Asia Pacific Education Review (2019) 20:423–447
https://doi.org/10.1007/s12564-018-9561-6

Turkish prospective teachers' professional goals, beliefs about the attainability of these goals, identities, and possible selves

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Received: 4 April 2018 / Revised: 5 October 2018 / Accepted: 9 November 2018 / Published online: 19 November 2018

Abstract
This study examined the relationships among prospective teachers' (PTs) professional goals, their beliefs about the attainability of these goals, teacher identities, and teacher possible selves, with a particular focus on the mediating roles of teacher identities and teacher possible selves. A total of 2303 PTs from three large universities located in different regions of Turkey voluntarily participated in the study. Using an explanatory correlational research design, PTs were asked to complete various quantitative measures. Correlation, hierarchical regression, and structural equation modelling analyses were conducted to analyse the data in a comprehensive manner. The results showed that PTs' professional goals, their beliefs about the attainability of these goals, teacher identities, and expected teacher possible selves (ETPS) were significantly and selectively related to each other. The results also showed that PTs' teacher identities and expectations of learning to teach played significant mediating roles in the relationships between their professional goals and beliefs about the attainability of these goals. Overall, the results of the study suggest that, by considering the roles of teacher identity and ETPS, teacher educators and policy makers may better understand the factors potentially bridging the gap between professional goals and beliefs about the attainability of these goals.

Keywords Professional goals · Identity · Possible selves · Beliefs · Teacher education

Introduction

Students' goal orientations and their roles in academic achievement and motivation have long been examined in educational research (Kaplan and Maehr 2007; Payne et al. 2007; Schunk et al. 2008). Conversely, there has been little research on teachers' goal orientations (Mansfield et al. 2012; Skaalvik and Skaalvik 2013). This can be because the theories/models of teachers' goal orientations have only recently been developed (e.g. Butler 2007, 2012; Hagger and Malmberg 2011; Mansfield et al. 2012; Rüprich and Urhahne 2015). Albeit limited in number, recent studies have demonstrated that prospective teachers' (PTs)/teachers' goals include the crucial and diverse aspects of the teaching profession such as work avoidance (Butler 2007), behaviour management (Hagger and Malmberg 2011), social relations (Mansfield et al. 2012), and work–private life balance (Rüprich and Urhahne 2015).

These studies have also demonstrated that PTs'/teachers' professional goals significantly and selectively associate with well-being, burnout, help-seeking, efficacy beliefs, further training, reflection, and professional development (e.g. Butler 2007; Kunst et al. 2017; Nitsche et al. 2013; Parker et al. 2012; Runhaar et al. 2010). Accordingly, it is important to consider PTs'/teachers' professional goals in order to understand the factors influencing their motivations in educational settings such as schools and classrooms (Butler 2007; Retelsdorf et al. 2010) as well as to uncover the links between their professional commitment and goal orientations (Han et al. 2016).

Therefore, this study focuses on PTs' professional goals and examines their associations with crucial teaching-related variables: teacher beliefs, teacher identity, and teacher

This study is based on the first author's doctoral dissertation written under the direction of Dr. Altay Eren.

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possible selves. Specifically, the present study attempts to provide a comprehensive framework in which the links between PTs' professional goals, beliefs about the attainability of these goals, teacher identity, and both expected and feared teacher possible selves (FTPS) are discernible. Such a framework may help teacher educators and policy makers to develop a greater insight regarding the motivational roles of professional goals in teacher learning, achievement, professional development aspirations, and commitment to teaching, which are among the crucial problems concerning the teaching profession in many countries around the globe, including Turkey (Eurydice 2012; Organization for Economic Cooperation and Development [OECD] 2017). Given that teacher education programs aim to develop PTs with a strong professional identity (Meijer et al. 2014), the mentioned framework may also enable teacher education program developers to better identify the associates of PTs' professional identities (e.g. possible selves) and the role of teacher identity in linking professional goals to beliefs about the attainability of these goals.

Theoretical framework

Teacher professional goals

Goals can be defined as "mental representations of desired and undesired future states" (Penningroth and Scott 2008, p. 74; see also; Moskowitz 2012). As such, goals provide direction for thoughts, behaviours, and emotions (Schutz et al. 2001). The mentioned role of goals is particularly prominent in social learning and academic achievement contexts. Likewise, considerable research showed that students' educational goals, particularly the achievement goals (e.g. mastery goals, performance-approach goals, performance avoidance goals), significantly affected their motivation, engagement, and academic achievement in school settings (e.g. Kaplan and Maehr 2007; Schunk et al. 2008). Recently, educational researchers have also begun to examine teachers' achievement goals and described them similar to students' achievement goals (e.g. ability-approach goals, work avoidance goals) (Butler 2007; Kaplan and Maehr 2007; Mascret et al. 2017) based on the assumption that schools and classrooms not only constitute achievement contexts for students, but for teachers as well (Butler 2007). Relevant research showed that teachers' achievement goals were significantly and selectively related to burnout (Nitsche et al. 2013; Retelsdorf et al. 2010), self-efficacy, help-seeking (Butler 2007; Dickhäuser et al. 2007; Nitsche et al. 2011), interest in reflection and further training programs (Runhaar et al. 2010), and instructional quality (Butler 2012; Butler and Shibaz 2008; Retelsdorf et al. 2010).

It should be noted that both students' and teachers' goals orientations have largely been investigated based on the premises of achievement goal theory which provides "a framework for understanding the reasons why human beings typically engage in achievement-related behaviours" (Barron et al. 2006, p. 137; see, for more information; Elliot 1999). Indeed, achievement goal theory created a powerful framework to describe the potential benefits of unveiling purposes that underpin cognitions, behaviours, and emotions of teachers in the teaching/classroom context (Butler 2007; Dickhäuser et al. 2007; Papaioannou and Christodoulidis 2007; Retelsdorf et al. 2010; Retelsdorf and Günther 2011). However, as Boekaerts et al. (2006, p. 34) argued, "achievement goals are just a fraction of the goals" should not be seen as the unique driving force pursued in classrooms. This and similar arguments (e.g. Mansfield et al. 2012) have recently provoked a bundle of research that benefited from a focus on the contents of teacher goals, including not only goals relevant to the school and classroom contexts but also those that reflect broader life desires (e.g. social goals, future goals, and wellbeing goals) (Mansfield et al. 2012; Mansfield and Beltman 2014).

For example, Lemos (1996) suggested seven diverse goal orientations: enjoyment, learning, complying, working, evaluation, relationship, and discipline. Ng (2010) investigated teachers' career-related goals (i.e. professional learning goals and extrinsic career goals) with respect to their learning engagement, and confirmed the importance of professional learning goals in teachers' engagement in learning. Niikko and Ugaste (2012) described the goals of preschool teachers from Finland and Estonia, and found that teachers' goals included the challenging and diverse aspects of the teaching profession such as co-operation with families, teamwork with colleagues, and professional development. Hagger and Malmberg (2011) examined PTs' professional goals and found that the contents of their goals contained socio-emotional (e.g. student engagement, relationships with students) and technical aspects of the teaching profession (e.g. subject knowledge, planning and organization) along with self and aspirations for self-related issues (e.g. emerging nervousness, cross-occupational stress). More recently, based on the qualitative work of Hagger and Malmberg (2011), Rüprich and Urhahne (2015) developed a larger framework in which teachers' and PTs' professional goals were described through 13 different, yet interrelated categories (e.g. planning and organization, work and private life).

In the aforementioned studies, teachers' goals were described based on the diverse aspects of their professional lives, which is more appropriate to the nature of the teaching profession because the nature of the profession is both complex and challenging (Feiman-Nemser 2008). This is particularly true for Rüprich and Urhahne's (2015) framework of teachers' goal orientations because it captures both

challenging and highly relevant aspects of the teaching profession such as subject-related (e.g. subject knowledge) and career-related aspects (e.g. professional development aspirations). Thus, in the present study, Rüprich and Urhahne's (2015) framework was adopted to examine PTs' professional goals.

Teacher identity

The concept of identity can be described as the recognition by self or others as "a certain kind of person in a given context" (Gee 2001, p. 99). Earlier studies characterised 'identity' as a singular, fixed, stable, and decontextualized attribute that was fairly independent from the external environment (e.g. Cooley 1902), whereas contemporary theories emphasised that the notion of identity is multi-layered, multifaceted, dynamic, and constantly being re-constituted over time through social interactions (e.g. Erikson 1968; Flores and Day 2006; Rodgers and Scott 2008; Tajfel 1982).

Aligning with recent conceptions of identity, professional identity has emerged as a distinct research area, especially in teacher learning and development (Beijaard et al. 2004; Beauchamp and Thomas 2009; Izadinia 2013). Interest in the development of teachers' professional identity has substantially increased in recent years (e.g. Beauchamp and Thomas 2009; Beijaard et al. 2000, 2004; Flores and Day 2006). The results of studies conducted in different countries showed that teachers' professional identity could be considered as a key factor in teachers' sense of purpose, self-efficacy, commitment to teaching, motivation, effectiveness and retention (Avalos and Aylwin 2007; Day et al. 2005, 2006; Lasky 2005; Van den Berg 2002). These studies also showed that the development of a professional identity could promote teachers' educational philosophy, decision-making, well-being, and effort (Beijaard et al. 2004; Hammerness et al. 2005; Mockler 2011; Sammons et al. 2007). Hence, teachers' professional identity is widely acknowledged that it stands at the core of the teaching profession and serves as a framework for teachers to construct their own ideas of "how to be", "how to act" and "how to understand" their work and place in society (Sachs 2001, p. 15).

Moreover, teachers' professional identity has been variously theorised and operationally defined in the relevant literature (Beijaard et al. 2004), implying that the developmental course of a teacher identity is poorly understood (Friesen and Besley 2013). Based on the systematic investigation of 22 studies on teacher identity, Beijaard et al. (2004) found that over half of these studies failed to provide a clear definition of teacher identity. Recently, Izadinia (2013) examined 29 empirical studies pertaining to PTs' identities, and found that these studies failed to incorporate a realistic and sophisticated understanding of teacher identity formation into teacher education. Notably, both Beijaard et al. (2004) and Izadinia (2013) reported that majority of the teacher identity studies were small qualitative projects in which systematic comparisons between the aspects of teacher identity were not conducted. Psychological and/or sociological perspectives were not also considered in majority of these studies.

Thus, Friesen and Besley (2013) relied on Erikson's (1964) theory of identity development and Turner et al. (1994) self-categorisation theory in order to examine first-year PTs' teacher identity based on the developmental and social psychological perspectives. The results revealed the potential value of these perspectives to describe teacher identity in a comprehensive manner, and demonstrated that PTs' teacher identity could be reliably assessed through the single-factor model of teacher identity. Consequently, in the present study, the single-factor model of teacher professional identity was adopted to examine PTs' initial teacher identity.

Teacher possible selves

Self-concept traditionally refers to "the summary of the individual's self-knowledge related to how the person views him/herself at present" (Dörnyei 2009, p. 11). Indeed, there is an extant literature on the self-concept and self-representation (e.g. Demo 1992; Higgins 1987; Markus 1983). Among the first to contribute a 'cogent self' construct was Markus and Nurius (1986) who conceptualised the future aspect of the self within a comprehensive theoretical framework in which both expected and FTPS were evident. Specifically, possible selves theory describes notions of what one would like to become (i.e. hoped-for selves) and what one is afraid of becoming (i.e. feared selves) (Markus and Nurius 1986). These notions are not only cognitive, but also affective as they include expectations, aspirations, hopes, and fears of what one will achieve and become, and function as incentives that inform and guide judgments about the direction of individuals' current behaviours (Cross and Markus 1991; Markus and Nurius 1986; Markus and Ruvolo 1989). Therefore, possible selves theory provides a basis for identity development by encouraging individuals to think about who they are and who they want to become (Dunkel and Anthis 2001).

Possible selves theory also provides a versatile framework for a wide variety of research interests such as adult ageing, parenting, educational aspirations, and career counselling (Day et al. 1994; Frazier et al. 2002; Hooker et al. 1996; Meara et al. 1995). Considerable research showed that teachers could construe and construct their identity and professional roles by recognising their possible selves (Conway and Clark 2003; Fletcher 2000; Hamman et al. 2010; Hong and Greene 2011; Ronfeldt and Grossman 2008; Shoyer and Leshem 2016). For example, Fletcher (2000) applied possible selves theory to teacher identity emerging from mentoring relationships between

the university supervisors and PTs, and described how teacher possible selves can be transformative by imagining a specific goal for oneself as a teacher in the future (e.g. teacher-as-caring). Conway and Clark (2003) examined changes in PTs' possible selves during practicum, and found that both hoped-for (e.g. caring teacher) and feared selves (e.g. unprepared teacher) were prevalent throughout the practicum process, and the focus of PTs' possible selves shifted from 'survival' to 'self-development'. Recently, Shoyer and Leshem (2016) examined PTs' hopes and fears about their future career as teachers. The results showed that PTs expressed more hopes than fears, and their hopes and fears were associated with characteristics of the good teacher and qualities of effective teaching.

Possible selves theory has been also used to gain a deeper insight into teacher motivation (e.g. Cardelle-Elawar et al. 2007; Hiver 2013; Sahakyan et al. 2018). Most of these studies focused on PTs' hoped-for and feared selves at various phases of their teaching practice. For example, Hiver (2013) recently found that teachers' ideal and ought-to teacher selves in relation to their mastery of English provided the main motives for voluntary engagement in professional development. More recently, Sahakyan et al. (2018) examined how language teachers were motivated in their work by their ideal and ought-to self-images at different phases of their careers, and found that instead of forming distinct ideal, ought-to and feared selves, the teachers constructed a balanced self-concept (i.e. realistic and attainable self-concept) which was a synthesis of various possible self-components and mostly derived from the teachers' earlier experiences. They also reported that the context-specific nature of the feasible teacher-self strongly motivated language teachers to exert more effort in their work.

The abovementioned studies highlight the significant roles of expected selves and feared selves in teacher development. However, these studies almost entirely relied on open-ended response measures and interviews outlining the dimensions of the context-embedded possible selves (Kerpelman 2006), signifying that the generalizability of the results of these studies was highly limited. In order to address this limitation, Hamman et al. (2013) recently developed a questionnaire (i.e. New Teacher Possible Selves Questionnaire-NTPSQ) to assess PTs'/teachers' possible selves comprehensively. Specifically, the NTPSQ captures both expected teacher possible selves (ETPS) and FTPS scales. ETPS scale consists of two factors (i.e. professionalism and learning to teach), whereas FTPS scale includes three factors (i.e. uninspired instruction, loss of control, and uncaring teacher), each of which underlines the challenging and diverse aspects of the teaching profession. Thus, in the present study, the NTPSQ was used to examine PTs' possible selves in a comprehensive manner.

Teacher beliefs

Beliefs can be described as "psychologically held understandings, premises, or propositions about the world that are felt to be true" (Richardson 1996, p. 103). Indeed, beliefs are comprehensive and dynamic structures that act as filters through which new knowledge and experiences are interpreted/reinterpreted (Pajares 1992), and thereby guide, influence, and shape individuals' intentions to act in a certain way (Hancock and Gallard 2004). Beliefs have long been recognised as the best indicators of the decisions people make throughout their lives and the way they implement these decisions (Bandura 1986; Maloch et al. 2003; Rokeach 1968). Hence, PTs'/teachers' beliefs may offer a deeper insight into the processes that guide their pedagogical decisions and actions in classroom settings (Levin and He 2008; Pajares 1992; Pham and Hamid 2013).

Specifically, teachers' beliefs refer to the subjective ways of identifying characteristics of students, nature of learning, and recognising their roles in assisting students to achieve educational objectives (Kagan 1990). It has long been acknowledged that teachers' beliefs influence their teaching-related decisions and are important indicators of their professional preparation and teaching practices (Nespor 1987; Pajares 1992). However, it was not until the 1970s that the significance of teachers' beliefs was clearly emphasised in the relevant literature. Since then, a large body of research examined teachers' beliefs based on diverse methodological and theoretical frameworks (e.g. Fang 1996; Pajares 1992). Overall results of these studies demonstrated that teachers possess a vast array of beliefs that have strong effects on their burnout, resistance to change, commitment to teaching, drop out, and professional values (e.g. Evers et al. 2002; Ghaith and Yaghi 1997; Haney et al. 2002; Wheatley 2002).

In addition, there is cumulating evidence showing that teachers' beliefs significantly affect their teaching practices (e.g. lesson planning, relationships with students). For example, Farrell and Lim (2005) compared beliefs and actual classroom practices of two experienced English language teachers with regard to grammar teaching in a primary school setting. The teachers noted a strong sense of convergence between their beliefs and actual classroom practices. Although the consonance between teacher beliefs and practices have been well documented, several studies provide evidence that there is also a dissonance between teachers' beliefs and their teaching practices in a sense that teachers do less than they claim (e.g. Eren 2010; Ertmer 2005; Leatham 2006; Pham and Hamid 2013; Sahin et al. 2002). For example, McMullen (1999) demonstrated that teachers engaged with significantly less appropriate teaching practices although they reported that they tended to do so. Similarly, Ertmer (2005) showed that although teachers reported that they had high technological ability and access

to technology, they did not use technology for higher-level teaching tasks during lessons. Eren (2010) demonstrated that PTs valued constructivist teaching practices, making learning explicit, and promoting learning autonomy more than they practised, whereas they practised traditional teaching practices and performance orientation more than they valued. As Galman (2009) argued, such kinds of dissonances between teachers'/PTs' beliefs and practices might have negative consequences such as leading teachers to leave the profession, but might also have positive consequences such as motivating teachers to question their beliefs or practices.

The results of the abovementioned studies reveal that teachers' beliefs are not always in line with their teaching-related practices. This indicates that to consider possible dissonances between teachers'/PTs' professional beliefs and practices together with variables that potentially explain the mentioned dissonances may lead one to better understand what motivates teachers/PTs to act or not to act in line with their beliefs. Although this issue has not been investigated in terms of teachers'/PTs' professional goals, these explanations would equally be true for their professional goals given the future-oriented nature of teachers'/PTs' professional goals. Thus, in the present study, PTs' professional goals were examined together with their beliefs about the attainability of these goals in order to reveal potential consonances and/or dissonances between the mentioned professional goals and beliefs, by taking possible intervening roles of teacher identity and teacher possible selves into account.

The present study

Although previous studies provide valuable insights into the roles of teachers'/PTs' professional goals (e.g. Mansfield and Beltman 2014), they do not provide evidence regarding the consonance and/or dissonance between PTs' professional goals and beliefs about the attainability of these goals. However, based on the aforementioned studies and explanations, it makes sense to argue that having particular professional goals does not guarantee to believe that these goals are attainable in the future. In fact, the premises of expectancy value theory of motivation support this argument (Eccles 1983; Wigfield and Eccles 2000). Specifically, the theory affirms that individuals' willingness to exert effort on a task can be conceptualised as a function of "(a) the degree to which they expect to succeed at the task, and (b) the degree to which they value the task and value success on the task" (Green 2002, p. 990). Thus, it is reasonable to consider PTs' professional goals together with their beliefs about the attainability of these goals because PTs' motivations to attain professional goals may more or less depend on their expectancies/beliefs about the attainability of these goals. Consequently, gaining a deeper insight into the relationships between PTs' professional goals and their beliefs about the attainability of these goals may broaden the current understanding regarding the motivational roles of professional goals, which, in turn, may shed more light on the important aspects of the teaching profession such as commitment to teaching.

Furthermore, as mentioned in the "Introduction" section, teachers'/PTs' teacher identities are highly central to their professional goals. For example, Enyedy et al. (2006) examined two teachers' identities in relation to their goals and beliefs, and concluded that these teachers' identities were precursors to their goals, beliefs, and knowledge. Relevant research also showed that teachers'/PTs' identities were significantly related to their professional goals (e.g. Day et al. 2006; Hong 2010; Schutz et al. 2007). Similar to teacher identity, teachers'/PTs' possible selves also influence their current goal-directed thinking process and the salience of that thinking process for regulating behaviour to reach a future state (Hamman et al. 2010). As such, possible selves exert a motivational influence (Strahan and Wilson 2006) on individuals with foresight of what they want to become, so that they may be more likely to persevere when pursuing their goals and aspirations (Hamman et al. 2010, 2013).

Thus, although this issue has not been examined in a single study to date, it is reasonable to investigate the possible mediating roles of teacher identity and possible selves in the relationships between professional goals and beliefs about the attainability of these goals for at least two reasons. First, teachers' professional goals and beliefs about teaching are continuously shaped/reshaped in the process of becoming a teacher (Day et al. 2006; Korthagen 2004). Second, teachers, particularly the PTs, are accustomed to considering about their professional future in terms of the instructional objectives, curriculum standards, and their professional aspirations and identities (Hamman et al. 2013). Accordingly, PTs' professional identities and possible selves may act as cognitive and/or affective filters based on which PTs evaluate/re-evaluate their professional goals and attainability of these goals within the range of their possible professional future horizons. Gaining a better understanding of how PTs describe themselves as 'teachers' together with their perceptions about what types of teachers they hope to become or fear to become may enable teacher educators and policy makers to identify the major sources of possible dissonances/consonances between PTs' professional goals and beliefs more accurately and encourage them to develop effective strategies/policies accordingly. In turn, this may facilitate the translation of PTs' professional goals into more realistic intentions/plans and effective teaching-related actions during teacher education (Markus and Ruvolo 1989).

Therefore, the current study aims to investigate the relationships among PTs' professional goals, their beliefs about the attainability of these goals, teacher identities, and possible selves, with a particular focus on the mediating roles of

teacher identities and possible selves. Three research questions are formulated accordingly: (a) Do PTs' professional goals, their beliefs about the attainability of these goals, teacher identities, and possible selves significantly relate to each other? (b) Do PTs' professional goals, teacher identities, and possible selves significantly predict their beliefs about the attainability of these goals? (c) Do PTs' teacher identities and possible selves play significant mediating roles in the relationships between their professional goals and beliefs about the attainability of these goals? No specific hypotheses are suggested due to the exploratory nature of the current study.

Method

In line with the aim of the current study, explanatory correlational design was adopted to examine the relationships between the research variables in an inductive manner. Explanatory correlational design is often used to uncover the degree of relationships between two or more variables at a single point in time when there is little or no evidence for the relationships between the research variables (see, for more explanation, Creswell 2012; Fraenkel et al. 2012; Gay et al. 2014).

Context and participants

In Turkey, teacher education is offered as 4-year bachelor degree programs by the faculties of education of the universities since the establishment of the Council of Higher Education (CoHE) in 1981 (Çakıroğlu and Çakıroğlu 2003). Recently, 1-year certificate programs in teaching have also been offered to graduate and final-year students of diverse fields of study such as business administration and mathematics (Erarslan and Çakıcı 2011) in order to attract more teacher candidates from diverse fields of study.

The CoHE is fully responsible for the accreditation and standardisation of the teacher education programs. Due to the highly centralised nature of the teacher education programs in Turkey, all PTs need to take a number of field-specific courses (e.g. linear algebra) in addition to pedagogical courses (e.g. educational psychology), regardless of the level they teach or their fields of study. Furthermore, PTs also take compulsory practicum courses (i.e. teaching practice) during which they are assigned to local state-run primary and secondary schools in order to conduct observations and teaching (Eren and Yeşilbursa 2017). On completion of teacher education, teachers are appointed to state schools by means of a centralised selection examination entitled Public Personnel Selection Examination (Yüksel 2012).

This study was carried out based on a sample of PTs in 4-year degree programs because they find more opportunity to develop their professional goals due to the massive difference between the durations of 4-year degree programs and 1-year certificate programs. Specifically, a total of 2303 PTs (1751 female, 552 male), majoring in science ($n=462$), mathematics ($n=378$), special education ($n=124$), preschool ($n=461$), English language ($n=441$), and Turkish language teaching ($n=437$), were randomly sampled from the faculties of education (approximately 4840 PTs) of three large universities located in the Marmara region, the Mediterranean region, and the northwest of the Black Sea region in Turkey. With an average age of 20.28 (SD = 1.89), the sample consisted of 567 first-year, 617 second-year, 633 third-year, and 486 final-year PTs.

Since 2003, Turkey has been participating in various international student assessment programs such as the Programme for International Student Assessment (PISA) and Education First English Proficiency Index (EF-EPI) in order to track students' academic progress in terms of diverse learning domains such as reading, mathematics, science, and English as a foreign language. The results of these international assessments strongly highlight the necessity of increasing teaching and teacher quality in terms of the mentioned domains. The same is also true for pre-school teaching and special education teaching majors (Ministry of National Education [MoNE] 2013). Therefore, the present study was conducted based on a sample of PTs from science, mathematics, special education, preschool, English language, and Turkish language teaching majors.

It can be said that the sample of the study is highly representative in terms of the typical characteristics of Turkish PTs because the results of a large-scale survey study conducted by Aksu et al. (2010) demonstrated that Turkish PTs mostly come from middle or lower socio-economic status families with low levels of education and relatively low-status professions. The results also showed that Turkish PTs have similar motivations for choosing the teaching profession (e.g. intrinsic career value, job security, flexible working hours, and long holidays), report high levels of commitment to teaching, and mostly hold progressive pedagogical beliefs.

Research instruments

Using the maximum likelihood method of estimation and percentile bootstrap method from AMOS 24 (Arbuckle 2016), a series of confirmatory factor analyses (CFAs) were conducted to examine whether the factor structure of the research instruments would be confirmed in the present sample in terms of robust fit indices (i.e. Comparative Fit Index-CFI ≥ 0.90; Tucker–Lewis Index-TLI ≥ 0.90; Standardised Root Mean Square Residual-SRMR ≤ 0.08; Root Mean Square Error of Approximation-RMSEA ≤ 0.08) (Kline

2011). Cronbach's coefficients alphas were also computed to assess the internal reliability of the research instruments.

The questionnaire for the assessment of teacher goals

The Questionnaire for the Assessment of Teacher Goals (Q-ATG; Rüprich and Urhahne 2015) was used to assess PTs' professional goals. The questionnaire contains 13 factors: teacher engagement, relationship with colleagues, teaching strategies, individual differences, student engagement, relationship with students, subject knowledge, planning and organization, learning impact, behaviour management, personal goals, career, and work and private life. Each factor consists of four items. According to Rüprich and Urhahne (2015), these factors can be also defined by three diverse, yet interrelated second-order factors: socio-emotional goals, task-related goals, and self-related goals. In the present study, the items in the questionnaire were translated into Turkish by the researchers, following the guidelines of the Translation, Review, Adjudication, Pretesting, and Documentation (TRAPD) team translation model (see, for more information, Harkness et al. 2010). A five-point response scale, ranging from 1 (I definitely aspire to) to 5 (I definitely do not aspire to), was used in the present study.

Both the second-order and the first-order factor models were examined in the analyses. Specifically, in the second-order factor model, 13 first-order factors were allowed to predict by their second-order latent factors (i.e. socio-emotional goals, task-related goals, and self-related goals), whereas, in the first-order factor model, first-order factors were freely estimated regardless of the effects of the second-order factors. The results of CFAs demonstrated that the first-order factor model ($\chi^2(1196) = 5018.55$, $p < .001$; CFI = 0.904; TLI = 0.894; SRMR = 0.043; RMSEA = 0.037) had better fit to the data than the second-order factor model ($\chi^2(1258) = 5667.65$, $p < .001$; CFI = 0.890; TLI = 0.884; SRMR = 0.040; RMSEA = 0.039). Likewise, changes in robust fit indices ($\Delta\chi^2(\Delta df)$, $p < .05$; $\Delta CFI > 0.01$) were also significant (Cheung and Rensvold 2002; $\Delta\chi^2(\Delta df = 1) = 649.11$, $p < .001$; $\Delta CFI = 0.014$), indicating that the first-order factor model was more favourable than the second-order factor model in the present sample.

On the other hand, the results also showed that one item (i.e. in my job as a future teacher, I aspire to achieve a very good income) was weakly predicted ($\beta < 0.30$) by the latent factor (i.e. career). Therefore, the mentioned item was omitted from the questionnaire, which considerably improved the model fit ($\chi^2(1143) = 4167.64$; CFI = 0.924; TLI = 0.915; SRMR = 0.037; RMSEA = 0.034). With Cronbach's coefficients alpha ranging from 0.62 to 0.82, internal reliabilities of the subscales were adequate in the current sample.

The questionnaire for the assessment of teacher beliefs about the attainability of teacher goals

The Q-ATG was reorganised as a belief scale by the researchers and labelled as the Questionnaire for the Assessment of Teacher Beliefs about the Attainability of Teacher Goals (Q-ATB). All items in the Q-ATG were slightly modified in order to enable PTs to express their beliefs about the attainability of professional goals by taking the corresponding professional goals into account. Thus, an item in the work and private life subscale (i.e. in my job as a future teacher, I aspire to achieve a balance between work and private life), for example, was read as 'in my job as a future teacher, I believe I will achieve a balance between work and private life'.

A five-point response scale, ranging from 1 (I definitely believe) to 5 (I definitely do not believe), was used for the Q-ATB. Similar to the results of the Q-ATG, the results of CFA showed that the first-order factor model had good fit to data ($\chi^2(1143) = 5018.26$; CFI = 0.925; TLI = 0.916; SRMR = 0.040; RMSEA = 0.038). With coefficients ranging from 0.69 to 0.83, internal reliabilities were satisfactory for each Q-ATB subscale.

Common method variance

It is important to note that the data regarding the PTs' professional goals and beliefs about the attainability of these goals were collected from the PTs simultaneously. This indicates that the data regarding the PTs' professional goals and beliefs about the attainability of these goals may suffer from common method variance which refers to "variance that is attributable to the measurement method rather than to the constructs the measures represent" (Podsakoff et al. 2003, p. 879). Thus, by allowing the latent variables of Q-ATG and Q-ATB to associate with each other, an additional CFA was conducted to examine whether the latent variables were empirically discernible in the present sample. The results showed that the latent variables were empirically distinguishable ($\chi^2(4666) = 12117.41$; CFI = 0.939; TLI = 0.932; SRMR = 0.037; RMSEA = 0.026), indicating that possible variances regarding the factors of Q-ATG and Q-ATB can be explained based on the constructs the measures represent rather than the measurement method.

New teacher possible selves questionnaire

New Teacher Possible Selves Questionnaire (NTPSQ; Hamman et al. 2013) was used to assess PTs' possible selves. The questionnaire contains two separate scales: ETPS and FTPS. The ETPS scale consists of nine items represented with two factors: professionalism (five items: e.g. during my first year of teaching, I expect to be fair and consistent to my

students) and learning to teach (four items: e.g. during my first year of teaching, I expect to learn new teaching strategies). The FTPS scale consists of nine items represented with three factors: uninspired instruction (e.g. realistically, I fear that during my first year of teaching, I might be a boring teacher), loss of control (e.g. realistically, I fear that during my first year of teaching, I might not have a good classroom management plan), and uncaring teacher (e.g. realistically, I fear that during my first year of teaching, I might treat students unfairly).

The items in the questionnaire were translated into Turkish by the researchers, following the guidelines of the TRAPD team translation model (Harkness et al. 2010). Items in the scales were slightly modified in order to enable PTs to rate their responses with their future status in mind (i.e. teacher). Specifically, items in the ETPS commenced with the statement of "during my first year of teaching" and items in the FTPS commenced with the statement of "realistically, I fear that during my first year of teaching". Unlike the original questionnaire, a five-point response scale, ranging from 1 (not at all) to 5 (to a great extent), was used for the ETPS and FTPS in order to facilitate reliable comparisons across the research instruments.

The results of CFA showed that the two-factor model with nine items (i.e. ETPS) had good fit to the data ($\chi^2(25) = 247.61$; CFI = 0.974; TLI = 0.962; SRMR = 0.030; RMSEA = 0.062). Internal reliabilities of the professionalism and learning to teach subscales were computed as 0.83 and 0.79, respectively. Likewise, the three-factor model with nine items (i.e. FTPS) had also good fit to the data ($\chi^2(24) = 217.46$; CFI = 0.984; TLI = 0.976; SRMR = 0.027; RMSEA = 0.059). With coefficients ranging from 0.81 to 0.88, internal reliabilities of the FTPS subscales were also satisfactory.

The early teacher identity measure

The Early Teacher Identity Measure (ETIM; Friesen and Besley 2013) was used to assess PTs' initial teacher identity. The ETIM was adopted into Turkish by Arpacı and Bardakçı (2015) in a previous research study. Similar to the results of Friesen and Besley's (2013) study, the results of Arpacı and Bardakçı's (2015) study also demonstrated that the ETIM could be reliably conceptualised as a single-factor scale with 17 items (e.g. I often doubt my ability to be a good teacher). A five-point response scale, ranging from 1 (strongly disagree) to 5 (strongly agree), was used for the ETIM.

The results of CFA showed that the single-factor model with 17 items had acceptable fit to the data ($\chi^2(111) = 1282.59$; CFI = 0.923; TLI = 0.906; SRMR = 0.050; RMSEA = 0.068). Cronbach's coefficient alpha was computed as 0.90 and deemed highly satisfactory.

The life orientation test-revised

The Life Orientation Test-Revised (LOT-R; Scheier et al. 1994) was used to control for the PTs' possible optimistic bias in relation to their future teaching. Indeed, it has long been acknowledged that individuals are unrealistically optimistic about the future (Weinstein 1980). The LOT-R is a single-factor scale with six items (e.g. I'm always optimistic about my future) and was translated into Turkish by Eren and Yeşilbursa (2017). PTs responded to the items of the LOT-R on a five-point response scale which ranged from 1 (strongly disagree) to 5 (strongly agree). The results of CFA showed that one item (i.e. in uncertain times, I usually expect the best) was weakly predicted ($\beta < 0.30$) by the latent factor (i.e. optimism). Therefore, this item was omitted from the LOT-R. The results showed that the one-factor model with five items had good fit to the data ($\chi^2(4) = 12.32$; CFI = 0.997; TLI = 0.993; SRMR = 0.010; RMSEA = 0.030). Cronbach's coefficient alpha was computed as 0.78 and deemed adequate.

The good impression scale

The Good Impression Scale (GIS; Özer 2005) was also used to control for the possibility of making a good impression among the PTs because the research instruments (e.g. NTPSQ, ETIM) consist of many items that are more or less open to the effects of social desirability. The GIS is a single-factor scale with 10 items (e.g. I curse). PTs responded to the items of the GIS on a five-point Likert-type scale ranging from 1 (never) to 5 (always). The results of CFA revealed that three items (e.g. I follow the advice I give to others) had low parameter estimations ($\beta < 0.30$). Thus, the CFA was rerun by omitting these items. The results showed that the one-factor model with seven items had good fit to the data ($\chi^2(13) = 161.63$; CFI = 0.951; TLI = 0.921; SRMR = 0.041; RMSEA = 0.070). Cronbach's coefficient alpha was computed as 0.74 and deemed acceptable.

Procedure

The data were collected during the fall semester of the 2016–2017 academic year by the first author. The research instruments were applied to the PTs who were volunteered to participate in the study ($n = 2303$; participation rate = 88%). The research instruments were applied along with demographic questions (e.g. gender, year of study) during one of the regular class hours. Furthermore, all research instruments were presented to the PTs with clear instructions and brief explanations about how to respond to the items in the research instruments. When necessary, further explanations were also provided and any questions from the PTs were answered. The administration process lasted approximately

30 min. At the end of the administration process, the PTs were fully debriefed and thanked for their participation in the study. Ethical approval was obtained from the Institutional Review Board of one of the universities involved in the current study.

Data analysis

Before addressing the research questions, first, a series of univariate analyses of covariance (ANCOVA), multivariate analyses of covariance (MANCOVA) and subsequent analyses of variance (ANOVA) were conducted to examine the possible effects of demographic variables (i.e. gender, university, fields of study, and year of study) on the research variables. In the analyses, optimism and making a good impression scales and age were considered as covariate variables. Given that the *p* values are more sensitive to sample size than the effect size measures such as the partial eta-squared (η^2_p) (Ferguson 2009), and also given that significant *p* values are likely to be found in large samples even when the magnitudes of effect size measures are negligible (Sullivan and Feinn 2012), the η^2_p values were considered to evaluate the importance of the multivariate and univariate effects of the demographic variables. The results of the analyses demonstrated that the effects of demographic variables on the research variables were negligible (all $\eta^2_p \leq 0.03$; Richardson 2011). Thus, they were not included in the further analyses. However, the effects of optimism ($\eta^2_p = 0.10$) and making a good impression ($\eta^2_p = 0.06$) on teacher identity were substantial, signifying that the optimistic bias and making a good impression were salient in PTs' responses to the items in the ETIM. Thus, the effects of optimism and making a good impression on teacher identity were consistently controlled in the later analyses.

For the first research question, by controlling the effects of optimism and making a good impression, a partial correlation analysis was conducted to examine the relationships between the research variables. For the second research question, a series of hierarchical regression analyses were conducted. The variables that were substantially ($r \geq .30$) associated with other research variables were included in the regression analyses because even the negligible correlation coefficients can be statistically significant in large samples. In the first regression analysis, professional goals were determined as the independent variables whereas teacher identity and possible selves were determined as the dependent variables. In the second analysis, professional goals were determined as the independent variables, whereas beliefs about the attainability of professional goals were determined as the dependent variables. In the third analysis, professional goals, teacher identity, and possible selves were determined as the independent variables, whereas beliefs about the attainability of professional goals were determined as the dependent variables. Semi-partial correlation coefficients (r_{sp}) were also computed to examine the unique effects of the independent variables on PTs' beliefs about the attainability of their professional goals (Cohen and Cohen 1983; Tabachnick and Fidell 2013). Semi-partial (or part) correlations give "a measure of how much 'new variance' in the outcome can be explained by each remaining predictor" (Field 2009, p. 213).

Based on the results of correlation and regression analyses, a structural model was created and tested by conducting structural equation modelling (SEM) analysis. The independent variables that explained considerable amount of the remaining variance ($r_{sp} \approx .10$ or bigger; Eren and Coskun 2016) in the dependent variables were included in the analysis because weak relationships between the research variables can increase the Type I error rates by artificially inflating the parameter estimations in the model (Kline 2011; Meyers et al. 2006). In addition, to control for the possible Type I error rates which may appear as consequence of conducting numerous statistical analyses based on the same sample, all correlation, regression, and SEM analyses were conducted on the basis of 1000 bootstrap sample by using the percentile bootstrap method (Preacher and Hayes 2008).

Results

Correlation analysis

The results of partial correlation analysis are presented in Table 1. As shown in Table 1, with correlation coefficients ranging from .31 to .47, professional goals and beliefs about the attainability of these goals were positively and moderately related to teacher identity. Similarly, professional goals and beliefs about the attainability of these goals were also moderately and positively related to ETPS. However, professional goals and beliefs about the attainability of these goals were weakly and negatively related to FTPS with one exception (Table 1). In addition, beliefs about the attainability of personal goals were moderately and negatively associated with loss of control. The results of correlation analysis also showed that teacher identity was moderately and positively related to ETPS, whereas it was weakly and negatively related to FTPS.

Moreover, with correlation coefficients ranging from 0.51 to 0.66, the relationships between professional goals and beliefs about the attainability of these goals were strong and positive with two exceptions. Specifically, work and private life goals were moderately related to beliefs about the attainability of these goals ($r = .46$). Intriguingly, planning and organization goals were perfectly correlated with beliefs about the attainability of these goals ($r = 1.00$). This indicates a singularity which refers to the perfect correlation between two or more variables. Nevertheless, this result can

Table 1 Partial correlation coefficients

Variable	TE_g	RwC_g	TS_g	ID_g	SE_g	RwS_g	SK_g	P&O_g	LI_g	BM_g	Ca_g	PG_g	W&PL_g	TID	PR	LT
TE_g	1															
RwC_g	.37	1														
TS_g	.49	.38	1													
ID_g	.45	.39	.57	1												
SE_g	.51	.37	.55	.58	1											
RwS_g	.44	.37	.50	.58	.62	1										
SK_g	.42	34	.48	.45	.51	.48	1									
P&O_g	.38	.29	.35	.33	.38	.33	.45	1								
LI_g	.36	.27	.39	.38	.43	.40	.51	.37	1							
BM_g	.28	.31	.25	.30	.33	.32	.39	.33	.50	1						
Ca_g	.38	.28	.43	.37	.40	.36	.52	.34	.39	.27	1					
PG_g	.41	.30	.38	.42	.49	.45	.49	.38	.45	.43	.37	1				
W&PL_g	.28	.27	.31	.34	.35	.35	.36	.22	.35	.39	.24	.52	1			
TID	.47	.25	.36	.31	.37	.34	.36	.44	.31	.25	.33	.35	.17	1		
PR	.41	.31	.38	.38	.45	.40	.44	.44	.38	.34	.34	.40	.29	.40	1	
LT	.31	.48	.33	.37	.36	.37	.37	.37	.33	.33	.27	.31	.27	.31	.41	1
UT	−.12	−.04*	−.11	−.10	−.15	−.13	−.13	−.19	−.10	−.06	−.11	−.14	−.02*	−.20	−.10	−.19
LC	−.12	−.08	−.08	−.08	−.12	−.10	−.13	−.24	−.11	−.10	−.11	−.12	−.02*	−.23	−.15	−.19
UTe	−.13	−.10	−.13	−.13	−.17	−.19	−.12	−.17	−.14	−.09	−.10	−.15	−.08	−.15	−.09	−.16
TE_b	.58	.27	.35	.31	.37	.29	.36	.52	.27	.24	.31	.30	.17	.48	.40	.31
RwC_b	.24	.56	.27	.30	.27	.24	.29	.39	.21	.27	.21	.21	.18	.21	.27	.41
TS_b	.39	.28	.61	.44	.45	.38	.44	.49	.33	.25	.35	.34	.24	.39	.38	.33
ID_b	.34	.29	.41	.63	.43	.42	.37	.46	.31	.27	.30	.31	.26	.34	.38	.36
SE_b	.41	.28	.43	.42	.61	.44	.42	.56	.33	.28	.34	.35	.24	.41	.41	.34
RwS_b	.35	.31	.39	.46	.46	.64	.40	.52	.34	.30	.31	.37	.26	.38	.39	.37
SK_b	.34	.29	.38	.34	.37	.32	.65	.62	.38	.32	.41	.38	.26	.40	.43	.35
P&O_b	.38	.29	.35	.33	.38	.33	.45	1.00	.37	.33	.34	.38	.22	.44	.44	.37
LI_b	.36	.25	.35	.33	.37	.33	.46	.59	.63	.41	.37	.37	.28	.40	.40	.33
BM_b	.26	.25	.21	.26	.27	.24	.34	.53	.31	.56	.26	.31	.24	.31	.32	.32
Ca_b	.32	.24	.33	.31	.31	.28	.42	.49	.31	.24	.66	.31	.17	.36	.33	.28
PG_b	.31	.23	.28	.28	.32	.28	.41	.56	.30	.26	.33	.51	.26	.41	.36	.27
W&PL_b	.19	.18	.17	.23	.22	.21	.29	.41	.22	.26	.20	.28	.46	.21	.25	.25

Variable	UT	LC	UTe	TE_b	RwC_b	TS_b	ID_b	SE_b	RwS_b	SK_b	P&O_b	LI_b	BM_b	Ca_b	PG_b	W&PL_b
TE_g																
RwC_g																
TS_g																
ID_g																
SE_g																

Table 1 (continued)

Variable	UT	LC	UTe	TE_b	RwC_b	TS_b	ID_b	SE_b	RwS_b	SK_b	P&O_b	LI_b	BM_b	Ca_b	PG_b	W&PL_b
RwS_g																
SK_g																
P&O_g																
LI_g																
BM_g																
Ca_g																
PG_g																
W&PL_g																
TID																
PR																
LT																
UT	1															
LC	−.18	1														
UTe	−.16	−.19	1													
TE_b	−.20	−.23	−.15	1												
RwC_b	−.10	−.15	−.09	.44	1											
TS_b	−.19	−.19	−.16	.55	.46	1										
ID_b	−.17	−.18	−.16	.48	.46	.63	1									
SE_b	−.23	−.22	−.19	.55	.40	.61	.59	1								
RwS_b	−.16	−.17	−.20	.43	.37	.49	.56	.63	1							
SK_b	−.20	−.23	−.15	.49	.40	.53	.47	.58	.53	1						
P&O_b	−.19	−.24	−.17	.52	.39	.49	.46	.56	.52	.62	1					
LI_b	−.19	−.23	−.17	.47	.34	.47	.44	.55	.50	.62	.59	1				
BM_b	−.18	−.25	−.14	.42	.41	.37	.42	.47	.43	.52	.53	.58	1			
Ca_b	−.18	−.20	−.14	.45	.35	.46	.41	.50	.45	.59	.49	.52	.43	1		
PG_b	−.28	−.30	−.20	.47	.34	.44	.42	.50	.45	.59	.56	.56	.54	.50	1	
W&PL_b	−.12	−.17	−.11	.32	.33	.33	.36	.37	.35	.46	.41	.44	.52	.36	.54	1

All correlation coefficients were at least significant at $p < .05$ level of significance with two exceptions (i.e. relationships between the W&PL_g and UT; relationships between the W&PL_g and LC); TE_g: teacher engagement goals; RwC_g: relationship with colleagues goals; TS_g: teaching strategies goals; ID_g: individual differences goals; SE_g: student engagement goals; RwS_g: relationship with student goals; SK_g: subject knowledge goals; P&O_g: planning and organization goals; LI_g: learning impact goals; BM_g: behaviour management goals; Ca_g: career goals; PG_g: personal goals; W&PL_g: work and private life goals; TID: teacher identity; PR: professionalism; LT: learning to teach; UT: uninspired teaching; LC: loss of control; UTe: uninterested teacher; TE_b: beliefs about teacher engagement goals; RwC_b: beliefs about relationship with colleagues goals; TS_b: beliefs about teaching strategies goals; ID_b: beliefs about individual differences goals; SE_b: beliefs about student engagement goals; RwS_b: beliefs about relationship with student goals; SK_b: beliefs about subject knowledge goals; P&O_b: beliefs about planning and organization goals; LI_b: beliefs about learning impact goals; BM_b: beliefs about behaviour management goals; Ca_b: beliefs about career goals; PG_b: beliefs about personal goals; W&PL_b: beliefs about work and private life goals

be reasonably interpreted as a full consonance between PTs' planning and organization goals and their beliefs about the attainability of these goals rather than a singularity problem. Indeed, this result can be explained based on the fact that instructional planning and organization are highly emphasised in Turkish teacher education programs (CoHE 2007) through pedagogical courses (e.g. introduction to educational sciences, instructional technology and material development, instructional principles and methods), which may strengthen the consonance between PTs' planning and organization goals and their beliefs about the attainability of these goals. Nevertheless, PTs' beliefs about the attainability of planning and organization goals were not included in the later statistical analyses in order to prevent the singularity problem (Darlington and Hayes 2017).

Regression analyses

The results of regression analyses are summarised in Table 2. Because a large number of research variables were included in the regression analyses, only the independent variables that explained a considerable amount of the remaining variance ($r_{sp} \approx .10$ or bigger) in the dependent variables are presented in Table 2.

As shown in Table 2 (see Model 1), independent variables explained a significant amount of the total variance in teacher identity ($R^2 = .46$; $F(13, 2289) = 149.41$, $p < .001$). Nonetheless, a large proportion of the variance (54%) remained unexplained. Semi-partial correlation coefficients demonstrated that a significant amount of the remaining variance in teacher identity could be explained by optimism (19%), making a good impression (11%), teacher engagement goals (19%), and planning and organization goals (18%). With regard to professionalism, independent variables explained a significant amount of the total variance ($R^2 = .42$; $F(16, 2286) = 104.13$, $p < .001$). However, a large proportion of the variance (58%) remained unexplained. Semi-partial correlation coefficient regarding planning and organization goals was substantial (16%). On the other hand, independent variables explained relatively a small proportion of the variance in expectations of learning to teach ($R^2 = .38$; $F(14, 2288) = 102.80$, $p < .001$). Indeed, a great proportion of the variance (62%) remained unexplained. Semi-partial correlation coefficients indicated that a significant amount of the remaining variance could be explained by the relationship with colleagues (26%) and planning and organization goals (12%) (Table 2, Model 1).

As depicted in Table 2 (see Model 2), professional goals significantly and positively predicted beliefs about the attainability of these goals. Semi-partial correlation coefficients regarding professional goals were all substantial as they ranged in magnitude from .29 to .45. Notably, planning and organization goals were significantly and positively associated with beliefs about the attainability of all types of the professional goals. Semi-partial correlation coefficients ranged in magnitude from .22 to .34, indicating that a significant amount of the remaining variance in relation to the beliefs about the attainability of professional goals could be explained by planning and organization goals.

The results (see Table 2, Model 3) also showed that the independent variables explained a large proportion of the variance regarding beliefs about the attainability of teacher engagement goals ($R^2 = .52$; $F(15, 2287) = 166.26$, $p < .001$). Teacher identity weakly, yet significantly contributed to the explained variance ($\Delta R^2 = .02$, $p < .001$). Semi-partial correlation coefficients demonstrated that a significant amount of the remaining variance could be explained by teacher engagement goals (29%), planning and organization goals (23%), and teacher identity (13%). This indicates that teacher engagement goals, as well as planning and organization goals, significantly and positively predicted teacher identity, which, in turn, significantly and positively predicted beliefs about the attainability of teacher engagement goals. Likewise, independent variables explained half of the variance with regard to beliefs about the attainability of relationship with colleagues goals ($R^2 = .50$; $F(8, 2294) = 192.44$, $p < .001$). Similar to teacher identity, expectations of learning to teach weakly, yet significantly contributed to the explained variance ($\Delta R^2 = .01$, $p < .001$). Semi-partial correlation coefficients showed that relationship with colleagues goals (36%), planning and organization goals (18%), and expectations of learning to teach (9%) accounted for more than half of the remaining variance. These results clearly indicate that relationship with colleagues goals as well as planning and organization goals significantly and positively predicted expectations of learning to teach. In turn, expectations of learning to teach significantly and positively predicted beliefs about the attainability of relationship with colleagues goals (Table 2, Model 3).

Structural equation modelling analyses

Based on the results of the regression analyses, a structural model was created and examined through the SEM analysis. In the SEM analysis, teacher engagement goals, planning and organization goals, and relationship with colleagues goals were determined as the independent variables, whereas beliefs about the attainability of teacher engagement goals and beliefs about the attainability of relationship with colleagues goals were determined as the dependent variables. Teacher identity and expectations of learning to teach were determined as the mediator variables in the SEM analysis.

The results of the SEM analysis showed that the structural model had acceptable fit to the data ($\chi^2(1275) = 4132.808$; CFI = 0.940; TLI = 0.935; SRMR = 0.042; RMSEA = 0.031). The structural model

Table 2 Summary of the regression analyses

Model	Independent variable	Dependent variable	B^a	SE^b	β^c	t	$r_{sp}{}^d$
1	Optimism	Teacher identity	0.48	0.04	0.20	12.39*	.19
	Making a good impression		−0.27	0.04	−0.12	−0.7.26*	−.11
	Teacher engagement goals		1.24	0.10	0.25	12.23*	.19
	Planning-Organization goals		0.95	0.08	0.22	11.72*	.18
	Planning-Organization goals	Professionalism	0.22	0.02	0.20	10.13*	.16
	Relationship with colleagues goals	Learning to teach	0.33	0.02	0.30	15.65*	.26
	Planning-Organization goals		0.15	0.02	0.15	7.49*	.12
2	Teacher engagement goals	Beliefs about teacher engagement goals	0.52	0.02	0.44	22.61*	.33
	Planning-Organization goals		0.34	0.02	0.34	18.63*	.28
	Relationship with colleagues goals	Beliefs about relationship with colleagues goals	0.52	0.02	0.48	26.07*	.42
	Planning-Organization goals		0.25	0.02	0.25	13.38*	.22
	Teaching strategies goals	Beliefs about teaching strategies goals	0.50	0.02	0.43	20.65*	.34
	Planning-Organization goals		0.26	0.02	0.29	15.54*	.23
	Individual differences goals	Beliefs about individual differences goals	0.63	0.03	0.53	25.43*	.38
	Planning-Organization goals		0.28	0.02	0.29	15.78*	.23
	Student engagement goals	Beliefs about student engagement goals	0.49	0.03	0.43	19.85*	.29
	Planning-Organization goals		0.32	0.02	0.38	21.44*	.31
	Relationship with students goals	Beliefs about relationship with students goals	0.58	0.02	0.51	25.30*	.36
	Planning-Organization goals		0.30	0.02	0.35	19.96*	.28
	Subject knowledge goals	Beliefs about subject knowledge goals	0.55	0.02	0.47	24.32*	.32
	Planning-Organization goals		0.39	0.02	0.42	25.03*	.30
	Learning impact goals	Beliefs about learning impact goals	0.49	0.02	0.45	24.82*	.34
	Planning-Organization goals		0.40	0.02	0.40	23.53*	.32
	Behaviour management goals	Beliefs about behaviour management goals	0.50	0.02	0.45	24.55*	.37
	Planning-Organization goals		0.44	0.02	0.41	22.40*	.34
	Career goals	Beliefs about career goals	0.64	0.02	0.57	32.05*	.45
	Planning-Organization goals		0.26	0.01	0.31	17.89*	.25
	Personal goals	Beliefs about personal goals	0.40	0.02	0.33	16.74*	.25
	Planning-Organization goals		0.45	0.02	0.41	22.01*	.33
	Work and private life goals	Beliefs about work and private life goals	0.47	0.02	0.38	21.99*	.37
	Planning-Organization goals		0.38	0.02	0.34	18.53*	.31
3	Teacher engagement goals	Beliefs about teacher engagement goals	0.46	0.02	0.39	19.95*	.29
	Teacher identity		0.04	0.01	0.17	8.68*	.13
	Relationship with colleagues goals	Beliefs about relationship with colleagues goals	0.48	0.02	0.44	22.40*	.36
	Planning-Organization goals		0.23	0.02	0.22	11.26*	.18
	Learning to teach		0.12	0.02	0.12	5.80*	.09
	Teaching strategies goals	Beliefs about teaching strategies goals	0.49	0.02	0.42	20.51*	.30
	Planning-Organization goals		0.23	0.02	0.26	13.42*	.20
	Individual differences goals	Beliefs about individual differences goals	0.62	0.03	0.53	25.12*	.37
	Planning-Organization goals		0.25	0.02	0.26	13.49*	.20
	Student engagement goals	Beliefs about student engagement goals	0.49	0.03	0.43	19.68*	.28
	Planning-Organization goals		0.30	0.02	0.35	18.99*	.27
	Relationship with students goals	Beliefs about relationship with students goals	0.58	0.02	0.50	25.01*	.35
	Planning-Organization goals		0.28	0.02	0.32	17.78*	.25
	Subject knowledge goals	Beliefs about subject knowledge goals	0.54	0.02	0.46	24.04*	.32
	Planning-Organization goals		0.37	0.02	0.39	22.40*	.30
	Learning impact goals	Beliefs about learning impact goals	0.49	0.02	0.44	24.74*	.34
	Planning-Organization goals		0.38	0.02	0.38	21.31*	.29
	Behaviour management goals	Beliefs about behaviour management goals	0.50	0.02	0.45	24.11*	.36
	Planning-Organization goals		0.42	0.02	0.39	20.08*	.30

Table 2 (continued)

Model	Independent variable	Dependent variable	B^a	SE^b	β^c	t	$r_{sp}{}^d$
	Career goals	Beliefs about career goals	0.64	0.02	0.57	31.85*	.45
	Planning-Organization goals		0.24	0.02	0.29	16.09*	.23
	Personal goals	Beliefs about personal goals	0.39	0.02	0.32	16.57*	.25
	Planning-Organization goals		0.39	0.02	0.36	18.77*	.28
	Loss of control		−0.12	0.02	−0.14	−8.20*	−.12
	Work and private life goals	Beliefs about work and private life goals	0.46	0.02	0.38	20.88*	.35
	Planning-Organization goals		0.38	0.02	0.34	16.83*	.28

All two-tailed levels of significance and standard errors were computed based on the percentile bootstrap method; for presentation clarity, the lower and upper bounds of the standardised effects were not shown in the Table

*$p < .001$

[a]Unstandardised parameter estimation

[b]Standard error

[c]Standardised parameter estimation

[d]Semi-partial correlation

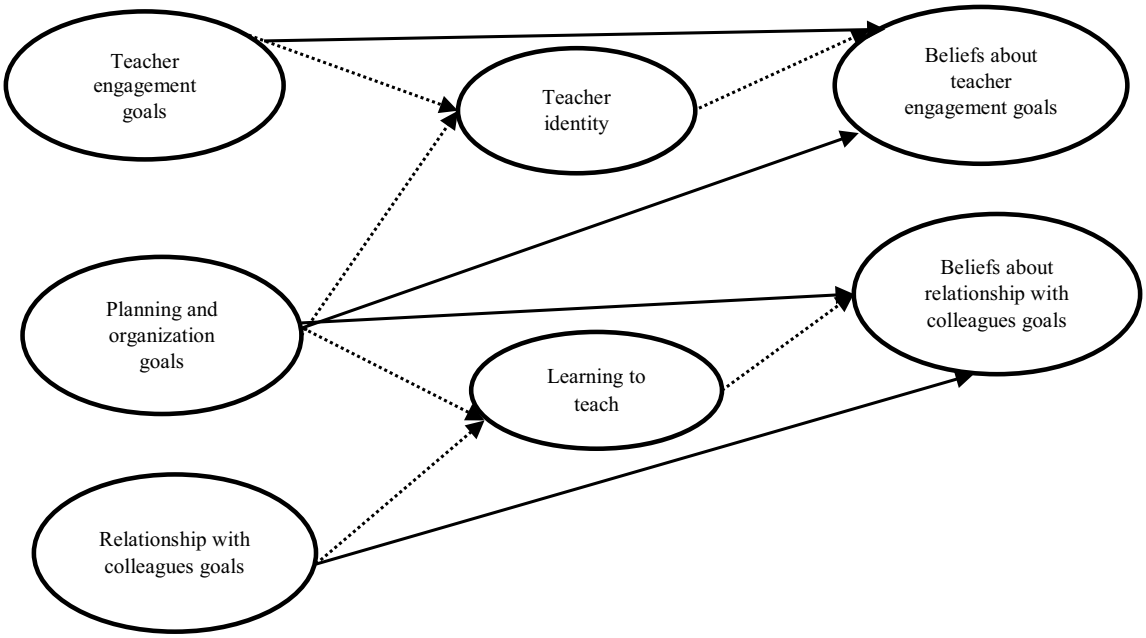

Fig. 1 The structural model. Note: solid lines indicate the unmediated (direct) effects whereas dashed lines indicate the mediated (indirect) effects

was illustrated in Fig. 1 while the results of the SEM analysis are summarised in Tables 3 and 4, respectively.

As seen in Table 3, teacher engagement goals significantly predicted beliefs about the attainability of these goals and teacher identity. Similarly, planning and organization goals significantly predicted beliefs about the attainability of teacher engagement goals, beliefs about the attainability of relationship with colleagues goals, teacher identity, and expectations of learning to teach. The links between relationship with colleagues goals, beliefs about the attainability of relationship with colleagues goals, and expectations of learning to teach were also significant. Furthermore, teacher identity significantly predicted beliefs about the attainability of teacher engagement goals while expectations of learning to teach significantly predicted beliefs about the attainability of relationship with colleagues goals.

Importantly, both teacher engagement goals and planning and organization goals significantly and positively predicted teacher identity, which, in turn, significantly

Table 3 Summary of the structural equation modelling analysis regarding the baseline model

Predictor variable	Predicted variable	B^a	SH[b]	B^c	Lower bounds[d]	Upper bounds[d]
Teacher engagement goals	Teacher identity	0.59	0.05	0.41*	0.35	0.47
	Beliefs about teacher engagement goals	0.48	0.04	0.42*	0.36	0.49
Planning-Organization goals	Teacher identity	0.31	0.04	0.20*	0.15	0.26
	Learning to teach	0.44	0.04	0.36*	0.30	0.43
	Beliefs about teacher engagement goals	0.16	0.03	0.13*	0.08	0.19
	Beliefs about relationship with colleagues goals	0.13	0.04	0.09*	0.03	0.15
Relationship with colleagues goals	Learning to teach	0.80	0.06	0.51*	0.43	0.57
	Beliefs about relationship with colleagues goals	0.89	0.08	0.47*	0.40	0.54
Teacher identity	Beliefs about teacher engagement goals	0.23	0.02	0.29*	0.23	0.34
Learning to teach	Beliefs about relationship with colleagues goals	0.18	0.04	0.15*	0.07	0.22

*$p < .01$

[a]Unstandardised parameter estimation

[b]Bootstrap standard error

[c]Standardised parameter estimation

[d]The lower and upper bounds of the standardised effects

Table 4 Summary of the structural equation modelling analysis regarding the direct and indirect effects

Predictor variable	Predicted variable	Total[a]	Direct[b]	Indirect[c]
Teacher engagement goals	Beliefs about teacher engagement goals	0.54*	0.42*	0.12*
Planning-Organization goals	Beliefs about teacher engagement goals	0.19*	0.13*	0.06*
	Beliefs about relationship with colleagues goals	0.15*	0.09*	0.05*
Relationship with colleagues goals	Beliefs about relationship with colleagues goals	0.54*	0.47*	0.07*

All p values were corrected based on the percentile bootstrap method; for presentation clarity, the lower and upper bounds of the standardised effects were not shown in the Table

*$p < .01$

[a]Total effect

[b]The unmediated effect

[c]The mediated effect

and positively predicted beliefs about the attainability of teacher engagement goals. These results indicate that the relationships between teacher engagement goals and beliefs about the attainability of these goals, as well as the relationships between planning and organization goals and beliefs about the attainability of teacher engagement goals, were partially mediated by teacher identity (Table 4). Likewise, relationship with colleagues goals and planning and organization goals significantly and positively predicted expectations of learning to teach, which, in turn, significantly and positively predicted beliefs about the attainability of relationship with colleagues goals. These results signify that the associations between relationship with colleagues goals and beliefs about the attainability of these goals, as well as the associations between planning and organization goals and beliefs about the attainability of relationship with colleagues goals, were partially mediated by the expectations of learning to teach (Table 4).

Discussion

Associations among professional goals, beliefs about the attainability of these goals, teacher identity, and teacher possible selves

In relation to the first research question, the results of correlational analysis showed that PTs' professional goals and their beliefs about the attainability of these goals were significantly and positively related to their teacher identity. In other words, the results showed that PTs perceived certain professional goals (e.g. student engagement, teaching strategies) as more relevant to their teacher identity than other professional goals (e.g. relationship with colleagues, work and private life). Thus, it can be argued that PTs' teacher identities were mainly related to socio-emotional goals, followed by task-related and self-related goals respectively. This argument is highly in line with

the results of previous studies which showed that PTs'/teachers' professional goals were inextricably linked to their teacher identities (e.g. Enyedy et al. 2006; Mansfield and Beltman 2014; Rüprich and Urhahne 2015). These results can be also explained based on the well-documented effects of teacher education programs on PTs' professional goals, beliefs, attitudes, and aspirations, each of which significantly influences PTs' teacher identities (e.g. Beauchamp and Thomas 2009; Richards et al. 2001; Wall 2016). Given that teacher education programs mostly aim to develop PTs' teaching-specific skills and knowledge (e.g. using effective teaching strategies) rather than personal/social skills (e.g. relationship with colleagues), it can be understood why PTs perceived these professional goals as more relevant to their teacher identity.

The results of correlation analysis also demonstrated that PTs' professional goals and their beliefs about the attainability of these goals were significantly and positively related to their ETPS, whereas they were weakly and negatively related to their FTPS. Given that teacher possible selves, particularly the expected teacher selves, may exert a motivational influence on professional goals (Hamman et al. 2010, 2013; Strahan and Wilson 2006), it is not surprising to observe significant and positive relationships between PTs' expected teacher selves and their beliefs about the attainability of professional goals.

Relatively weak and negative relationships between professional goals, beliefs about the attainability of these goals, and FTPS can be explained based on the possibility that PTs evaluate/re-evaluate their professional goals and attainability of these goals within the range of their professional future horizons which can be more or less optimistic as people are likely to think about the future in unrealistically positive terms (O'Brien 2013; Weinstein 1980). It is highly possible that this optimistic bias may strengthen the positive relationships between PTs' professional goals, beliefs about the attainability of these goals, and ETPS on one hand, and weaken the negative relationships between PTs' professional goals, beliefs about the attainability of these goals, and FTPS on the other. These explanations also provide a solid basis to understand the significant relationships between teacher identity, expected teacher possible selves, and FTPS. Likewise, the current results showed that the relationships between ETPS and teacher identity were stronger than the relationships between FTPS and teacher identity. This result is in line with the results of previous studies which showed that the ETPS were more prominent than the FTPS among PTs (Hong 2010; Toprakci and Arslan 2016). Indeed, both the mentioned result and the results of previous studies clearly signify that PTs' positive expectancies regarding their future teaching considerably outweigh their negative expectancies. Thus, it is reasonable to claim that such kind of positive expectancy bias may lead PTs to consider their expectations of professionalism and learning to teach as more relevant to their teacher identities. This claim can be further supported by the results of Hong's (2010) study which showed that PTs' teacher identities mostly consisted of naive, idealistic perceptions, and positive emotions about teaching.

Remarkably, negative and moderate relationships between the loss of control and beliefs about the attainability of personal goals were also observed in the present study. This result can be expected because challenging aspects of the teaching profession such as effective classroom management are mostly perceived as serious concerns by beginning teachers/PTs (e.g. Hagger and Malmberg 2011; Watzke 2007). Indeed, such kind of concerns may potentially deteriorate PTs' beliefs about the attainability of personal goals because when PTs doubt about their ability to become successful teachers who have, for example, effective classroom management skills, they may not believe that their personal goals (e.g. teaching with confidence) are attainable.

The results also revealed that PTs' work and private life goals were significantly, yet moderately related to their beliefs about the attainability of these goals, indicating that PTs did not strongly believe that they could create a balance between their work and private life. Given that the teaching profession is both challenging and complex (Popper-Giveon and Shayshon 2017) which require teachers to be attentive and adaptive (Clarke and Hollingsworth 2002), the moderate relationship between the mentioned variables can be understood. In fact, the aforementioned result is also in line with previous studies which demonstrated that teachers'/PTs' work and private life goals were moderately related to their perceptions of psychological stress, emotional exhaustion, and socio-emotional wellbeing (Hong 2010; Kieschke and Schaarschmidt 2008; Louws et al. 2018; Pillen et al. 2013; Rüprich and Urhahne 2015). For example, Pillen et al. (2013, p. 253) showed that the main professional development tensions experienced by beginning teachers were "wanting to care for students versus being expected to be tough and wanting to invest in a private life versus feeling pressured to spend time and energy on work".

The results of the regression analyses were highly similar to the results of correlation analysis. Nevertheless, the results of regression analyses provided more sophisticated results regarding the second research question. Specifically, the results revealed that teacher engagement goals significantly and positively predicted teacher identity while relationship with colleagues goals significantly and positively predicted expectations of learning to teach. Considering that teacher engagement goals mostly refer to the emotional aspects of the teaching profession, it can be understood why teacher engagement goals significantly predicted teacher identity. In fact, key aspects of teachers'/PTs' teacher identities revolve around the emotions associated with the teaching profession

(Schutz and Lee 2014). Moreover, relationship with colleagues goals is strictly tied to teamwork, which requires PTs/beginning teachers to cooperate with experienced colleagues (Henkin et al. 2007; Hindin et al. 2007).

Importantly, planning and organization goals significantly and positively predicted both teacher identity and ETPS, indicating that PTs perceived their teacher identities and ETPS as more relevant to their planning and organization goals. This result is not surprising because planning and organization goals highlight the crucial aspects of the instructional processes (e.g. using effective teaching strategies and materials to enhance student learning) which are intertwined with teacher identities and ETPS. Likewise, Hsieh (2010) examined how beginning English teachers constructed and enacted a teacher professional identity in their early careers, and found that teachers' individual professional identity orientations were mainly related to instructional planning.

More importantly, the results also showed that PTs' planning and organization goals significantly and positively predicted all aspects of their beliefs about the attainability of professional goals, signifying that PTs' planning and organization goals are highly central to their beliefs about the attainability of professional goals. This result can be explicated based on the effects of teacher education programs on PTs' professional goals and respective beliefs because instructional planning and organization for teaching and learning processes are essential parts of any university-based teacher education program (Zeichner and Conklin 2008). This is also true for teacher education programs in Turkey because competencies for instructional planning and organization coincide with a large number of performance indicators of the generic teacher competencies determined by the MoNE (MoNE 2017). Specifically, 49 of the 139 performance indicators of the generic teacher competencies are related to instructional planning and organization processes (Kara and Sağlam 2014). These indicators were also strongly emphasised in teacher education programs through pedagogical courses (e.g. classroom management). Thus, it can be understood why PTs strongly believed that attainability of their professional goals were strictly tied to the development of adequate planning and organization skills.

Following the same line of reasoning, it can also be understood why PTs' professional goals were significantly linked to their beliefs about the attainability of these goals because, similar to other countries around the globe (Darling-Hammond and Bransford 2005; Mayer et al. 2017), teacher education programs in Turkey are mainly designed to shape/reshape PTs' beliefs, attitudes, and professional identities in accordance with the characteristics of the teaching profession (CoHE 2007). Hence, these characteristics may create a balance between PTs' professional goals and their beliefs about the attainability of these goals by motivating PTs to "explore the practice of teaching for meanings to which they are willing to commit themselves, and for the realization of which they are willing to develop competence" (Van Huizen et al. 2005, p. 282).

Mediating roles of teacher identity and expectations of learning to teach

The results of the SEM analysis demonstrated that the relationships between teacher engagement goals and beliefs about the attainability of these goals were partially mediated by teacher identity. This indicates that PTs' beliefs about the attainability of their teacher engagement goals (e.g. experiencing professional fulfilment and teaching with enthusiasm) depends, at least to some extent, on their professional identity. This result can be explained based on the results of previous studies on teacher identity which revealed that teacher identity and teacher engagement were strongly related to one another when teachers/PTs perceive themselves as efficient professionals who have appropriate pedagogical and technical skills as well as positive personal and emotional characteristics (Bell and Gilbert 1994; Girvan et al. 2016) each of which highly relates to PTs' teacher identities (González-Calvo and Arias-Carballal 2017; Zembylas 2003). As a matter of fact, PTs' teacher identities are contextualised, clarified, refined through learning experiences that potentially affect the development of appropriate teaching-related skills and characteristics during teacher education. These explanations also provide a basis to understand why PTs' beliefs about the attainment of teacher engagement goals were also predicted by their planning and organization goals through teacher identity because instructional planning and organization skills are also among the prominent aspects of effective teacher identity (Palmér 2016).

The results of the SEM analysis also demonstrated that the associations between relationship with colleagues goals and beliefs about the attainability of these goals were partially mediated by the expectations of learning to teach. Apparently, PTs believed that their relationship with colleagues goals is attainable when they get enough support from experienced colleagues with respect to learning how to teach effectively. Given that supportive communication among administrators and teachers in school settings positively influences beginning teachers' professional beliefs (Raths 2001), and also given that beginning teachers/PTs highly benefit from the supportive communication during the reflection processes on their teaching practices (Park et al. 2007), the mediating role of expectations of learning to teach in the associations between relationship with colleagues goals and beliefs about the attainability of these goals can be well understood.

Following this line of reasoning, the mediating role of expectations of learning to teach in the associations

between planning and organization goals and beliefs about the attainability of relationship with colleagues goals can be also understood. It is understandable because believing that relationship with colleagues goals are attainable does not only require PTs to identify clear professional goals (e.g. planning and organization goals) in order to establish credible professional relationships with their experienced colleagues, but also requires them to consider/reconsider whether their expectations of learning to teach will be met by their colleagues in terms of the challenging aspects of the teaching profession such as instructional planning and organization. The aforementioned results and explanations strongly underline the important roles of effective teacher identity and positive expectations of learning to teach in bridging the gap between PTs' professional goals and beliefs about the attainability of these goals.

Conclusions and implications for teacher education

Four major conclusions can be derived from the results of the present study. First, the results provide a dynamic, multifaceted, and contested outlook of PTs' professional goals. As it has been recently recognised, teachers'/PTs' professional goals are crucial factors that influence their motivations for teaching (e.g. Butler 2007, 2012; Watt et al. 2017) which are highly relevant to worldwide reform efforts in teacher education aiming to improve teacher effectiveness and teaching quality. For example, current accountability reforms strongly underline 'test-based accountability' through which schools and teachers are being held increasingly accountable for student outcomes such as academic achievement (Patrick and Mantzicopoulos 2016). However, strong emphasis on student outcomes may decrease teacher motivation and lead teachers to adopt performance-oriented professional goals (Butler 2007). In turn, this may lead teachers to be less attentive to their students' social and emotional needs and encourage them to use practices that emphasise social comparison and competition rather than task mastery improvement (Roeser et al. 2002). It is obvious that such kind of teacher behaviours and educational practices negatively affect the quality of teaching by decreasing student motivation and engagement (e.g. Eccles and Midgley 1989). Hence, teacher educators and policy makers need to be aware of the fact that teachers have large number of professional goals that have important implications for teacher motivation and teaching quality.

In addition, because professional goals are subjective in nature, teacher educators should be sensitive to subjectivity in PTs' professional goals and create autonomy-supportive learning environments in which PTs feel free to take risks, learn from theirs and others' mistakes, and discover personal meanings of the teaching profession (Feiman-Nemser 1990). Such learning environments should be enhanced in initial teacher education and carefully created by teacher educators, cooperating teachers, and university supervisors during PTs' teaching practicum so that a deeper insight into PTs' initial professional goals is ensured and thereby the development of PTs' professional goals would be positively influenced. Furthermore, studies within a goal theory tradition could benefit from a larger focus on professional goals in which the diverse aspects of the teaching profession are embedded.

Second, PTs' professional goals are at least to some extent compatible with their beliefs about the attainability of these goals, meaning that PTs tend to believe that their professional goals are more or less attainable in the future. Although it has long been argued that beliefs and goals are significantly related to each other, this issue has only recently been empirically validated (e.g. Aguirre and Speer 1999; Schutz et al. 2007). Moreover, to the best of the researchers' knowledge, the current study is first to examine the relationships between PTs' professional goals and beliefs about the attainability of these goals. Thus, the results of the present study provide a comprehensive practical framework for teacher educators to explore the strong or weak links between PTs' professional goals and their beliefs about the attainability of these goals and enable them to find opportunities to strengthen these weak links in order to increase PTs commitment to teaching.

Third, PTs' professional goals and their beliefs about the attainability of these goals are significantly and selectively related to their teacher identities and expectations of learning to teach. The roles of professional goals in teacher motivation (e.g. Butler 2007; Mansfield et al. 2012; Rüprich and Urhahne 2015), as well as the roles of teacher identity and ETPS in professional development (e.g. Beauchamp and Thomas 2009; Hiver 2013) and commitment to teaching (e.g. Day et al. 2005; Ronfeldt and Grossman 2008), have long been recognised in the relevant literature. Therefore, the aforementioned results of the current study are important to urge teacher educators and policy makers to better guide PTs to assess/reassess their professional identities and ETPS in terms of the challenging and diverse aspects of the teaching profession. These results are also helpful to teacher educators and policy makers in considering the concepts of teacher effectiveness and teaching quality along with the concepts of professional goals, beliefs about the attainability of these goals, teacher identity, and ETPS in order to better understand the factors underlying the current concerns of the teaching profession such as teacher effectiveness and teaching quality. As a matter of fact, these concerns are particularly prominent for the country members of the OECD such as the United States, the Netherlands, Australia, and Portugal (OECD 2018). Turkey is by no means an exception where a large number of curricular and structural reforms have been

implemented over the 93-year history of the country in order to improve teaching quality and teacher effectiveness (Grossman 2013; OECD 2018; CoHE 2018).

Finally, regardless of the effects of demographic variables, optimism, and making a good impression, relationships between the PTs' professional goals and their beliefs about the attainability of these goals are partially mediated by their teacher identities and expectations of learning to teach. Because teacher identity is at the core of the teaching profession and works as a framework for teachers to construct their own ideas of "how to be", "how to act" and "how to understand" their work and place in society (Sachs 2001, p. 15), teacher educators and policy makers should better support teacher identity development by providing mentoring relationships with cooperating teachers and university supervisors during teaching practicum in order to strengthen the links between PTs' professional goals and beliefs about the attainability of these goals. Indeed, PTs' learning process is meaningful only when embedded in the experience of learning to teach and reflected on practicum experiences, during which notions of oneself as an effective teacher are shaped/reshaped (Korthagen et al. 2006). One of the reasonable ways to develop teacher identity is allowing PTs to reflect on their personal experiences and teaching practices through ongoing support during teacher education, which involves professional dialogue, reflective teaching, mentoring, communities of learning, journal writing (Eggers and Clark 2000; Fetters et al. 2002; Grossman et al. 2009; Korthagen et al. 2006). Furthermore, cooperating teachers should consider mentoring as an opportunity to enhance PTs' professional development and they should encourage PTs to involve in different types of teaching processes (e.g. instructional planning and organization, classroom teaching). By doing so, cooperating teachers might be able to support PTs' professional identity development and encourage PTs to better understand the diverse aspects of their teacher identity (Fletcher 2007; Ruohotie-Lyhty and Moate 2016; Yuan 2016).

Similar to the results regarding the mediating roles of teacher identity, the mediating role of PTs' expectations of learning to teach is also important to urge teacher educators and policy makers to consider ETPS instead of FTPS in order to strengthen the links between PTs' professional goals and their beliefs about the attainability of these goals. Likewise, psychological studies provide convincing evidence that thinking about the future may help individuals to adopt more reasonable and clearer goals and motivate them to feel, learn, hope, and act accordingly (Markus and Ruvolo 1989; Seginer and Lens 2015). Indeed, PTs' teaching-specific expectations such as expectations of learning to teach lie at the heart of their autonomous motivation to teach, which profoundly influences their methodological choices, responses to their professional training, effort in their work, and their resilience in the face of professional challenges (Ryan and Deci 2000). Thus, PTs' ETPS, particularly their expectations of learning to teach, should be incorporated into teacher education programs (Conway 2001; Conway and Clark 2003) so that teacher educators and teacher education program developers may benefit from PTs' ETPS in order to enhance their professional development more effectively. Additionally, establishing supportive mentoring relationships with cooperating teachers and university supervisors during teaching practicum may enable PTs to learn comprehensive pedagogical content knowledge, develop effective teaching skills, and to hold positive attitudes towards the teaching profession, which, in turn, may motivate PTs to envision their future teaching more realistically and comprehensively. It is likely that such kinds of realistic and comprehensive predictions may protect PTs from the reality shock (i.e. collapse of expectations shaped during teacher education by the cruel reality of everyday classroom life, Veenman 1984) that they are likely to experience during the initial year of teaching (Kim and Cho 2014).

Limitations and directions for future studies

Overall, the results of the present study significantly contribute to the relevant literature by providing a comprehensive framework in which the strong and weak links between professional goals, beliefs about the attainability of these goals, teacher identity, and teacher possible selves are evident. This framework may inform the design of teacher education programs and the current teacher development initiatives, by suggesting that PTs' professional goals should be considered together with their beliefs about the attainability of these goals during teacher education as well as by illuminating the crucial roles of teacher identity and ETPS in bridging the gap between PTs' professional goals and beliefs about the attainability of these goals at the initial phase of their teaching career.

Despite the aforementioned contributions, this study has several limitations which should be addressed in future studies. First, the correlational design of the study significantly restricts causal inferences regarding the relationships between the research variables. Thus, experimental studies in which, for example, PTs' professional goals are manipulated through appropriate methods (e.g. using teaching-related scenarios or vignettes in which PTs who are willing to achieve certain professional goals are either appreciated or criticised) may enable researchers to assess the effects of professional goals on beliefs about the attainability of these goals. Longitudinal studies are also needed in order to examine whether the changes in PTs' professional goals, teacher identities, possible teacher selves, and their beliefs about the attainability of professional goals significantly associate with each other over time. Longitudinal studies should also

include variables that have potential to associate with professional goals such as emotions about teaching, self-efficacy beliefs, and motivations for teaching (e.g. Eren 2009; Wang et al. 2016; Watt and Richardson 2007; Wolters and Daugherty 2007) in order to enlarge the current framework of PTs' goals and their beliefs about the attainability of these goals.

Second, although the current sample was large enough to examine the relationships between the research variables, the results should be cautiously interpreted because the data were obtained from three universities and only included six diverse fields of study (e.g. science teaching, mathematics teaching, and special education teaching). Hence, future studies should be conducted based on the large number of universities and various samples of PTs majoring in, for example, arts teaching and social science teaching. Moreover, the current sample consisted of PTs in 4-year degree programs, suggesting that future studies should also include PTs in 1-year certificate programs in order to increase the generalizability of the current results and enable researchers to better understand how PTs set and adjust their professional goals, teacher identities, and possible selves.

Third, the sample of the current study consisted of PTs who lacked actual teaching experiences. Thus, it is important to examine the relationships between the research variables based on the samples of experienced teachers in order to gain a deeper insight into the roles of teachers' professional goals, beliefs, teacher identities, and possible selves in teacher motivation, resilience, and retention which are among the crucial concerns of the teaching profession (Beltman et al. 2015, 2011; Watt et al. 2017). Finally, both optimism and the tendency to make a good impression should be also made a part of the future studies because the results of this study showed that the effects of these variables on teacher identity were substantial.

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