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# Transformational school leadership as a key factor for teachers' job attitudes during their first year in the profession

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## Introduction

Over the last decades, an increasing number of studies have argued that the transition from teacher education to the actual profession is challenging for many teachers (Kelchtermans and Ballet, 2002; Veenman, 1984). Most beginning teachers experience high work pressure and perceive the start of their career as stressful (Tynjälä and Heikkinen, 2011). An overarching problem in many economically developed countries is the high number of teachers dropping out in the first years of their teaching careers (see Cooper and Alvarado, 2006; Hong, 2010; OECD, 2005). These high attrition rates are reported in many countries, irrespective of variation in their system of education (Skaalvik and Skaalvik, 2011). In this respect, even some of the most developed and stable education systems are confronted with the issue (see for example, Norway, Smith and Ulvik, 2017). In Flanders (Belgium), where the present study took place, approximately 14% of the primary school teachers leave the teaching profession in the first five years (Flemish Department of Education and Training, 2013). In the case of developing countries, the collection of data concerning teacher attrition is often poor and not always reliable (Mulkeen and Crowe-Taft, 2010 in their review of the literature on Sub-Saharan Africa). The available data indicates that in developing countries, there is a teacher retention problem to some extent (Khawary and Ali, 2015; Mulkeen and Crowe-Taft, 2010; Rinke, 2008) and that as in other countries around the world, this attrition is concentrated in teachers' first years in the profession (Mulkeen and Crowe-Taft, 2010). In general, the early attrition rates have led to several consequences such as teacher shortage (Ingersoll, 2001) and deteriorating student performance (Ronfeldt et al., 2013). In turn, these consequences have led to continuous attention to the teacher induction period (Kelchtermans, 1993; De Neve and Devos, 2017) and initiated a search for factors that can prevent teachers from dropping out early (e.g. Borman and Dowling, 2008). In this respect, inspired by the organisational psychology literature (e.g. Lachman and Aranya, 1986; Notz, 1975), several educational researchers (e.g. Carmeli and Weisberg, 2006) have studied job attitudes, defined as feelings, beliefs, and thoughts concerning the profession and organisation (George and Jones, 1999). These job attitudes are considered to promote positive outcomes for both the individual and the organisation in which they work (Struyve et al., 2016). In the educational context, these job attitudes were found to reduce early drop-out rates (Arnup and Bowles, 2016; Khawary and Ali, 2015; McInerney et al., 2015; Skaalvik and Skaalvik, 2011; Struyve et al., 2016). Subsequently, several international studies both in the educational field (e.g. Penuel et al., 2009) and outside of education (e.g. Akhtar et al., 2013) have investigated factors at the individual and organisational level

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that influence these job attitudes in a positive way. At the individual level, self-efficacy is found to be positively related to job attitudes (Bandura, 1997; Bogler and Somech, 2004; Canrinus et al., 2012). At the organisational level, professional collegial support (Duyar et al., 2013; Fox and Wilson, 2015; Penuel et al. 2009) and transformational leadership (Hallinger and Heck, 1996; Nguni et al., 2006; Tesfaw, 2014) are found to be important.

Although these aforementioned factors have already been established as being important for job attitudes, to the best of our knowledge, no educational large-scale quantitative research has examined the combination of these factors in the context of teachers' first year in the teaching profession. In the existing literature, transformational leadership is positively linked to professional collegial support (e.g. Marks and Printy, 2003) and self-efficacy (e.g. Geijsel et al., 2009). In this respect, investigating the interplay of these factors may reveal the central role of the principal in influencing teachers' job attitudes (Griffith, 2004) in a direct and indirect way.

To fill the research gap mentioned above, the goal of this paper is to examine the interplay between variables at the school level (i.e. transformational school leadership, professional collegial support) and the teacher level (i.e. teachers' self-efficacy) in the context of first-year teachers' job attitudes. In this interplay, the main focus lies on transformational school leadership, which is considered a key factor in the influence of the other variables involved (e.g. Geijsel et al., 2009; Marks and Printy, 2003). The construction of the hypothesised model, encompassing the interplay of the abovementioned variables, was anchored in the Job Demands-Resources model (JD-R) (Bakker and Demerouti, 2007).

## Theoretical framework

The Job Demands-Resources model (JD-R) of Bakker and Demerouti (2007) provides a valuable framework for the construction of the hypothesised model under study. In this hypothesised model, we want to test the interplay of variables at both the school level and teacher level influencing beginning teachers' job attitudes, as important variables that motivate teachers to stay in the profession. In particular, the JD-R model is motivational in nature (Bakker and Demerouti, 2007). Job resources are considered to be able to incite a motivational process leading to high work engagement (see, for example, Demerouti et al., 2001). Their motivational potential is realised through fulfilling basic human needs of autonomy, competence, and relatedness (Bakker and Demerouti, 2007; Deci and Ryan, 2000). Support, autonomy, and feedback are important recurring job resources in JD-R inspired articles, and are regarded



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as pivotal for meeting these basic human needs (Bakker and Demerouti, 2007). Key actors who provide these resources, and in turn fulfil these needs, are the leader on the one hand and colleagues on the other (see, for example, De Neve and Devos, 2017; Xanthopoulou et al., 2007).

In the present study, the first key actor is operationalised in transformational leadership, a key leadership model encompassing several components such as individualised support, shared goals, vision, intellectual stimulation, culture building, rewards, high expectations, and modelling (Leithwood et al., 1998). These key components suggest that a transformational leader is able to provide job resources of support (e.g. being available to assist teachers), autonomy (e.g. engaging teachers in the school vision), and feedback (e.g. providing feedback for and explaining reasons of criticism to teachers) (see, Hulpia et al., 2009) and, in turn, can fulfil the two basic needs of autonomy and competence (Deci and Ryan, 2000). The second key actor is operationalised in professional collegial support. Colleagues who provide beginning teachers support concerning work-related issues aim to fulfil the need for both competence and relatedness (Deci and Ryan, 2000).

Interestingly, transformational leaders can strengthen support among colleagues in the team (Hulpia et al., 2009). In the present study, this is operationalised in a hypothesised path between transformational leadership and professional collegial support. Moreover, the JD-R model stipulates the partial mediating role of personal resources in the relationship between job resources and work engagement (Luthans et al., 2006; Mastenbroek et al., 2014; Xanthopoulou et al., 2007). In the present study, this is operationalised in a hypothesised relationship where job resources provided by the transformational leader and support of colleagues activate teachers' confidence in their capabilities (self-efficacy) and, in turn, lead to positive job attitudes.

In the remainder of the theoretical framework, the key variables of the present study are further discussed. In particular, teachers' job attitudes as outcome variables are presented, followed by a discussion of the key actors providing job resources operationalised in two variables at the school level (i.e. transformational school leadership and professional collegial support) and a discussion of the personal resources operationalised in teachers' self-efficacy as a variable at the teacher level. Moreover, hypotheses concerning their interrelatedness are presented in more detail.

*Job attitudes as important factors of teacher retention*

For many years, scholars in the organisational psychology literature have studied job attitudes (e.g. Notz, 1975; Schwyhart and Smith, 1972), described as feelings, beliefs, and thoughts concerning the profession



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and the organisation (George and Jones, 1999). In this respect, intrinsic motivation (e.g. Lawler and Hall, 1970), organisational commitment (e.g. Meyer et al., 2002), and job satisfaction (e.g. Lachman and Aranya, 1986) have received much attention. In the context of the first years in the teaching profession, several scholars in the educational field have linked these three job attitudes to beginning teachers' decision to remain in the profession versus their decision to leave (e.g. Meyer et al., 2004; Zembylas and Papanastasiou, 2006). The first job attitude, being *intrinsically motivated to teach*, refers to teachers who teach because they enjoy the activity of the profession (Van den Broeck et al., 2009). The motivation to teach entails a series of feelings and beliefs that influence teachers' actions (Canrinus et al., 2012), such as their intentions to leave the profession (Vansteenkiste et al., 2007). For the second job attitude, the literature reveals that the concept of *organisational commitment* has three components (Meyer and Allen, 1991): (1) the affective component is about feelings of identification with and involvement in the organisation, (2) the normative component concerns the feeling of being obliged to stay in the organisation regardless of personal satisfaction, and (3) the continuance component refers to the attachment to the organisation based on the costs of departing the organisation. In this study, only affective organisational commitment is included, as findings of meta-analyses performed by Meyer et al. (2002) found that affective commitment has the strongest association with teachers' intentions to leave the profession. Finally, *job satisfaction* is delineated as teachers' affective responses towards their work and the teaching profession (Carmeli and Weisberg, 2006; Skaalvik and Skaalvik, 2011). Many studies have already established a strong link between job satisfaction and the power of teachers to survive and even thrive in the profession (e.g. Ingersoll, 2001; Zembylas and Papanastasiou, 2006).

*The effect of transformational leadership of the principal on teachers' job attitudes*

In parallel with the findings that teachers have a direct effect on their pupils, principals can also directly influence their teaching staff (Griffith, 2004; Marks and Printy, 2003). In this respect, the leadership of the principal is an important school factor to take into account in relation to beginning teachers' job attitudes.

Transformational leadership is considered one of the most used leadership models in education (Bush, 2017; Gumus et al., 2016). It entails a supportive function of a leader (Hulpia et al., 2009), in which bottom-up participation is used to bridge teachers' individual action and the school's collective action (Leithwood, 1992). In particular, transformational leaders have several main qualities (Bass and Avolio, 1990). Charisma or inspirational motivation enables the leader to inspire and motivate employees

(Paffen, 2011) by developing commitment to collective goals (Bass, 1996; Griffith, 2004; Marks and Printy, 2003). Additionally, by means of stimulating employees intellectually, the leader brings out employees' creativity and problem-solving capabilities (Marks and Printy, 2003; Paffen, 2011), motivates open communication in the team, and encourages people's curiosity and eagerness to learn (Paffen, 2011). Finally, transformational leaders also possess the virtue of individualised consideration, meaning that they treat each employee as a unique individual (Marks and Printy, 2003) for whom they express genuine and authentic interest (Paffen, 2011).

In both international organisational psychology (e.g. Hater and Bass, 1988) and, to a lesser extent, educational leadership literature (e.g. Griffith, 2004; Nguni et al., 2006), transformational leadership is linked to (1) (intrinsic) motivation in the job, (2) affective organisational commitment, and (3) job satisfaction.

First, the organisational psychology literature has proven that when transformational leaders stimulate their employees intellectually and show sensitivity to their needs for growth, development, and self-actualisation, they promote *motivation* among the team members (Paffen, 2011). The relationship between the supportive function of leadership and intrinsic motivation is reflected by a transformational leader's ability to strengthen the feeling of belonging in a team (Bono and Judge, 2003), show awareness for and believe in team members' competences (Bono and Judge, 2003), and create a stimulating and challenging environment (Van den Broeck et al., 2009). In the educational leadership literature, Eyal and Roth (2011) confirmed these findings for the school context. More specifically, they found a positive relationship between transformational leadership and teachers' intrinsic motivation.

Second, transformational leadership provides an explanatory basis for *affective organisational commitment* (Berkovich and Eyal, 2017; Griffith, 2004; Kane and Tremble, 2000). In the organisational psychology literature, a number of scholars have found that by expressing transformational characteristics, leaders have the potential to motivate their team to look beyond their own needs and interests (Pillai and Williams, 2004; Podsakoff et al., 1996). In the educational literature, several studies have found that by means of increasing teachers' involvement in reaching goals (Moolenaar et al., 2010) and decision processes at the organisational level (Scott and Dinham, 2003), teachers' organisational commitment increases (Khasawneh et al., 2012; Koh et al., 1995).

Third, as per the general leadership meta-study of Dumdum et al. (2002), leaders' transformational behaviour appears to be highly correlated with employees' *job satisfaction*. In the

educational leadership literature, several studies have found that when leaders show sincere and authentic interest in the individuals in the team, motivate them intellectually, and inspire and motivate them to transcend their own self-interests in favour of collective goals (Marks and Printy, 2003), job satisfaction increases (Blase et al., 1986; Tesfaw, 2014).

These studies in both the organisational psychology literature (e.g. Kane and Tremble, 2000; Paffen, 2011) and, to a lesser extent, the educational literature (e.g. Blase et al., 1986; Marks and Printy, 2003) provide us with insights into the relationship between transformational leadership and job attitudes. However, studies examining the impact of transformational leadership of the principal simultaneously on each of these job attitudes in the context of beginning teachers are needed. Hence, this study proposes that:

> **H1:** *Transformational leadership of the principal is positively related to beginning teachers' intrinsic motivation to teach, affective organisational commitment, and job satisfaction.*

*The mediating role of professional collegial support in the relationship between transformational leadership of the principal, and teachers' job attitudes*

Professional collegial support is considered a second school factor in the present study. Beginning teachers have reported to be in need of professional conversations and advice from their colleagues, and various scholars in the educational field (e.g. Griffith, 2004; Runhaar et al., 2010) have emphasised the role of the leader herein. More specifically, leadership behaviour appears to have a direct effect on the professional relationships among employees (Griffith, 2004; Marks and Printy, 2003). The school leader's ability to be supportive and encouraging towards the team (Marks and Printy, 2003) creates effective and valuable ties between team members through the cultivation of mutual trust and respect (Griffith, 2004). Furthermore, by stimulating teachers intellectually, transformational leaders encourage employees to exchanges ideas and facilitate a team culture in which open communication and collaboration are central values (Leithwood and Jantzi, 1990; Marks and Printy, 2003; Minckler, 2014). As such, Runhaar and colleagues (2010) indicate that the more the school leader is perceived as a transformational leader, the greater the likelihood of team members meeting up to exchange feedback. In addition, it has been argued that by creating a collective sense of responsibility for achieving common and, consequently, organisational goals, teachers feel more united (Elmore, 2000) and are more likely to participate in collaboration initiatives and opportunities to exchange ideas (Hargreaves, 2007).

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In turn, receiving professional support from colleagues is found to increase beginning teachers' intrinsic motivation to teach (Gaikhorst et al., 2014; Hofman and Dijkstra, 2010), affective organisational commitment (Fox and Wilson, 2015; Struyve et al., 2016), and job satisfaction (Struyve et al., 2016). The relationship between professional collegial support and job attitudes can be explained by the above-mentioned JD-R model of Bakker and Demerouti (2007). In particular, by providing professional support, colleagues can stimulate beginning teachers' personal growth and development (Bakker and Demerouti, 2007). Considering this, professional collegial support can positively influence teachers' job satisfaction, motivation to teach, and commitment towards the team and school (Bakker and Demerouti, 2007; Skaalvik and Skaalvik, 2017). Several researchers (e.g. Coburn and Russell, 2008; Pogodzinski, 2014; Thomas et al., in progress; Van Waes et al., 2016) also emphasise the importance of the quality of these support relationships.

Even though the previous relationships have been explored, very few empirical investigations have looked into the possible mediating role of professional collegial support in the relationship between transformational leadership and job attitudes. Based on the available research concerning the relationship between transformational leadership and professional collegial support, and the relationship between professional collegial support and teachers' job attitudes, this study proposes the following two hypotheses in the context of teachers' first year in the profession:

> **H2:** *There is a positive relationship between professional collegial support and beginning teachers' intrinsic motivation to teach, affective organisational commitment, and job satisfaction.*
>
> **H3:** *Professional collegial support partially mediates the relationship between transformational leadership and beginning teachers' intrinsic motivation to teach, affective organisational commitment, and job satisfaction.*

Different from earlier research on professional collegial support, this study uses a social network perspective. In the social network perspective, relationships between individuals are considered to be conduits for the distribution of resources (Moolenaar et al., 2010). These resources that exist in the ties between individuals are conceptualised as 'social capital' (Daly, 2010). In the context of teacher relationships, these resources can be, for example, information and advice on class management, didactics, and teaching materials. Furthermore, in the social network perspective, an individual's collection of these ties with potential (Moolenaar et al., 2011) are labelled his or her ego network. In

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more technical terms, “an ego network is the network of contacts (alters) that form around a particular node (ego)” (Crossley et al., 2015: 18). In the present study, the egos are the first-year teachers and the alters are the colleagues that offer them social capital in the form of professional support. To analyse these ego networks, a specific social network methodology has been developed. The social network methodology offers the opportunity to consider the ties between individuals as the unit of analysis (De Lima, 2010), making it possible to study their characteristics. In summary, the added value of the network perspective for this study is two-fold. First, the network perspective offers an innovative way of looking at relationships as part of a network. Second, the network perspective is accompanied by specific analyses that provide a detailed investigation of this network.

*The mediating role of teachers’ self-efficacy in the relationship between transformational leadership of the principal and professional collegial support, and teachers’ job attitudes*

Besides transformational leadership of the principal and professional collegial support as factors at the school level, teachers’ self-efficacy, as a factor at the teacher level, is also included in the model. Self-efficacy refers to believing in one’s own skills and capabilities to bring about desired outcomes (Caprara et al., 2003; Tschannan-Moran and Woolfolk Hoy, 2001).

In the organisational psychology literature, transformational leadership has been argued to influence self-efficacy in a positive way (Bass and Riggio, 2006; House and Shamir, 1993). Geijsel et al. (2009) confirm this finding for school contexts and explain this positive relationship by referring to the three strong characteristics of transformational leaders. First, team members’ self-efficacy is elevated by the leaders’ ability to build a collective vision. Second, the authors underline the importance of leaders’ ability to enhance individuals’ problem-solving capabilities and awareness of their beliefs and values. Third, the mentoring role of transformational leaders is also considered important. By coaching individuals, their capacities are stimulated and, consequently, their self-efficacy is elevated. The positive relation between transformational leadership and teachers’ self-efficacy is also confirmed by several other organisational psychology scholars (e.g. House and Shamir, 1993; Pillai and Williams, 2004), who have argued that demonstrating confidence in employees’ capabilities and showing appreciation for employees’ good work are important factors for the development of self-efficacy.

In turn, several researchers have found that people with a low sense of self-efficacy are more likely to quit the teaching profession (e.g. Høigaard et al., 2012; Jepson and Forrest, 2006). Similarly, self-efficacy beliefs are not only related to one’s behaviour but also to one’s job attitudes (Bandura, 1997;

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Bogler and Somech, 2004; McNatt and Judge, 2008). In this respect, organisational psychology and educational studies have shown that self-efficacy can be linked to intrinsic motivation to teach (e.g. Bandura, 1997; Deci and Ryan, 2000), organisational commitment (e.g. Akhtar et al., 2013; Bogler and Somech, 2004), and job satisfaction (e.g. Klassen and Chiu, 2010).

In the previous paragraphs, transformational leadership was considered an important factor for self-efficacy and, in turn, self-efficacy was related to an increase in job attitudes. The potential of self-efficacy as a mediating factor in the relationship between transformational leadership and several job attitudes has been confirmed by various scholars in the organisational psychology literature (e.g. Pillai and Williams, 2004; Yukl, 1998). Moreover, the JD-R model acknowledges the mediating role of self-efficacy (e.g. Xanthopoulou et al., 2007). In particular, the model argues that job resources provided by the leader can stimulate personal resources, such as increasing employees' confidence in their own capabilities. In turn, the higher employees' self-efficacy, the more positive their attitudes concerning the job and the organisation. However, there is a dearth of research in the educational domain that investigates if, and to what extent, self-efficacy can play a mediating role in this relationship under study – particularly in the context of beginning teachers. Based on the existing literature on self-efficacy, this study puts forward the following hypotheses:

> **H4:** *Teachers' self-efficacy is associated with higher levels of beginning teachers' intrinsic motivation to teach, affective organisational commitment, and job satisfaction.*
>
> **H5:** *The relationship between transformational leadership of the principal and beginning teachers' intrinsic motivation to teach, affective organisational commitment, and job satisfaction is partially mediated by teachers' self-efficacy.*

Furthermore, and based on the JD-R model, self-efficacy can also play a mediating role in the relationship between professional collegial support and job attitudes. As a transformational leader, colleagues can also be considered key actors providing job resources that have the potential to enhance employees' belief in their own capabilities, which in turn may lead to more positive feelings towards their job and the organisation (e.g. Mastenbroek et al., 2014; Xanthopoulou et al., 2007). However, research on the mediating role of self-efficacy in the relationship between collegial support as a job resource and teachers' job attitudes in the context of beginning teachers is missing. Inspired by the importance of the mediating role of self-efficacy (Demerouti and Bakker, 2011) and taking into account

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previous research indicating the positive influence of transformational leadership on professional collegial support (e.g. Runhaar et al., 2010), this study proposes that:

> **H6:** *Transformational leadership is related to professional collegial support, which in turn influences teachers' self-efficacy, leading to an influence on teachers' job attitudes.*

**Research goal**

Previous studies, both in the organisational psychology and educational literature, have studied the links between factors at the organisational (i.e. transformational leadership, professional collegial support) and individual level (i.e. self-efficacy), on the one hand, and job attitudes, on the other (e.g. Deci and Ryan, 2000; Griffith, 2004; Penuel, et al., 2009). The aim of this study is to propose a model of the interplay between all of these factors in the context of first-year teachers (see Figure 1). In this interplay, the main focus is on transformational school leadership, as this is considered a key factor in the influence of the other variables involved (e.g. Geijsel et al., 2009; Marks and Printy, 2003).

[Insert figure 1 here]

**Methods**

*Sample and procedure*

In May 2016, all teacher training programmes in Flanders offering a degree in primary education were contacted. In total, 15 teacher training programmes from 11 colleges agreed to participate in the study and contacted their graduate class of 2015 via email. In this email, the graduates were asked to fill out an online survey. The link to the survey was sent out to 1,201 graduates. A total of 446 graduates returned their questionnaire, resulting in a 37.14% response rate. The response rate is in line with former studies using similar data gathering procedures (Burke, 2001), and other research focused on first-year teacher education graduates in Flanders (Schepens et al., 2009).

Females accounted for 89.5% of the sample. The dominance of female participants was expected, since 80% of teacher trainees at the primary level are female (Mckenzie et al., 2004). In the survey, the graduates were asked to fill in demographic information and respond to questions concerning their career path. The age of graduates in the sample ranged from 20 to 54 years ($M$=24.39, $SD$=5). In total, 65% ($n$=292) had a teaching job, while 7.6% had a job outside of the educational field. Of the



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remaining 27.4%, 22% were pursuing a supplementary degree and 5.4% were unemployed. The remainder of the survey had to be completed by participants with a teaching job only (*n*=292). This group formed the sample of this study and, hereafter, will be referred to as first-year primary school teachers. The sample of first-year primary school teachers had an average of 215 days' experience (*SD*=90).

*Measures*

The central concepts were measured in two ways. First, teachers' job attitudes, teachers' self-efficacy, and transformational leadership of the principal were measured using validated instruments. Second, professional collegial support was investigated by using the social network perspective.

*Variables measured by using validated instruments.* Table 1 provides an overview of the validated instruments to measure teachers' job attitudes, teachers' self-efficacy, and transformational leadership of the principal, including example items, range, number of items, and Cronbach's alpha coefficients.

[Insert table 1 here]

*Variables measured by using the social network perspective.* Professional collegial support ties between beginning teachers (i.e. *ego*) and their colleagues (i.e. *alters*) were operationalised in two social network measures, namely self-reported in-degree and perceived usefulness of support, calculated using the social network software UCINET (Borgatti et al., 2002).

***Self-reported in-degree.*** In the survey, the first-year primary school teachers were asked "From which of your colleagues do your receive professional support?" Professional support was defined in the survey as support that helps teachers develop the required competences and grow professionally, such as help with pedagogy, didactics, and classroom management (see Snoek et al., 2010). In-degree is the number of colleagues nominated by the participant as professional support givers. As the data for this study were gathered via a personal network design (Borgatti et al., 2013), only the first-year primary school teachers were questioned. Their colleagues were not included in the sample. As a result, the in-degree reported in this study is a self-reported measure.

***Perceived usefulness of professional support***. The first-year primary school teachers were also asked to give more information concerning the characteristics of their nominated colleagues (such as gender and educational experience) and features of their relationships with these colleagues. Concerning the latter, the first-year primary school teachers could indicate the usefulness of the support received by



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their colleagues on a 5-point Likert scale from 1='never useful' to 5='always useful'. Based on this information, perceived usefulness of professional support, referring to what extent beginning teachers perceive the professional support from their colleagues as useful, was calculated. In doing so, this study aims to take the quality of ties into account, following earlier studies that emphasise its importance (e.g. Coburn and Russell, 2008; Pogodzinski, 2014; Thomas et al., in progress; Van Waes et al., 2016). Although the first-year primary school teachers had to indicate the usefulness of support for every nominated colleague, these ratings, on the alter level, were aggregated for this study. The mean usefulness for all nominated colleagues was calculated for every first-year primary school teacher (*ego*). The intraclass correlation coefficient (ICC) was above .60 (*ICC*=.78), indicating that the aggregation was legitimate (Shrout and Fleiss, 1979).

*Data analysis*

First, descriptive statistics concerning teachers' job attitudes, teachers' self-efficacy, transformational leadership of the principal, and professional collegial support were calculated. For professional collegial support, homogeneity (i.e. similarity among egos' alters) and homophily (i.e. similarity among egos and their alters) were calculated for both gender and experience. Second, correlations among the variables of interest used in the path analysis were calculated. Third, a path analysis was performed to test the research model and its hypotheses. The path analysis was performed in Mplus version 7.4 (Muthén and Muthén, 1998-2015). To perform the analysis, the maximum likelihood with the MLR estimator was used because of its robustness for non-normality. To assess model fit, we used multiple fit indices, namely the $\chi^2$ test, comparative fit index (CFI), Tucker–Lewis Index (TLI), standardised root mean residual (SRMR), and the root mean square error of approximation (RMSEA). The fit of the model is good in the case of a non-significant $\chi^2$ test ($p>.05$) (Hu and Bentler, 1999). Concerning both CFI and TLI, a critical value of .90 is acceptable, whereas values above .95 are good. Finally, regarding the SRMR and RMSEA, a fit between .06 and .08 is considered reasonable and a fit below .06 is considered good (Hu and Bentler, 1999).

## Results

*Descriptive statistics*

*Professional collegial support.* On average, first-year primary school teachers had six colleagues in their professional support network (in-degree; *M*=5.72; *SD*=3.22) from whom the usefulness of the professional support was estimated highly (*M*=4.46; *SD*=.50) (see Table 3). Apart from

these two network measures that were used in the path analysis, for the attributes gender and experience, homogeneity and homophily were calculated. Table 2 shows that there is homogeneity for gender. In particular, both male and female first-year teachers mostly receive professional support from female colleagues (*IQV* female participants=.32; *IQV* male participants=.39). Moreover, there is homophily for female (*EI-index*=.-72) and heterophily for male first-year teachers (*EI-index*=.69). This means that female first-year teachers mostly received support from the same sex, while male first-year teachers mostly received support from the opposite sex. The results concerning experience demonstrate that professional support is mostly offered by more experienced colleagues. This indication of heterophily is reflected in the average of absolute difference between first-year teachers and their colleagues (*M*=15.74 years). Finally, homogeneity (i.e. the extent to which first-year teachers' supportive colleagues are similar in experience) is also reflected in the standard deviation of alters' experience (*SD*=6.38 years).

[Insert table 2 here]

*Descriptive statistics and correlations.* In Table 3, the means, standard deviations, and correlations among the study variables are displayed. The descriptive statistics demonstrate that the mean scores for intrinsic motivation to teach, affective organisational commitment, and job satisfaction are high (*M*=3.35, *SD*=.53; *M*=3.26, *SD*=.71; *M*=3.35, *SD*=.55, respectively), indicating that first-year primary school teachers in the sample are satisfied with their job, feel emotionally attached to the school, and are motivated to teach because of the activity of the profession itself. Furthermore, the results reveal moderate to high levels of transformational leadership (*M*=2.81, *SD*=.78) and self-efficacy (*M*=2.67, *SD*=.41). The correlation matrix shows significant positive correlations among the study variables. Based on the non-significant correlation between self-reported in-degree of professional support and teachers' self-efficacy (*r*=.003), for Hypothesis 6, only the path between perceived usefulness of professional support and self-efficacy was included in the research model.

[Insert table 3 here]

*Path analysis*

To test our hypotheses, path analysis was used. First, the theoretical model (see Figure 1) was fitted. Second, using the critical ratio (CR), the insignificant pathways were deleted. This second step was



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conducted because of the parsimony principle: "given two models with similar fit to the data, the simpler model is preferred" and "models with greater degrees of freedom have withstood a greater potential for rejection" (Kline, 2015: 128). More specifically, non-significant relationships (CR) were deleted one by one, starting with the highest p-value (CR). In total, four relationships were removed: the relationship between (1) 'teachers' self-efficacy' and 'affective organisational commitment' ($p$=.292), (2) 'perceived usefulness' and 'affective organisational commitment' ($p$=.086), (3) 'perceived usefulness' and 'intrinsic motivation to teach' ($p$=.096), and (4) 'perceived usefulness' and 'job satisfaction' ($p$=.125). After removing these non-significant relationships, all remaining pathways were supported. The overall goodness-of-fit indices show that the research model provides an acceptable fit to the data: $\chi^2$=10.752, *df*=6, *p*=.0963, *CFI*=.984, *TLI*=.944, *SRMR*=.038, and *RMSEA*=.053. The regression weights and significance levels of the direct effects and explained variances of the variables in the model are displayed in Figure 2. The results concerning the hypotheses are discussed below.

[Insert figure 2 here]

*Hypotheses concerning direct relationships in the model (H1, H2, H4)*. Hypotheses 1, 2, and 4 investigate how and to what extent the factors at the school level (i.e. transformational school leadership, professional collegial support) and the teacher level (i.e. teachers' self-efficacy) are directly related to beginning teachers' job attitudes. In this regard, the first hypothesis (H1) was confirmed: transformational leadership of the principal is positively related to beginning teachers' intrinsic motivation to teach ($\beta$=.161, *SE*=.067, *p*=.016), affective organisational commitment ($\beta$=.322, *SE*=.062, *p*=.000), and job satisfaction ($\beta$=.319, *SE*=.061, *p*=.000). The second hypothesis (H2) examines the relationship between professional collegial support and teachers' job attitudes. This hypothesis was corroborated for the relationship between beginning teachers' self-reported in-degree and all job attitudes, more specifically, intrinsic motivation to teach ($\beta$=.131, *SE*=.051, *p*=.009), affective organisational commitment ($\beta$=.210, *SE*=.048, *p*=.000), and job satisfaction ($\beta$=.216, *SE*=.043, *p*=.000). However, this hypothesis could not be confirmed for the relationships between perceived usefulness of professional collegial support and all three of the job attitudes. Finally, the hypothesis concerning the relationship between teachers' self-efficacy and job attitudes (H4) was confirmed for both intrinsic motivation to teach ($\beta$=.298, *SE*=.056, *p*=.000) and job satisfaction ($\beta$=.223, *SE*=.061, *p*=.000) but not for affective organisational commitment.

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*Hypotheses concerning indirect relationships in the model (H3, H5, H6).* Hypotheses 3, 5, and 6 examine how and to what extent transformational school leadership is indirectly related to beginning teachers' job attitudes. In Table 4, the results of the conventional tests of significance for testing indirect effects are presented. However, as these are not always reliable, the bootstrap method was also applied (MacKinnon et al., 2004). More specifically, to ensure high precision, unstandardised indirect effects for each of the 10,000 samples were calculated. In Table 4, the 95% intervals resulting from this bootstrapping procedure are presented.

Hypothesis 3 examines the mediating role of professional collegial support in the relationship between transformational leadership and teachers' job attitudes. The results reveal that self-reported in-degree of professional collegial support plays a mediating role in the relationship between transformational leadership of the principal and beginning teachers' intrinsic motivation to teach ($\beta$=.032, *SE*=.013, *p*=.017), affective organisational commitment ($\beta$=.051, *SE*=.016, *p*=.001), and job satisfaction ($\beta$=.052, *SE*=.015, *p*=.000). The direct relationships between transformational leadership and intrinsic motivation to teach, affective organisational commitment, and job satisfaction remain significant when taking into account the indirect effect of self-reported in-degree (see Figure 2). Therefore, it must be noted that self-reported in-degree only partially mediates the relationships under study. Furthermore, the results reveal that perceived usefulness of professional support does not play a mediating role in the relationship between transformational leadership and each of the three job attitudes. The insignificance of the indirect effect via perceived usefulness is evident, as the results mentioned above already revealed an insignificant relationship between perceived usefulness and teachers' intrinsic motivation to teach, affective organisational commitment, and job satisfaction. The relationship between transformational leadership and perceived usefulness, however, was found to be significant ($\beta$=.200, *SE*=.063, *p*=.001). Hypothesis 5 investigates the mediating role of teachers' self-efficacy in the relationship between transformational leadership and teachers' job attitudes. The results reveal that teachers' self-efficacy plays a mediating role in the case of both intrinsic motivation to teach ($\beta$=.071, *SE*=.022, *p*=.001) and job satisfaction ($\beta$=.053, *SE*=.018, *p*=.003). As the direct relationship between transformational leadership and both intrinsic motivation to teach and job satisfaction (see Figure 2) remains significant in the presence of the indirect effect, teachers' self-efficacy must be considered a partial mediator. The relationship between transformational leadership and affective organisational commitment is not mediated by teachers' self-efficacy, as is evident from the findings mentioned above. The sixth and final

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hypothesis examined whether transformational leadership influences perceived usefulness of professional support and, in turn, affects teachers' self-efficacy, eventually influencing teachers' job attitudes. For teachers' affective organisational commitment, the insignificance of this indirect effect is evident, as the results already revealed that a direct relationship between self-efficacy and affective organisational commitment is absent. For teachers' intrinsic motivation to teach and job satisfaction, all direct pathways included in the indirect relationship are significant; however, the results from the conventional test of significance show that the indirect effect under study is not significant. The confidence intervals created by the bootstrapping method, however, indicate that for intrinsic motivation to teach ([.001; .021]) and job satisfaction ([.001; .016]), the indirect effect is significant.

[Insert table 4 here]

**Discussion**

The present study empirically explored the interplay of factors at the school level (i.e. transformational school leadership and professional collegial support) and the teacher level (i.e. self-efficacy) influencing teachers' job attitudes, known to be important precursors of teacher retention. Both the direct effects of the aforementioned factors and the indirect effects of transformational leadership via professional collegial support and teachers' self-efficacy were examined and are discussed in turn below. The construction of the hypothesised model was anchored in the JD-R model of Bakker and Demerouti (2007).

By testing the interplay of these school level and teacher level factors in the context of teachers' first year in the profession, this work aimed to extend the literature on beginning teachers by focusing on first-year teachers only. Most studies on beginning teachers have used samples consisting of teachers with experience ranging from one to three (e.g. Struyve et al., 2016) or five years (e.g. De Neve and Devos, 2017). However, in the first years of teaching, teachers evolve significantly; they experience intensive professional development (Kelchtermans and Ballet, 2002), and their professional identity develops rapidly (Flores and Day, 2006). In this respect, teachers with five years of experience are quite different from teachers with three years of experience, and this is even more the case for teachers who are in the first year of teaching (see Clotfelder et al., 2007; Kane et al., 2008). By limiting the sample to first-year teachers, this study aimed to avoid the generalisation of findings for heterogeneous groups of

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beginning teachers and, more importantly, aimed to shed light on teachers' earliest experiences in the profession.

*Findings of the study*

Several major themes can be discussed. First, the results show that teachers' perception of transformational school leadership is directly and positively related to teachers' job attitudes. This means that the more first-year teachers perceive their principal to have transformational abilities, the more satisfied they are with the job, feel affectively committed to the school, and are intrinsically motivated to teach. This finding corresponds to previous research both in the organisational psychology and educational fields (see, for example, Kane and Tremble, 2000; Leithwood and Yantzi, 2000) and more specifically to studies using samples of teachers with more varied levels of teaching experience (see, for example, Eyal and Roth, 2011; Nguni et al., 2006; Tesfaw, 2014). Interestingly, the mean scores of the job attitudes for the first-year teachers in the present study are slightly higher than the mean scores found in earlier research on beginning teachers that used a sample with a broader range of teaching experience (e.g. Struyve et al., 2016).

Second, the path analysis revealed that transformational school leadership has a statistically significant relationship with professional collegial support, measured by self-reported in-degree and perceived usefulness. This means that the higher the perception of the principal as a transformational leader, the higher the number of colleagues reported by the first-year teacher as providers of professional support and the higher the usefulness of this professional support. The role of the principal in stimulating positive professional ties among colleagues corresponds to the results of previous educational studies concerning this matter (e.g. Griffith, 2004; Leithwood and Jantzi, 1990).

In turn, professional collegial support is positively related to teachers' job attitudes. This confirms earlier research stressing that receiving professional support from colleagues (Johnson, 2006) can be considered an important factor in how teachers feel and think about the profession, which is important in preventing them from dropping out early (Rippon and Martin, 2006). In this respect, Struyve et al. (2016) revealed that even though professional support from colleagues is an important antecedent for the job attitudes of teachers in general, this is even more the case for teachers in the first years of their profession. Beginning teachers have more need to discuss work-related issues (Kilgore and Griffin, 1998), and the satisfaction of this need is pivotal in their decision to stay in or leave the profession (Anhorn, 2008). Important to note, however, is that only self-reported in-degree of professional collegial



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support is significantly related to teachers' job attitudes. In short, the importance of the quality of support (Coburn and Russell, 2008; Pogodzinski, 2014; Van Waes et al., 2016) could not be confirmed in the present study. This result warrants further examination, preferably by means of a mixed-methods study where usefulness of support and its influence on teachers' job attitudes can be investigated in more detail (Crossley et al., 2015). Furthermore, the result that the number of colleagues perceived by the first-year teachers as providers of professional support positively influences teachers' job attitudes implies the importance of support for beginning teachers as a school-wide responsibility (Feiman-Nemser, 2001). By using the social network perspective in which the school team is conceived as a web of ties through which informal sources of support and expertise can be exchanged, this study reveals that all team members could be considered potential providers of support (Fox and Wilson, 2015).

Moreover, besides direct relationships between transformational leadership and professional collegial support, on the one hand, and between professional collegial support and teachers' job attitudes, on the other, the present study also confirmed the hypothesis concerning the partial mediating role of professional collegial support in the relationship between transformational leadership and teachers' job attitudes. In particular, the results revealed that the transformational leaders can positively affect beginning teachers' job attitudes partly by increasing the number of colleagues supporting the beginning teacher. Concerning the number of supportive colleagues, the social network analysis revealed that the first-year teachers participating in the present study indicated receiving support from, on average, six colleagues. Based on the finding that an average primary school team in Flanders comprises 18 people (Flemish Department of Education and Training, 2016), we can assume that first-year teachers indicate being professionally supported by, on average, one-third of their team. Furthermore, most of the nominated colleagues were quite experienced. Earlier research acknowledges the importance of support from experienced teachers, as it grants beginners access to the expertise needed to survive the daily work routine (Fox and Wilson, 2015).

Third, the role of transformational leadership in increasing teachers' self-efficacy (e.g. Bass and Riggio, 2006; House and Shamir, 1993) is also confirmed in the present study on first-year primary school teachers. The explained variance in teachers' self-efficacy, however, is low, which is consistent with the findings of Minckler (2014), who indicates that school leadership is not perceived by teachers as having a particularly strong influence on the beliefs in their abilities. Furthermore, self-efficacy also appears to be positively related to both intrinsic motivation to teach and job satisfaction. Surprisingly, a

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positive pathway between teachers' self-efficacy and affective organisational commitment was lacking. This result contradicts previous findings (Akhtar et al., 2013; Bogler and Somech, 2004) showing that self-efficacy was found to be a predictor of organisational commitment. However, it is difficult to compare the findings of the present study with those of previous studies, as they were conducted in different contexts. The study conducted by Akhtar et al. (2013) was situated in the organisational psychology field and examined employees' self-efficacy in relation to commitment in general. The study conducted by Bogler and Somech (2004) involved a sample of secondary teachers with an average teaching experience of 13.5 years. Further research concerning the processes behind the lack of the relationship between teachers' self-efficacy and affective organisational commitment in the context of first-year teachers is needed. In addition, in the present study, the indirect effect of transformational leadership via teachers' self-efficacy was also found to be significant for both intrinsic motivation to teach and job satisfaction. This indicates that transformational leaders have the ability to increase teachers' motivation and satisfaction partly by increasing their self-efficacy. In this respect, the present study confirms previous findings from the organisational psychology field concerning the mediating role of self-efficacy (e.g. Pillai and Williams, 2004; Yukl, 1998) as a personal resource in the relationship between job resources and psychological and organisational outcomes (Bakker et al., 2003; Xanthopoulou et al., 2007), specifically for the context of first-year teachers.

Fourth, the results demonstrate that the usefulness of professional collegial support has a small ($\beta$=.120) but significant relationship ($p$=.046) with teachers' self-efficacy. The hypothesised indirect path from transformational leadership to professional collegial support, which in turn leads to an increase in teachers' self-efficacy and results in elevated job attitudes, appeared to be non-significant using conventional tests and significant using the bootstrap method. Moreover, the indirect effects were very small ($\beta$=.007 for intrinsic motivation to teach; $\beta$=.005 for job satisfaction). This was unexpected, as previous research using the JD-R model found strong evidence that support from colleagues as a job resource can affect people's belief in their capabilities, and in turn influences how they think and feel about the profession (e.g. Bakker et al., 2003; Xanthopoulou et al., 2007). An explanation could be found in the social cognitive theory of Bandura (1977). Bandura (1997) argues that the most important sources of self-efficacy are mastery experiences (i.e. successful teaching experiences) (Tschannan-Moran and Woolfolk Hoy, 2007). The teachers in the sample of the present study had just begun their career, so their self-efficacy may not be strongly influenced by professional collegial support, as the support could not

yet result in successful teaching experiences. They are only in the first year of the profession, which causes limited time for received support to be actually implemented in their practice and ultimately bring about positive change. Previous research that did find a substantial significant relationship between collegial support and self-efficacy was either situated in the organisational psychology context (e.g. Xanthopoulou et al., 2007) or, if situated in the educational context, used a sample of beginning teachers with a broader range of experience, more specifically, a sample ranging from one to five years of experience (e.g. De Neve and Devos, 2017). Further research on the relationship between first-year teachers' professional collegial support and self-efficacy is needed to provide more clarity.

*Implications for practice and policy*

The results of the study have several implications. First, the importance of a transformational leadership style in enhancing first-year teachers' job attitudes could be translated into increased investment in professional development programmes for principals (Hallinger and Lu, 2013), in which training in transformational capabilities is emphasised. Training of this nature, however, is challenging, as transformational abilities are highly associated with personal styles, beliefs, attitudes, mind-set, and awareness (Vanblaere and Devos, 2016).

Second, the results revealed a positive relationship between professional collegial support and first-year teachers' job attitudes and the potential role of the principal in this matter. In this respect, principals should be encouraged to consider induction support as a school-wide responsibility instead of limiting this support to mentorship only (Feiman-Nemser, 2001). More specifically, principals should be made more aware of their role in the cultivation of the supportive ties among colleagues and be encouraged to create the structural, cultural, and formal conditions that are important for teachers to meet and exchange ideas (Fox and Wilson, 2015; Kelchtermans, 2006; Leithwood, 1992; Minckler, 2014). Structurally, leaders can achieve this by creating time and space for teachers to develop professional support ties, for example, with shared scheduling time (Minckler, 2014) and investing in an inviting staffroom (Struyve et al., 2016). Culturally, they can promote professional collegial support by shaping a school culture with norms of collegiality, collective and mutual responsibility, and accountability for one another's support (Elmore, 2000; Kruse and Louis, 2009; Minckler, 2014). Formally, principals can play a vital role in developing and nourishing pairs or groups of teachers that can support each other professionally, such as professional learning communities (PLCs) (Geijsel et al., 2009; Hargreaves, 2007) and co-teaching initiatives (Struyve et al., 2016). A crucial caveat, however, is that these conditions

are important, but not sufficient (Hargreaves, 1992; Kelchtermans, 2006; Kwakman, 2003). The issue of professional collegial support is complex, so other factors, such as the balance between professional collegial support and autonomy (Clement and Vandenberghe, 2000) and teachers' personal characteristics (Kwakman, 2003) must also be considered.

Third, the analysis revealed that transformational principals can elevate first-year teachers' self-efficacy, which, in turn, increases their intrinsic motivation to teach and job satisfaction. The explained variance in teachers' self-efficacy, however, is low. In this regard, Minckler (2014) advises principals to invest in the four main determinants of self-efficacy as described by Bandura (1977) in his social cognitive theory, namely (1) mastery experiences, (2) vicarious experiences, (3) social persuasion, and (4) affective state. First, mastery experiences can be described as positive perceptions of past performances (Goddard et al., 2004). When teachers feel satisfied with a teaching accomplishment, it contributes to their self-efficacy and expectation that future performances will be effective (Goddard et al., 2004; Tschannan-Moran and Woolfolk Hoy, 2007). In this respect, Minckler (2014) advises principals to provide teachers opportunities to develop necessary skills and competences. Second, vicarious experiences refer to observing others with whom teachers can identify (Bandura, 1977). When the models they observe perform well, the teachers believe in their own abilities to make progress in their teaching (Bandura, 1977; Goddard et al., 2004). Principals could meet this need for vicarious experiences by planning peer observations in the schedule (Minckler, 2014). Third, social persuasion pertains to the activity in which people are convinced that they are able to deal with the situation successfully (Bandura, 1977). Social persuasion could be enacted by providing specific and sincere feedback from the principal and colleagues (Goddard et al., 2004; Minckler, 2014). Fourth, affective states are also considered to influence teachers' self-efficacy. When teachers experience high levels of stress and anxiety in stressful situations, their expectations of success are diminished (Bandura, 1977). The principal, however, could guide teachers in coping with these stressful situations (Bandura, 1977), teach them to withstand pressure (Goddard et al., 2004), and provide a safety net for teachers to create positive experiences (Minckler, 2014).

*Limitations and suggestions for further research*

The present study has certain limitations and gives rise to suggestions for further research. First, the measures concerning professional collegial support capture the number of colleagues perceived by first-year teachers as support givers and the self-reported usefulness of this support; nevertheless, the nature

of these ties still need to be uncovered. In this respect, it could be interesting to explore both the content of the professional collegial support ties and the colleagues involved in these ties (e.g. teachers from the same grade, teachers from nearby classrooms). More research could refine the social network findings from the present study by using more advanced quantitative social network techniques and/or combining the quantitative findings with in-depth qualitative research methods in a mixed-methods study design (Crossley et al., 2015).

Second, the finding that first-year teachers are mainly supported by female co-workers must be nuanced, as the staff in primary schools in most Western countries, including Belgium, are mainly female (Cushman, 2010). As a result, there are only a few male colleagues in Flemish primary school teams. Therefore, the finding of homophily for female first-year teachers and heterophily for male first-year teachers must be interpreted cautiously. As the data were gathered via an ego network design (Borgatti et al., 2013), only the colleagues who were nominated by the first-year teacher were taken into account. The lack of whole-school data precludes any conclusions regarding the nature of the homophily effect. As a result, we cannot determine if the homophily effect for female first-year teachers and the heterophily effect for male first-year teachers can be attributed to a majority of women and a minority of men working in the school or to an actual preference for female teachers.

Third, some explained variances in the variables under study are rather small, probably because of the complex nature of these concepts, implying that they may be influenced by many other variables not included in the model. Furthermore, a second explanation could be the small standard deviations, suggesting a low variation in the scores between participants and indicating a certain bias in the sample. For self-efficacy in particular, a third explanation could be the limited time the teachers in the present study had spent in their school. The sample consisted of first-year teachers who only recently graduated from college. In this respect, it could be assumed that the school context and the principal had few opportunities to influence teachers' beliefs about their teaching abilities. Further research is needed in this regard.

Fourth, the study's findings were collected through self-reported measures of the first-year primary school teachers. The self-reported nature of these measures implies that the results must be interpreted carefully. Further research could triangulate data by using a combination of sources (e.g. first-year teachers, principal, colleagues) and/or methods (e.g. survey, interviews) (Cohen et al., 2013). In this

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respect, it could be useful to examine both principals' self-ratings of their leadership and teachers' perceptions of their leadership (see, for example, Park and Ham, 2016).

Fifth, the cross-sectional design of the present study inhibited causal conclusions. Research embedded within a longitudinal design can confirm our findings and enable us to make any conclusions concerning causality.

Finally, generalisation based on the present study's results is restricted, as the Flemish context may differ from other countries and regions. In developing countries, for example, teachers are confronted with poor working conditions and high demographic growth (Rinke, 2008), which could influence the relationships under study. Consequently, assumptions about the replicability of our findings in other contexts should be treated with caution. Interestingly, however, several studies from other developed countries (e.g. Marks and Printy, 2003) and developing countries (e.g. Khawary and Ali, 2015; Nguni et al., 2006; Tesfaw, 2014) have already found evidence for the direct relationship between transformational leadership and several teachers' job attitudes. This supports the argument that transformational leadership is important across various societies and as such should receive attention.

Accepted

**References**

Akhtar S, Ghayas S and Adil A (2013) Self-efficacy and optimism as predictors of organizational commitment among bank employees. *International Journal of Research Studies in Psychology* 2(2): 33–42.

Anhorn R (2008) The profession that eats its young. *Delta Kappa Gamma Bulletin* 74(3): 15-26.

Arnup J and Bowles T (2016) Should I stay or should I go? Resilience as a protective factor for teachers' intentions to leave the teaching profession. *Australian Journal of Education* 60(3): 229-244.

Bakker AB and Demerouti E (2007) The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology* 22(3): 309–328.

Bakker AB, Demerouti E and Schaufeli WB (2003) Dual processes at work in a call centre: An application of the job demands–resources model. *European Journal of Work and Organizational Psychology* 12(4): 393–417.

Bandura A (1977) Self-efficacy: Toward a unifying theory of behavioral change. *Psychological review* 84(2): 191–215.

Bandura A (1997) *Self-efficacy: The exercise of control*. New York, NY: W.H. Freeman.

Bass BM (1996) *A new paradigm for leadership: An inquiry into transformational leadership.* Alexandria: US Army Research Institute.

Bass BM and Avolio BJ (1990) The implications of transactional and transformational leadership for individual, team, and organizational development. In: Woodman RW and Pasmore WA (eds) *Research in organizational change and development* (Vol. 4). Greenwich, CT: JAI Press, pp. 231-272.

Bass BM and Riggio RE (2006) *Transformational leadership*. Mahwah, NJ: Erlbaum.

Berkovich I and Eyal O (2017) Emotional reframing as a mediator of the relationships between transformational school leadership and teachers' motivation and commitment. *Journal of Educational Administration* 55(5): 450-468.

Blase JJ, Derick C and Strathe M (1986) Leadership behavior of school principals in relation to teacher stress, satisfaction, and performance. *Journal of Humanistic Counseling, Education, and Development* 24(4): 159–171.

Accepted

Bogler R and Somech A (2004) Influence of teacher empowerment on teachers' organizational commitment, professional commitment and organizational citizenship behavior in schools. *Teaching and Teacher Education* 20(3): 277–289.

Bono JE and Judge TA (2003) Self-concordance at work. Toward understanding the motivational effects of transformational leaders. *Academy of Management Journal* 46(5): 554–571.

Borgatti SP, Everett MG and Freeman LC (2002) *Ucinet 6 for Windows: Software for social network analysis*. Harvard, MA: Analytic Technologies.

Borgatti SP, Everett MG and Johnson JC (2013) *Analyzing social networks*. London: Sage.

Borman GD and Dowling NM (2008) Teacher attrition and retention: A meta-analytic and narrative review of the research. *Review of Educational Research* 78(3): 367–409.

Burke RJ (2001) Organizational values, work experiences and satisfactions among managerial and professional women. *Journal of Management Development* 20(4): 346-353.

Bush T (2017) The enduring power of transformational leadership. *Educational Management Administration & Leadership* 45(4): 563–565.

Canrinus ET, Helms-Lorenz M, Beijaard D, et al. (2012) Self-efficacy, job satisfaction, motivation and commitment: Exploring the relationships between indicators of teachers' professional identity. *European Journal of Psychology of Education* 27(1): 115–132.

Caprara GV, Barbaranelli C, Borgogni L, et al. (2003) Efficacy beliefs as determinants of teachers' job satisfaction. *Journal of Educational Psychology* 95(4): 821–832.

Carmeli A and Weisberg J (2006) Exploring turnover intentions among three professional groups of employees. *Human Resource Development International* 9(2): 191–206.

Clement M and Vandenberghe R (2000) Teachers' professional development: A solitary or collegial (ad)venture? *Teaching and Teacher education* 16: 81–101.

Clotfelder C, Ladd H and Vigdor J (2007) Teacher credentials and student achievement: Longitudinal analysis with student fixed effects. *Economics of Education Review* 26(6): 673–682.

Coburn CE and Russell JL (2008) District policy and teachers' social networks. *Educational Evaluation and Policy Analysis* 30(3): 203-235.

Cohen L, Manion L and Morrison K (2013) *Research methods in education*. Abingdon: Routledge.

Accepted

Cooper JM and Alvarado A (2006) *Preparation, recruitment, and retention of teachers*. Paris: IIEP & IAE, UNESCO.

Crossley N, Bellotti E, Edwards G, et al. (2015) *Social network analysis for ego-nets*. London: SAGE.

Cushman P (2010) Male primary school teachers: Helping or hindering a move to gender equity? *Teaching and Teacher Education* 26(5): 1211–1218.

Daly AJ (2010) *Social network theory and educational change*. Cambridge: Harvard Education Press.

de Lima JÁ (2010) Thinking more deeply about networks in education. *Journal of Educational Change* 11(1): 1–21.

De Neve D and Devos G (2017) Psychological states and working conditions buffer beginning teachers' intention to leave the job. *European Journal of Teacher Education* 40(1): 6–27.

Deci EL and Ryan RM (2000) The 'what' and 'why' of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry* 11(4): 227–268.

Demerouti E and Bakker AB (2011) The Job Demands–Resources model: Challenges for future research. *SA Journal of Industrial Psychology* 37(2): 1–9.

Demerouti E, Bakker AB, Nachreiner F, et al. (2001) The job demands-resources model of burnout. *Journal of Applied Psychology* 86: 499-512.

Dumdum UR, Lowe KB and Aviolo BJ (2002) A meta-analysis of transformational and transactional leadership correlates of effectiveness and satisfaction: An update and extension. In: Aviolo BJ and Yammarino FJ (eds.) *Transformational and charismatic leadership: The road ahead*. Oxford: JAI, pp. 35–66.

Duyar I, Gumus S and Bellibas, MS (2013) Multilevel analysis of teacher work attitudes: The influence of principal leadership and teacher collaboration. *International Journal of Educational Management* 27(7): 700-719.

Elmore RF (2000) *Building a new structure of school leadership*. Washington, DC: Albert Shanker Institute.

Eyal O and Roth G (2011) Principals' leadership and teachers' motivation: Self-determination theory analysis. *Journal of Educational Administration* 49(3): 256-275.

Feiman-Nemser S (2001) From preparation to practice: Designing a continuum to strengthen and sustain

Accepted

teaching. *Teachers College Record* 103(6): 1013–1055.

Flemish Department of Education and Training (2013) *Arbeidsmarktrapport Prognose 2011-2015. Basisonderwijs en Secundair Onderwijs* [Labour market prognosis 2011-2015. Elementary and secondary education]. Brussels: Author.

Flemish Department of Education and Training (2016) *Vlaams onderwijs in cijfers. Schooljaar 2015-2016* [Flemish education in numbers. Schoolyear 2015-2016]. Brussels: Author.

Flores MA and Day C (2006) Contexts which shape and reshape new teachers' identities: A multi-perspective study. *Teaching and Teacher Education* 22(2): 219–232.

Fox ARC and Wilson EG (2015) Networking and the development of professionals: Beginning teachers building social capital. *Teaching and Teacher Education* 47: 93–107.

Gaikhorst L, Beishuizen JJ, Korstjens IM, et al. (2014) Induction of beginning teachers in urban environments: An exploration of the support structure and culture for beginning teachers at primary schools needed to improve retention of primary school teachers. *Teaching and Teacher Education* 42: 23–33.

Geijsel FP, Sleegers PJ, Stoel RD, et al. (2009) The effect of teacher psychological and school organizational and leadership factors on teachers' professional learning in Dutch schools. *The Elementary School Journal* 109(4): 406–427.

George J and Jones G (1999) *Understanding and managing organizational behavior*. Reading, MA: Addison-Wesley.

Goddard RD, Hoy WK and Hoy AW (2004) Collective efficacy beliefs: Theoretical developments, empirical evidence, and future directions. *Educational Researcher* 33(3): 3–13.

Griffith J (2004) Relation of principal transformational leadership to school staff job satisfaction, staff turnover, and school performance. *Journal of Educational Administration* 42(3): 333–356.

Gumus S, Bellibas MS, Esen M and Gumus, E (2016) A systematic review of studies on leadership models in educational research from 1980 to 2014. *Educational Management Administration & Leadership* 46(1): 25-48.

Hallinger P and Heck RH (1996) Reassessing the principal's role in school effectiveness: A review of empirical research, 1980-1995. *Educational Administration Quarterly* 32(1): 5–44.

Accepted

Hallinger P and Lu J (2013) Preparing principals: What can we learn from MBA and MPA programmes? *Educational Management Administration & Leadership* 41(4): 435–452.

Hargreaves A (1992) Time and teachers' work: An analysis of the intensification thesis. *Teachers college Record* 94: 87–108.

Hargreaves A (2007) Sustaining professional learning communities. In: Stoll L and Louis KS (eds.) *Professional learning communities: Divergence, depth, and dilemmas*. Berkshire: Open University Press, pp. 181–195.

Hater JJ and Bass BN (1988) Supervisor's evaluations and subordinates' perceptions of transformational and transactional leadership. *Journal of Applied Psychology* 73(4): 695–702.

Hofman RH and Dijkstra BJ (2010) Effective teacher professionalization in networks? *Teaching and Teacher Education* 26(4): 1031–1040.

Høigaard R, Giske R and Sundsli K (2012) Newly qualified teachers' work engagement and teacher efficacy influences on job satisfaction, burnout, and the intention to quit. *European Journal of Teacher Education* 35(3), 347-357.

Hong JY (2010) Pre-service and beginning teachers' professional identity and its relation to dropping out of the profession. *Teaching and Teacher Education* 26: 1530-1543.

House RJ and Shamir B (1993) Toward the integration of transformational, charismatic, and visionary theories. In: Chemers MM and Ayman R (eds) *Leadership Theory and Research: Perspectives and Directions.* San Diego, CA: Academic Press Inc., pp. 81–103.

Hu and Bentler (1999) Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling. *A multidisciplinary Journal* 6(1): 1-55.

Hulpia H, Devos G and Rosseel Y (2009) The relationship between the perception of distributed leadership in secondary schools and teachers' and teacher leaders' job satisfaction and organizational commitment. *School Effectiveness and School Improvement* 20(3): 291–317.

Ingersoll RM (2001) Teacher turnover and teacher shortages: An organizational analysis. *American Educational Research Journal* 38(3): 499–534.

Jepson, E and Forrest S (2006) Individual contributory factors in teacher stress: The role of achievement striving and occupational commitment. *British Journal of Educational Psychology* 76(1): 183-197.

Accepted

Johnson SM (2006) *The workplace matters: Teacher quality, retention, and effectiveness*. Washington, DC: National Education Association.

Kane TD and Tremble TR (2000) Transformational leadership effects at different levels of the US Army. *Military Psychology* 12(2): 137–160.

Kane T, Rockoff J and Staiger D (2008) What does certification tell us about teacher effectiveness? Evidence from New York City. *Economics of Education Review* 27(6): 615–631.

Kelchtermans G (1993) Getting the story, understanding the lives. From career stories to teachers' professional development. *Teaching and Teacher Education* 9: 443-456.

Kelchtermans G (2006) Teacher collaboration and collegiality as workplace conditions. A review. *Zeitschrift für Pädagogik* 52(2): 220-237.

Kelchtermans G and Ballet K (2002) The micropolitics of teacher induction. A narrative-biographical study on teacher socialisation. *Teaching and Teacher Education* 18(1): 105–120.

Khasawneh S, Omari A and Abu-Tineh A (2012) The relationship between transformational leadership and organizational commitment: The case for vocational teachers in Jordan. *Educational Management Administration and Leadership* 40(4): 494-508.

Khawary O and Ali S (2015) The causes and effects of English teachers' turnover: A case from Afghanistan. *Improving Schools* 18(1): 20-34.

Kilgore KL and Griffin CC (1998) Beginning special educators: Problems of practice and the influence of school context. *Teacher Education and Special Education* 21(3): 155-173.

Klassen RM and Chiu MM (2010) Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology* 102(3): 741-756.

Kline RB (2015) *Principles and practice of structural equation modeling* (4th ed.). New York, NY: The Guilford Press.

Koh WL, Steers RM and Terborg JR (1995) The effects of transformational leadership on teacher attitudes and student performance in Singapore. *Journal of Organizational Behavior* 16(4): 319–333.

Kruse SD and Louis KS (2009) *Building strong school cultures: A guide to leading change*. Thousand Oaks, CA: Corwin.

Kwakman K (2003) Factors affecting teachers' participation in professional learning activities. *Teaching*

Accepted

*and Teacher Education* 19: 149-170.

Lachman R and Aranya N (1986) Job attitudes and turnover intentions among professionals in different work settings. *Organization Studies* 7(3): 279–293.

Lawler EE and Hall DT (1970) Relationship of job characteristics to job involvement, satisfaction, and intrinsic motivation. *Journal of Applied Psychology* 54(4): 305–312.

Leithwood KA (1992) The move toward transformational leadership. *Educational Leadership* 49(3): 8–12.

Leithwood K and Jantzi D (1990) Transformational leadership: How principals can help reform school cultures. In: *Annual Meeting of the Canadian Association for Curriculum Studies*. Victoria, British Colombia.

Leithwood K and Jantzi D (2000) The effects of different sources of leadership on student engagement in school. In: Riley K and Louis K (eds) *Leadership for change and school reform*. London: Routledge, pp. 50–66.

Leithwood K, Leonard L and Sharratt L (1998) Conditions fostering organizational learning in schools. *Educational Administration Quarterly* 34(2): 243-276.

Luthans F, Avey JB, Avolio BJ, et al. (2006) Psychological capital development: Toward a micro-intervention. *Journal of Organizational Behavior* 27(3): 387-393.

McInerney DM, Ganotice FA, King RB, et al. (2015) Exploring commitment and turnover intentions among teachers: What we can learn from Hong Kong teachers. *Teaching and Teacher Education* 52: 11–23.

Mckenzie P, Emery H, Santiago P, et al. (2004) *Attracting, developing and retaining effective teachers*. OECD Country Note, OECD, Belgium, April.

MacKinnon, DP, Lockwood, CM, and Williams, J (2004) Confidence limits for the indirect effect: Distribution of the product and resampling methods. *Multivariate Behavioral Research* 39(1): 99–128.

McNatt DB and Judge TA (2008) Self-efficacy intervention, job attitudes and turnover: A field experiment with employees in role transition. *Human Relations* 61(6): 783–810.

Marks HM and Printy SM (2003) Principal leadership and school performance: An integration of transformational and instructional leadership. *Educational Administration Quarterly* 39(3): 370–397.

Accepted

Mastenbroek NJJM, Jaarsma ADC, Scherpbier AJJA, et al. (2014) The role of personal resources in explaining well-being and performance: A study among young veterinary professionals. *European Journal of Work and Organizational Psychology* 23(2): 190–202.

Meyer JP and Allen NJ (1991) A three-component conceptualization of organizational commitment. *Human Resource Management Review* 1(1): 61–89.

Meyer JP, Becker TE and Vandenberghe C (2004) Employee commitment and motivation: A conceptual analysis and integrative model. *Journal of Applied Psychology* 89(6): 991–1007.

Meyer JP, Stanley DJ, Herscovitch L, et al. (2002) Affective, continuance, and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences. *Journal of Vocational Behavior* 61(1): 20–52.

Minckler CH (2014) School leadership that builds teacher social capital. *Educational Management Administration & Leadership* 42(5): 657–679.

Moolenaar NM, Daly AJ and Sleegers PJC (2010) Occupying the principal position: Examining relationships between transformational leadership, social network position, and schools' innovative climate. *Educational Administration Quarterly* 46(5): 623–670.

Moolenaar NM, Sleegers PJC and Daly AJ (2011) Ties with potential: Social network structure and innovative climate in Dutch schools. *Teachers College Record* 113(9): 1983–2017.

Mulkeen A and Crowe-Taft N (2010) *Teacher attrition in Sub-Saharan Africa: The neglected dimension of the teacher supply challenge.* Paris: Secretariat of the International Task Force on Teachers for EFA, UNESCO.

Muthén and Muthén (1998-2015) *Mplus user's guide.* 7th ed. Los Angeles, CA: Muthén and Muthén.

Nguni S, Sleegers P and Denessen E (2006) Transformational and transactional leadership effects on teachers' job satisfaction, organizational commitment, and organizational citizenship behaviour in primary schools: The Tanzanian case. *School Effectiveness and School Improvement* 17(2): 145-177.

Notz WW (1975) Work motivation and the negative effects of extrinsic rewards. *American Psychologist* 30(9): 884–891.

OECD (2005) *Teachers matter: Attracting, developing and retaining teachers.* Paris: OECD Publishing.

Paffen P (2011) Wat is typerend voor transformationele leiders? [What is typical for transformational

Accepted

leaders?] *Holland Belgium Management Review* 139: 8–14.

Park J-H and Ham SH (2016) Whose perception of principal instructional leadership? Principal-teacher perceptual (dis)agreement and its influence on teacher collaboration. *Asia Pacific Journal of Education* 36(3): 450-469.

Penuel W, Riel M, Krause A, et al. (2009) Analyzing teachers' professional interactions in a school as social capital: A social network approach. *Teachers College Record* 111(1): 124–163.

Pillai R and Williams EA (2004) Transformational leadership, self-efficacy, group cohesiveness, commitment, and performance. *Journal of Organizational Change Management* 17(2): 144–159.

Podsakoff PM, MacKenzie SB and Bommer WH (1996) Transformational leader behaviors and substitutes for leadership as determinants of employee satisfaction, commitment, trust, and organizational citizenship behaviors. *Journal of Management* 22(2): 259–298.

Pogodzinski B (2014) Collegial support and novice teachers' perceptions of working conditions. *Journal of Educational Change* 15: 467-489.

Rinke CR (2008) Understanding teachers' careers: Linking professional life to professional path. *Educational Research Review* 3: 1-13.

Rippon JH and Martin M (2006) Call me teacher: The quest of new teachers. *Teachers and Teaching: Theory and Practice* 12(3): 305–324.

Ronfeldt M, Loeb S and Wyckoff J (2013) How teacher turnover harms student achievement. *American Educational Research Journal* 50(1): 4–36.

Runhaar P, Sanders K and Yang H (2010) Stimulating teachers' reflection and feedback asking: An interplay of self-efficacy, learning goal orientation, and transformational leadership. *Teaching and Teacher Education* 26(5): 1154–1161.

Schepens A, Aelterman A and Vlerick P (2009) Student teachers' professional identity formation: Between being born as a teacher and becoming one. *Educational Studies* 35(4): 361-378.

Schwyhart WR and Smith PC (1972) Factors in the job involvement of middle-managers. *Journal of Applied Psychology* 56(3): 227–233.

Scott C and Dinham S (2003) The development of scales to measure teacher and school executive occupational satisfaction. *Journal of Educational Administration* 41(1): 74–86.

Accepted

Shrout PE and Fleiss JL (1979) Intraclass correlations: Uses in assessing rater reliability. *Psychological bulletin* 86(2): 420–8.

Skaalvik EM and Skaalvik S (2011) Teacher job satisfaction and motivation to leave the teaching profession: Relations with school context, feeling of belonging, and emotional exhaustion. *Teaching and Teacher Education* 27(6): 1029–1038.

Skaalvik EM and Skaalvik S (2017) Still motivated to teach? A study of school context variables, stress and job satisfaction among teachers in senior high school. *Social Psychology of Education* 20(1): 15–37.

Smith K and Ulvik M (2017) Leaving teaching: Lack of resilience or sign of agency? *Teachers and Teaching: Theory and Practice* 23(8): 928-945.

Snoek M, Eisenschmidt E, Forsthuber B, et al. (2010) *Developing coherent and system-wide induction programmes for beginning teachers: A handbook for policy makers*. Available at: http://ec.europa.eu/education/library/publications/handbook0410_en.pdf. (2 January 2018).

Soenens B, Sierens E, Vansteenkiste M, et al. (2012) Psychologically controlling teaching: Examining outcomes, antecedents, and mediators. *Journal of Educational Psychology* 104(1): 108–120.

Struyve C, Daly A, Vandecandelaere M, et al. (2016) More than a mentor: The role of social connectedness in early career and experienced teachers' intention to leave. *Journal of Professional Capital and Community* 1(3): 198–218.

Tesfaw TA (2014) The relationship between transformational leadership and job satisfaction: The case of government secondary school teachers in Ethiopia. *Educational Management Administration and Leadership* 42(6): 903-918.

Thomas L, Tuytens, M, Devos G, Kelchtermans G and Vanderlinde R (in progress) Sinking alone or swimming together: The power of high-quality support in teacher induction. *Teachers and Teaching: Theory and Practice*.

Tschannan-Moran M and Woolfolk Hoy A (2001) Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education* 17: 783–805.

Tschannan-Moran M and Woolfolk Hoy A (2007) The differential antecedents of self-efficacy beliefs of novice and experienced teachers. *Teaching and Teacher Education* 23: 944–956.

Tynjälä P and Heikkinen HLT (2011) Beginning teachers' transition from pre-service education to working

Accepted

life: Theoretical perspectives and best practices. *Zeitschrift fur Erziehungswissenschaft* 14(1): 11–33.

van den Broeck A, Vansteenkiste M, de Witte H, et al. (2009) *De Zelf-Determinatie Theorie: Kwalitatief goed motiveren op de werkvloer* [The Self-Determination Theory: Motivating qualitatively in the workplace]. *Gedrag en Organisatie* 22(4): 316–334.

Van Waes S, Moolenaar NM, Daly AJ, et al. (2016) The networked instructor: The quality of networks in different stages of professional development. *Teaching and Teacher Education* 59: 295–308.

Vanblaere B and Devos G (2016) Relating school leadership to perceived professional learning community characteristics: A multilevel analysis. *Teaching and Teacher Education* 57: 26–38.

Vansteenkiste M, Neyrinck B, Niemic C, et al. (2007) On the relations among work value orientations, psychological need satisfaction and job outcomes: A self-determination theory approach. *Journal of Occupational and Organizational Psychology* 80(2): 251–277.

Veenman S (1984) Perceived problems of beginning teachers. *Review of Educational Research* 54(2): 143–178.

Xanthopoulou D, Bakker AB, Demerouti E, et al. (2007) The role of personal resources in the job demands-resources model. *International Journal of Stress Management* 14(2): 121–141.

Yukl G (1998) *Leadership in Organizations*. 4th ed. Englewood Cliffs, NJ: Prentice-Hall.

Zembylas M and Papanastasiou E (2006) Sources of teacher job satisfaction and dissatisfaction in Cyprus. *Compare: A Journal of Comparative and International Education* 36(2): 229–247.

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## List of figures and tables

### Table 1

Overview of the validated instruments to measure teachers' job attitudes, teachers' self-efficacy, and transformational leadership, including example items, range, number of items and Cronbach's alpha coefficients

| Measure | Author | Example item | Range | Items | α |
|---|---|---|---|---|---|
| Job satisfaction | Caprara et al. (2003) | I feel good at work | Strongly disagree (0)–Strongly agree (4) | 4 | .78 |
| Affective organisational commitment | McInerney et al. (2015) | I do not feel emotionally attached to this school | Strongly disagree (0)–Strongly agree (4) | 3 | .71 |
| Intrinsic motivation to teach | Soenens et al. (2012) | I find teaching enjoyable | Strongly disagree (0)–Strongly agree (4) | 4 | .88 |
| Teachers' self-efficacy | Tschannan-Moran and Woolfolk Hoy (2001) | How much can you do to control disruptive behaviour in the classroom? | Nothing (0)–A great deal (4) | 12 | .79 |
| Transformational leadership | Author et al. (2009) | The school leader provides organisational support for teacher interaction | Never (0)–Always (4) | 10 | .93 |

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**Table 2**

Descriptive statistics on the professional collegial support network of first-year primary school teachers.

| | Professional collegial support | | |
|---|---|---|---|
| | All participants | Female participants | Male participants |
| *Alter analysis* | | | |
| Average % of gender | | | |
| Male | 14.00% | 13.83% | 15.36% |
| Female | 86.00% | 86.17% | 84.64% |
| *Homogeneity* | | | |
| Experience of alters M(SD) | 16.68 (6.38) | | |
| Average IQV for gender | .33 | .32 | .39 |
| *Homophily* | | | |
| Average absolute differences for experience M(SD) | 15.74 (6.38) | | |
| Average EI-index for gender | -.57 | -.72 | .69 |

*Note*. M: average; SD: standard deviation; IQV (index for Qualitative Variation; normalised) measures the similarity among ego's alters and varies between 0 (homogeneity) and 1 (heterogeneity); EI-index: measures the extent to which the ego's alters are similar to the ego for a specific characteristic and varies between + 1 (heterophily) and -1 (homophily).

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**Table 3**

Means (M), standard deviations (SD), and correlations among the study variables (n=292).

| | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| 1.Job satisfaction | 3.35 | 0.55 | - | | | | | | |
| 2.Affective organisational commitment | 3.26 | 0.71 | .598** | - | | | | | |
| 3.Intrinsic motivation to teach | 3.35 | 0.53 | .501** | .305** | - | | | | |
| 4.Self-reported in-degree of professional support | 5.72 | 3.22 | .291** | .288** | .173** | - | | | |
| 5.Perceived usefulness of professional support | 4.46 | 0.50 | .250** | .167** | .211** | .009 | - | | |
| 6.Self-efficacy | 2.67 | 0.41 | .338** | .165** | .357** | .003 | .170** | - | |
| 7.Transformational leadership | 2.81 | 0.78 | .428** | .373** | .245** | .245** | .197** | .263** | - |

*Note.* **p < .01

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**Table 4**

Significance tests of the indirect effects of transformational leadership via self-reported in-degree, perceived usefulness and self-efficacy

| | | | 95% Confidence Interval | |
|---|---|---|---|---|
| **Dependent** | **Mediator(s)** | **β** | **Lower limit** | **Upper limit** |
| *Job satisfaction* | Self-reported in-degree | .052*** | .027 | .087 |
| | Self-efficacy | .053** | .023 | .096 |
| | Perceived usefulness and self-efficacy | .005 | .001 | .016 |
| *Affective organisational commitment* | Self-reported in-degree | .051** | .024 | .088 |
| *Intrinsic motivation* | Self-reported in-degree | .032* | .009 | .063 |
| | Self-efficacy | .071** | .035 | .123 |
| | Perceived usefulness and self-efficacy | .007 | .001 | .021 |

*Note*. *p < .05; **p < .01; ***p < .001

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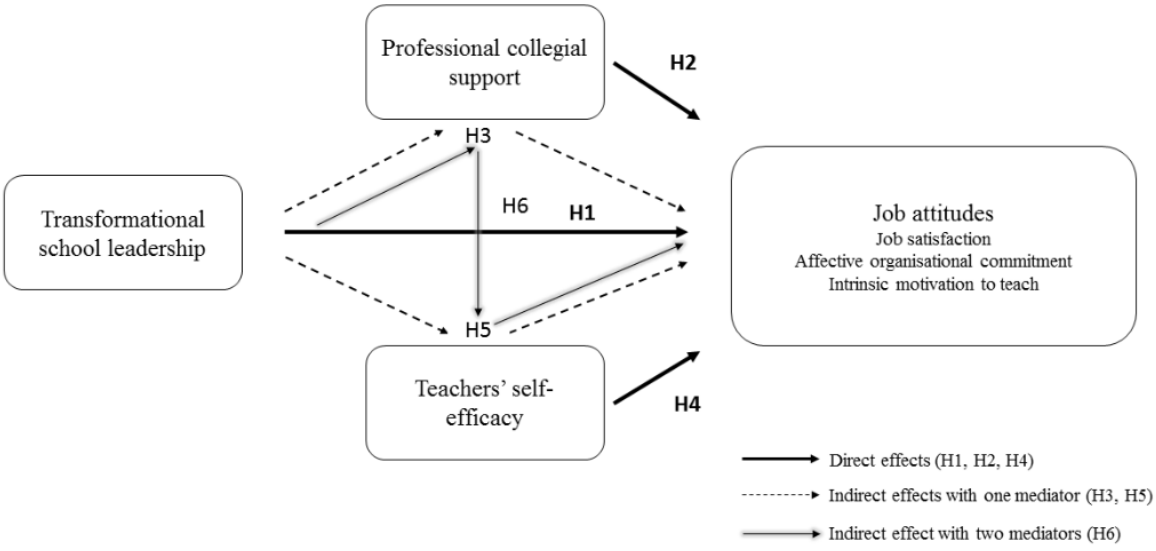


**Figure 1.** Theoretical model.

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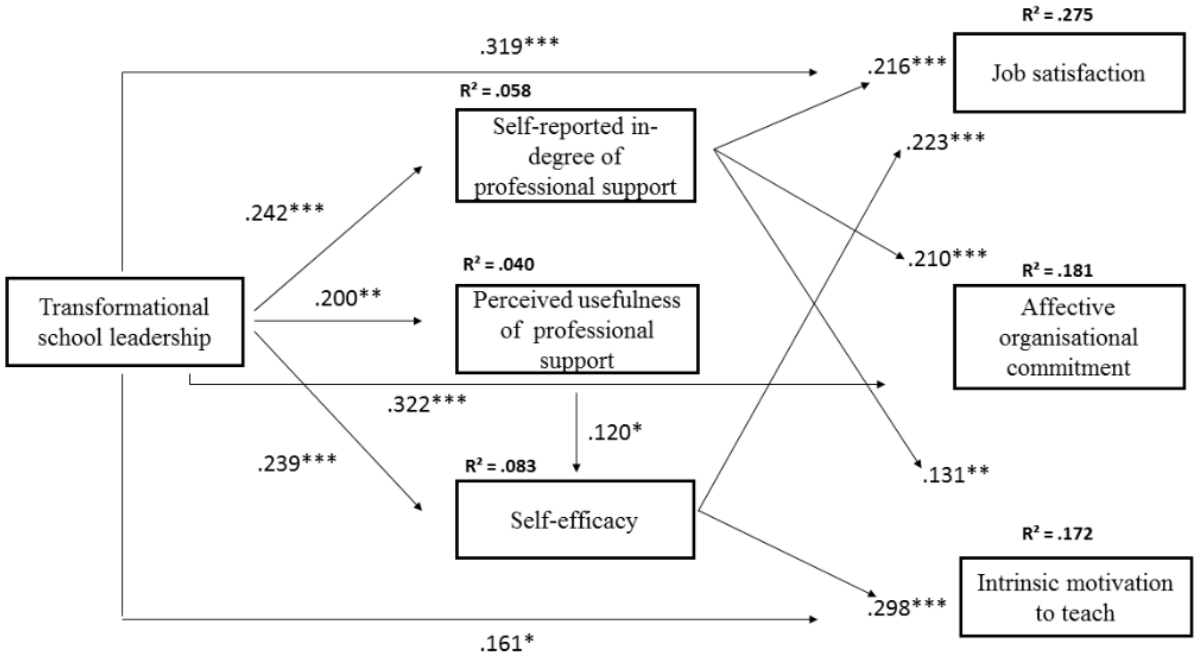


**Figure 2.** The research model.

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