more convinced about the effectiveness and feasibility of the proposed change and can produce greater intentions toward change, which may relate to actual (albeit) self-reported behavior change.

'Supporting students' needs and values might work for some students, but others will definitely benefit from a traditional, more rigorous approach.'

'If I continually try to figure out what my students want, we end up in an endless discussion and I don't come to actual teaching at all. Such an approach not only wastes a lot of time, but also takes a lot of energy!'

As in any profession, it is important for physical education (PE) teachers and sport coaches to regularly engage in continuous professional development (CPD) programs as to stay up-to-date with innovations in the field and to assimilate new knowledge, skills, and expertise (Opfer & Pedder, 2011). However, during these CPD programs in which innovative or alternative instructional approaches are proposed, participants sometimes confront the CPD provider with critical remarks or skeptical reactions, as the ones in the introductory examples. Not surprisingly, PE teachers and sport coaches do not automatically endorse the messages delivered through CPD, presumably because certain instructional behaviors have become ingrained into their teaching or coaching repertoire and daily routine (Pajares, 1992).

* Corresponding author. Department of Movement and Sport Sciences, Ghent University, Watersportlaan 2, 9000 Ghent, Belgium.
E-mail address: Nathalie.Aelterman@UGent.be (N. Aelterman).

In the case of PE teachers, many factors, including teachers' personality dispositions (Van den Berghe et al., 2013), the social context in which they teach (Taylor, Ntoumanis, & Smith, 2009), the characteristics of their students (Pelletier, Sequin-Levesque, & Legault, 2002) and the motivational beliefs they hold (Roth & Weinstock, 2013), may explain why they might (or might not) undergo a change in their teaching approach. With respect to teacher beliefs, if the proposed strategies are perceived as not effective (i.e., effectiveness belief) or too difficult or challenging to apply in practice (i.e., feasibility belief), teachers are unlikely to undertake change (Reeve, 1998; Reeve et al., 2014). Given that prior research has shown that effectiveness and feasibility beliefs underlie teachers' in-class teaching behavior (Pajares, 1992; Reeve et al., 2014; Tsangaridou, 2006) and that teacher beliefs are, in contrast to other determinants of teaching behavior, more malleable through CPD programs (Aelterman, Vansteenkiste, Van den Berghe, De Meyer, & Haerens, 2014), one critical question becomes which dynamics are involved in changing teachers' beliefs and related outcomes.

Grounded in Self-Determination Theory (SDT; Deci & Ryan, 2000), we propose that teachers' personal experiences during CPD are critical herein. Specifically, the aim of the present study was to examine whether the satisfaction of PE teachers' basic psychological needs for autonomy (i.e. experiencing a sense of volition and psychological freedom), competence (i.e. experiencing personal effectiveness), and relatedness (i.e. experiencing closeness and mutuality in interpersonal relationships) during CPD fosters a change in teachers' beliefs underlying the proposed teaching approach (Ryan & Deci, 2008). In addition, we explored whether experienced need satisfaction would relate directly to PE teachers' intentions to apply the proposed change and to their self-reported in-class behaviors.

1. Changing teachers' beliefs

Research consistently confirms that in-service training is positively related to student outcomes (Darling-Hammond, Holtzman, Gatlin, & Heilig, 2005). Therefore, teachers' regular engagement in CPD and life-long learning is strongly encouraged (Opfer & Pedder, 2011). However, the effects of CPD might get diminished when teachers start to express reservations regarding the proposed changes because they hold certain beliefs regarding the recommended strategies (Reeve, 1998; Reeve et al., 2014). A first belief that can hamper but also stimulate teachers to change their current teaching repertoire is their belief regarding the *effectiveness* of offered instructional strategies (Reeve et al., 2014). That is, to the extent that teachers believe that particular teaching strategies are effective, they would perceive them as more meaningful, leading them to more strongly endorse (i.e., internalize) these strategies. For example, if teachers believe that extrinsic motivators (e.g., incentives, rewards) are efficacious in arousing students' motivation, they are more likely to rely on such practices (e.g., Pajares, 1992; Reeve, 2009). Second, teachers' beliefs regarding the *feasibility* of an alternative instructional approach in everyday teaching practice may also prevent or encourage them from changing their current teaching repertoire (Reeve et al., 2014). That is, if teachers feel more comfortable with and competent in their current way of teaching, and find their ongoing practices more fast-acting, realistic, and therefore relatively easier to enact, they are less likely to undertake change.

Within CPD research in general (Pajares, 1992; Tsangaridou, 2006) and SDT-based studies in particular (Reeve et al., 2014; Roth & Weinstock, 2013), effectiveness and feasibility beliefs have been shown to explain why teachers are open for change or rather stay ambivalent, and, in turn, decide to respectively try out or refuse to adopt the offered alternative classroom behavior. Since teachers' beliefs may conflict with the information presented in the CPD program (Reeve, 1998), it is not a straightforward endeavor for CPD providers to foster an alternative teaching approach among teachers (Pajares, 1992). Yet, Aelterman et al. (2014) recently showed that PE teachers who received training on need-supportive teaching reported an increase in both effectiveness and feasibility beliefs regarding the proposed teaching approach one month later, compared to teachers in a control group. Furthermore, these changes in teachers' beliefs were significantly associated with changes in teachers' self-reported instructional behaviors, which were also picked up by their students and by external raters (Aelterman et al., 2014).

2. Psychological need satisfaction: the energizing basis for change

From the SDT-perspective, actual changes are more likely to occur to the extent that teachers have fully internalized, that is, self-endorsed, the importance and value of the proposed alternative approach for their teaching practice (Deci & Ryan, 2000). In this respect, prior research in the broader CPD literature has suggested that the way in which CPD is delivered is as important (e.g., O'Sullivan & Deglau, 2006; Swennen, Lunenberg, & Korthagen, 2008), if not, more important than its specific content for this internalization process to occur (Aelterman et al., 2013; Deci, 2009). According to SDT, the fulfillment of the basic psychological needs for autonomy, competence, and relatedness is critical herein as these basic needs are said to serve as the psychological nutriments that *energize* personal growth and integrity (Deci & Ryan, 2000). Much like students are more likely to become enthusiastic when teachers manage to support their basic psychological needs (e.g., Reeve, Deci, & Ryan, 2004 for an overview), teachers are more likely to fully accept the proposed teaching strategies during CPD if they experience room for initiative taking (autonomy satisfaction), feel confident to successfully complete the tasks (competence satisfaction) and feel well-connected with both the CPD-provider and the other participants (relatedness satisfaction) during the training (e.g., Baard, Deci, & Ryan, 2004).

Studies in other contexts than education, including the organizational setting (Gagné, Koestner, & Zuckerman, 2000) and the health domain (see Ng et al., 2012 for a meta-analysis), indeed showed that need satisfaction engenders a greater openness, receptivity, and internalization of change, while the very blocking of these same needs likely elicits defensiveness and even defiance against change (Hodgins & Knee, 2002; Vansteenkiste & Ryan, 2013). Despite this evidence across different domains, little, if any, attention has been paid to whether teachers' experiences of psychological need satisfaction during CPD are related to their intentions to apply the teaching strategies proposed, and whether their effectiveness and feasibility beliefs about these strategies play a role in this relationship. In fact, only one (unpublished) study partially addressed this issue in a group of teachers involved in a school reform program (Feinberg, Assor, Kaplan, Kanat-Maymon, & Roth, 2005). Specifically, the results of this study indicated that teachers who felt supported in their psychological needs were more likely to identify with the proposed reform, which in turn led to a significant change toward the proposed teaching approach after two years of involvement in the program, whereas no such change was observed in a control group (Feinberg et al., 2005).

3. The present study

According to research applying SDT, the more teachers have their psychological needs fulfilled during the training, the more