



# Teachers' sense of adaptability: Examining links with perceived autonomy support, teachers' psychological functioning, and students' numeracy achievement<sup>☆</sup>



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## ABSTRACT

In the current study, we examined teachers' sense of adaptability alongside their perceptions of principal autonomy support, well-being, and organizational commitment. Associations between the teacher constructs and students' numeracy achievement were also conducted. With a sample of 115 high school mathematics teachers (and 1685 students from their classrooms), we conducted (single- and multilevel) structural equation modeling. Findings showed that perceived autonomy support was positively associated with teachers' adaptability, and that both constructs were positively associated with teachers' well-being and organizational commitment. In addition, there were several associations between the teacher constructs and students' numeracy achievement. Findings have implications for understanding teachers' responses to the inherently changing demands of their work.

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## 1. Introduction

The work of teachers involves constant change. Teachers are expected to respond to the different and changing needs of students, effectively interact with new colleagues and different parents/carers, proactively manage adjustments in timetabling and shifting daily activities, and integrate new professional learning or curriculum into their instructional practices (Collie & Martin, 2016). Being able to respond effectively to these changes is an important capacity for healthy and effective workplace functioning. This has been referred to as adaptability and defined as individuals' capacity to adjust their thinking, actions, and emotions in response to changing, new, or uncertain situations (Martin, Nejad, Colmar, & Liem, 2012). Although the literature has regularly postulated that teachers' adaptability is a central factor in effective teaching (e.g., Corno, 2008; Kunter et al., 2013; Mansfield, Beltman, Price, & McConney, 2012; Parsons, Williams, Burrowbridge, & Mauk, 2012; Vaughn & Parsons, 2013, 2016), there is limited supporting empirical work. Given the constantly changing demands

that teachers face in their daily work, more research on this topic is important.

We therefore set out to examine teachers' sense of adaptability (henceforth, predominantly referred to as adaptability). To gain a better idea of its place, it was investigated alongside three salient workplace factors. Specifically, we examined the extent to which teachers' perceptions of autonomy support provided by their principal (referred to as perceived autonomy support; PAS) are associated with their adaptability, and whether both constructs are associated with teachers' reports of well-being and organizational commitment (Phase 1). We were also interested in determining the extent to which these constructs are related to students' numeracy achievement (Phase 2). Our analyses were conducted among high school mathematics teachers (and students from their classrooms). Fig. 1 shows the examined models.

### 1.1. The importance of adaptability for teachers

Teaching work involves inherent change and teachers are called upon to regularly adapt in order to manage new or uncertain demands and situations (Collie & Martin, 2016). As such, we suggest that adaptability is a crucial capacity for teachers. The literature on this topic, although limited, has provided support for this. Some of this work has considered adaptability with respect to instructional practices (e.g., Brühwiler & Blatchford, 2011; Corno, 2008; Parsons et al., 2012; Vaughn & Parsons, 2013, 2016). For example, Corno (2008) establishes the importance of adapting instruction to meet the needs of different groups and individuals in the classroom on micro levels (small changes

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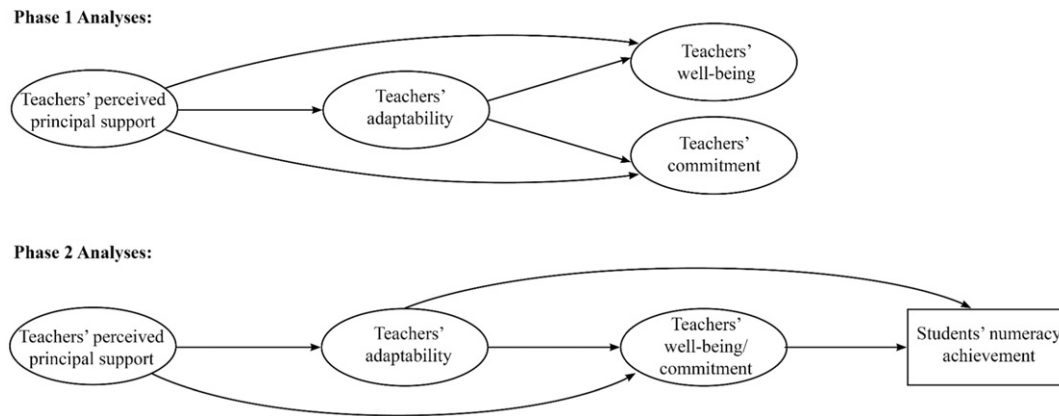


Fig. 1. The proposed models under examination.

in the moment of teaching) and macro levels (larger-scale program changes based on assessments), and that support should be adjusted continuously to match learners' changing needs as they develop. In an empirical study, Parsons (2012) examined micro adaptations in literacy instruction and provided examples of how this occurred to promote effective instruction such as changing how lesson objectives were met, inventing examples, and inserting mini-lessons. Brühwiler and Blatchford (2011) conducted a related study showing that teachers' capacity to suggest alternative strategies for planning and instructional practices in relation to vignette and video samples of others' teaching was positively associated with their own quality of instruction, and in turn, students' achievement.

Other studies have considered teachers' sense of adaptability as a central component of teacher resilience (e.g., Gu & Day, 2007; Hargreaves, 2005; Le Cornu, 2009; Mansfield et al., 2012). For example, Mansfield et al. (2012) analyzed early career teachers' descriptions of what it means to be a resilient teacher and found that alongside self-efficacy, optimism, and other personal capacities, being adaptable and flexible was a core theme and included actions such as adjusting to new roles, accepting changes, and having back-up arrangements for when things do not go to plan. In sum, emerging work supports the assertion that adaptability is an important capacity for teachers. Given the nascent nature of the empirical base, however, more research is necessary (Parsons, 2012).

## 1.2. Theorizing underpinning sense of adaptability

Although there are various constructs related to adaptability in the broader psychological literature (e.g., Cullen, Edwards, Casper, & Gue, 2014; Pulakos, Arad, Donovan, & Plamondon, 2000), there have been calls for greater conceptual and methodological clarity such as the need to disentangle the capacity of adaptability from associated motivational processes (e.g., Jundt, Shoss, & Huang, 2015; VandenBos, 2007). In the current study, we employed an operationalization that addresses these calls: the tripartite model of adaptability (Martin, Nejad et al., 2012).

### 1.2.1. Tripartite model of adaptability

According to the tripartite model, adaptability refers to an individual's capacity to use strategies to regulate their thoughts, actions, and emotions in order to effectively respond to new, changing, or uncertain situations (Martin, Nejad et al., 2012; Martin, Nejad, Colmar, & Liem, 2013). For example, if a teacher is asked to teach a new class, adaptability may involve the teacher regulating his/her thoughts to think about connections he/she can make with this new group of students, regulating behavior by seeking advice from others who have taught this class before, and regulating emotions such as potential

anxiety or excitement to ensure they are best able to plan effectively for the new class (Collie & Martin, 2016)

In describing the model, Martin, Nejad et al. (2012) refer to the lifespan theory of control (Heckhausen, Wrosch, & Schulz, 2010), which proposes that development across the lifespan is influenced by an individual's ability to play an active role in effectively adapting to the opportunities and constraints in the environment. A key factor in positive development is compensatory control, which refers to altering one's actions or thoughts to effectively respond to circumstances or events (Tomasik, Silbereisen, & Heckhausen, 2010). As this definition suggests though, the lifespan theory of control differs from the tripartite model in that it does not consider adjustments to emotions. Moreover, whereas the lifespan theory largely considers goal disengagement, the tripartite model is more specific in that it refers to adjustments in response to novelty, change, or uncertainty. Despite these differences, the lifespan theory of control and the concept of compensatory control provide a theoretical basis for understanding how adaptability functions (Martin, Nejad et al., 2012, 2013).

### 1.2.2. Differentiating adaptability from cognate constructs

In order to better understand adaptability, it is important to establish how it is distinct from cognate constructs such as self-regulated learning, resilience, coping, and self-efficacy. Self-regulated learning involves several phases of strategies undertaken to achieve one's goals (Winne & Hadwin, 2008). Models of self-regulated learning tend to culminate in an adaptation phase where the individual self-evaluates his/her performance and identifies cognitive and behavioral modifications necessary to improve in the future (e.g., Winne & Hadwin, 2008). This adaptation phase is related to adaptability. However, whereas self-regulated learning is broadly focused on academic or work tasks and demands, adaptability focuses specifically on individuals' capacity to employ strategies to effectively adjust in the face of novelty, change, and uncertainty (Martin et al., 2013). In that sense, adaptability has been positioned as a special case of self-regulation (Martin et al., 2013).

Turning to resilience, this has been conceptualized as a process, whereby teachers' responses to situations are influenced by a constellation of protective and risk factors (Mansfield, Beltman, & Price, 2014). Protective factors include personal factors such as self-efficacy and optimism, as well as contextual factors such as social support (Gu & Day, 2007; Mansfield et al., 2014). We suggest that adaptability is another personal protective factor that is relevant to resilience as a process, but is nonetheless a distinct construct. Coping refers to cognitive and behavioral efforts to manage difficult or challenging demands (Lazarus & Folkman, 1984). Thus, the focus on setback differentiates coping from adaptability, which is concerned with novelty, change, and uncertainty (Martin et al., 2013). Finally, whereas self-efficacy is focused on confidence regarding a future task, adaptability concerns the use of strategies to effectively navigate present and past experiences. Taken together,

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