



# Validity and reliability of questionnaire on perceived professional identity among teachers (QIPPE) scores



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## ABSTRACT

The purpose of this study was to develop and examine the psychometric properties of a Questionnaire on Perceived Professional Identity among Teachers (QIPPE), including three individual components (i.e., subject matter, didactical and pedagogical expertise) in the definition of teachers' professional identity. This study involved three steps: the development of a preliminary version; a first study to establish the factorial validity of the QIPPE scores and its reliability; and a second study to test the convergent validity of the QIPPE. Through three samples and based on multiple criteria for assessing model adequacy, the results provided evidence for a 2-factor, 11-item solution of the QIPPE, including one factor related to pedagogical expertise and another related to subject matter – didactical expertise, labelled 'subject matter expertise'. This questionnaire will be helpful for conducting longitudinal and quantitative research to estimate the reciprocal effects of perceived teachers' professional identity (TPI) and other related factors.

## 1. Introduction

As described by Hong (2010), teachers' professional identity (TPI) "is an important factor in understanding their professional lives and career decision making" (p. 1531). Teachers' perceptions of their own professional identity seem to affect their well-being, their efficacy and their professional development as well as their ability and willingness to cope with educational change and to implement innovations in their own teaching practice (Beijaard, Meijer, & Verloop, 2004).

Beijaard et al. (2004) classified three categories of studies on TPI: (a) studies with a focus on TPI formation, (b) studies with a focus on the identification of characteristics of TPI, and (c) studies with TPI (re) presented by teachers' stories. The results of prior studies are difficult to compare because of the lack of consensus around the definition of TPI. In addition, a number of studies on TPI are qualitative studies primarily based on the emerging theory of dialogical self in psychology (e.g., Akkerman & Meijer, 2011; Anspal, Eisenschmidt, & Löfström, 2012; Arvaja, 2016; Burns & Bell, 2011; Cohen, 2008; Curwood, 2014; Leijen & Kullasepp, 2013; Vloet & van Swet, 2010). To date, even if previous studies on TPI used questionnaires (Beijaard, Verloop, & Vermunt, 2000; Cheung, 2008; Ezer, Gilat, & Sagee, 2010; Pillen, Beijaard, & den Brok, 2013; Pillen, Den Brok, & Beijaard, 2013; Tan, Van der Molen, &

Schmidt, 2017; Zhang, Hawk, Zhang, & Zhao, 2016), they could not be used in this study for different reasons, which will be developed in a paragraph below. With a definition of TPI including three core expertise domains of teachers' professional work (subject matter, didactical expertise and pedagogical expertise), the purpose of the present study was to develop and validate a Questionnaire on Perceived Professional Identity among Teachers (QIPPE).<sup>1</sup>

## 2. Definition of teachers' professional identity

The concept of TPI has gained considerable attention in recent years, and it has emerged as a distinct research area (Stenberg, Karlsson, Pitkaniemi, & Maaranen, 2014). Nevertheless, it remains difficult to build a solid theoretical framework around TPI. In previous studies, TPI has been a poorly defined concept for a long time, and it is a concept with different meanings and definitions (Beijaard et al., 2000, 2004; Pillen & Beijaard et al., 2013; Pillen & Den Brok et al., 2013; Stenberg et al., 2014; Zhang et al., 2016; Zivkovic, 2016). The definition of TPI is complex, but there is general acknowledgment of its multifaceted and dynamic nature (e.g., Beijaard et al., 2004; Canrinus, Helms-Lorenz, Beijaard, Buitink, & Hofman, 2012). Beijaard et al. (2004) underlined the four following features as essential for TPI: (a) it

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<sup>1</sup> The French acronym for the questionnaire is QIPPE (Questionnaire sur l'Identité Professionnelle Perçue chez les Enseignants).

is an ongoing process of interpretation and re-interpretation of experiences, (b) it implies both person and context, (c) it consists of sub-identities that more or less harmonize, and (d) the agency, meaning that teachers have to be active in this process. TPI can also be seen as an answer to the following questions: “Who am I at this moment?” (Beijaard et al., 2004, p. 108) and “How do I see my role as a teacher?” (Cheung, 2008, p. 377).

Previous studies identified various personal key components of TPI without consensus: “this lack of an empirical and theoretical foundation has led researchers to try to identify major components that constitute teachers’ professional identity in relation to particular research emphases” (Hong, 2010, p. 1531). Notably, some authors chose to directly integrate influential factors in TPI components (e.g., Bukor, 2015; Stenberg et al., 2014). For example, based on a holistic perspective, Bukor (2015) concluded that teacher identity is deeply embedded in one’s personal biography (e.g., childhood and personal life experiences). From his point of view, participants’ beliefs and interpretations are rooted in their family environment and have an impact on their school experiences, career choices, instructional practice, teaching philosophy, and teacher identity. In the same vein, Stenberg et al. (2014) defined teacher identity as an ongoing process in which, through dialogue within various contexts and relationships, different teacher identities have their own voices and aims: I as a pedagogue, I as a didactical professional, I as a subject matter expert, I as a member of a school, I as a member of a society and so on. In the same vein, because of the lack of validated tools to measure TPI (Aydeniz & Kirbulut, 2014), some researchers have investigated how relevant indicators of teachers’ sense of their professional identity (e.g., job satisfaction, occupational commitment, professional orientation, task orientation, self-efficacy and change in level of motivation) are related (Canrinus et al., 2012; Canrinus, Helms-Lorenz, Beijaard, Buitink, & Hofman, 2011; Day, 2002; Hong, 2010; Lamote & Engels, 2010; Vloet & van Swet, 2010; Zivkovic, 2016).

From our point of view, it is important to distinguish associated psychological variables and influential factors from personal components of perceived TPI. Identity evolves constantly under the influence of a range of factors, including personal factors, such as emotion and life experiences (e.g., biography, learning history, and teaching experience), and contextual factors, such as teaching experiences in particular contexts (e.g., teaching context, relationships with colleagues and school directors, and school subject taught) (Beauchamp & Thomas, 2009; Beijaard et al., 2000; Biberman-Shalev, Sabbagh, Resh, & Kramarski, 2011; Bukor, 2015; EAUDE, 2014; Hsieh, 2015; Lamote & Engels, 2010; Pillen & Beijaard et al., 2013; Schepens, Aelterman, & Vlerick, 2009; Zembylas, 2003, 2005; Zivkovic, 2016).

In line with Beijaard et al. (2004), we argue for better conceptual clarity of TPI. We emphasize that teachers’ expertise is a relevant variable of their professional identity. Investigating teachers’ perceptions of the three expertise areas as the three core competencies of their professional work inform us about a relevant aspect of their professional identity. The choice of expertise as key component of TPI is useful for two main reasons.

First, expertise definition fits with the essential features of TPI (i.e., ongoing process, implying both person and context, domains of expertise and agency). Expertise generally refers to the special know-how that is related to different professions (Happo, Määttä, & Uusiautti, 2012). It embodies not only knowledge that informs but also skills and attitude for applying in practice (EAUDE, 2014; Elliott, 2015; Traianou, 2006). Traianou (2006) identified critical differences between expert and non-expert teachers in three dimensions: their ability to integrate aspects of teacher knowledge in relation the teaching acts, their response to their contexts of work, and their ability to engage in reflection and conscious deliberation. The development of expertise is a process of integration with the primary self (Percy, Martin-Beltrán, Silverman, & Daniel, 2015). Mieg (2009) identified two factors and conditions of expertise: excellence and professional engagement. It is worth noting

that teaching experience – and the practical knowledge derived from it – is a necessary but not sufficient condition to develop teacher expertise (Percy et al., 2015; Traianou, 2006; Winkler, 2001). Finally, teaching is multifaceted and complex, and different areas of teacher expertise can be discerned (Aydeniz & Kirbulut, 2014; Van der Zande, Akkerman, Brekelmans, Waarlo, & Vermunt, 2012).

Second, this personal expertise perspective of TPI has been already used by Beijaard et al. (2004) and is compatible with other TPI definitions, such as Tan et al.’s (2017) definition of professional identity development in professional education as “the self that has been developed with the commitment to perform competently and legitimately in the context of the profession” (p. 1505). In addition, the objectivation of personal TPI components in previous qualitative research has often been related to the variety of teachers’ roles (Beijaard et al., 2004; Cheung, 2008; Tan et al., 2017; Volkmann & Anderson, 1998): “professional identity exists as a complex and dynamic equilibrium where professional self-image is balanced with a variety of social roles teachers feel obliged to play” (Volkmann & Anderson, 1998, p. 296). In the same way, Cheung (2008) underlined that “one of the ways of understanding the professional identity of teachers is through teachers’ roles and practices” (p. 375).

Researchers do not yet agree on the different types of teacher knowledge in practice or domains of teacher expertise (Beijaard et al., 2000; Kansanen, 1999; Thomas & Thomas, 2012). To develop our questionnaire, we retain in this study three domains of expertise: pedagogical, didactical and subject matter expertise. Previous studies have shown a consensus on these three domains as teaching expertise or knowledge, sometimes with different labels (“subject matter,” “content knowledge” or “academic subject content” expertise; “pedagogical” or “interpersonal” expertise; and “didactical,” “pedagogical content” or “teaching and learning” expertise) (Kansanen & Meri, 1999; Beijaard et al., 2000; Elliott, 2015; Stenberg et al., 2014; Van der Zande et al., 2012; Zierer, 2015). These three domains of expertise are also present in the didactic triangle (Kansanen & Meri, 1999; Stenberg et al., 2014; Zierer, 2015), which is “one of the oldest didactic models, if not the oldest one of all” (Zierer, 2015, p. 788). In this vein, TPI can be “described in terms of the teacher as a subject matter expert, the teacher as a pedagogical expert, and the teacher as a didactical expert” (Beijaard et al., 2000, p. 750). Zierer (2015) concluded that “in order to give successful instruction, the teacher must possess subject matter competence, pedagogical competence, and didactical competence – and in practice all three go hand in hand” (p. 790).

First, subject matter expertise refers to the teacher’s knowledge of the content to be taught (Jegede, Taplin, & Chan, 2000; Kansanen & Meri, 1999; Shulman, 1987; Stenberg et al., 2014; Zierer, 2015) and to disciplinary knowledge that is unrelated to teaching (i.e., “content knowledge” of Shulman, 1987) (Elliott, 2015; Van der Zande et al., 2012). Second, didactical (or pedagogical content) expertise refers to the relationship between the students and the content in the didactic triangle (Kansanen & Meri, 1999; Stenberg et al., 2014; Zierer, 2015). It “concerns the way in which the learning process of the students about a particular subject matter can be facilitated by the teachers, e.g., by selecting appropriate teaching and learning activities” (Van der Zande et al., 2012, p. 1745; Van der Zande et al., 2012; Van der Zande et al., 2012, p. 1745). Teachers must choose adequate teaching and learning methods, such as group formation, organization of the classroom, didactic supports, and definition of goals and content in relation to the learning level of the students at the beginning of the lesson (Zierer, 2015). Shulman (1987) developed the term “pedagogical content knowledge”, which is considered one of the seven core areas of teacher knowledge (Hashweh, 2003; Husain, Hasan, Wahab, & Jantan, 2015; Jegede et al., 2000; Shulman, 1987), and associated it with an entire research tradition (Hashweh, 2003; Zierer, 2015). Notably, this expertise area contains not only knowledge but also attitudes, beliefs, and skills (Van der Zande et al., 2012). In addition, didactical expertise alone is just as insufficient as subject matter expertise alone (Zierer,

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