Teachers' perceptions of their school managers' skills and their own self-efficacy levels

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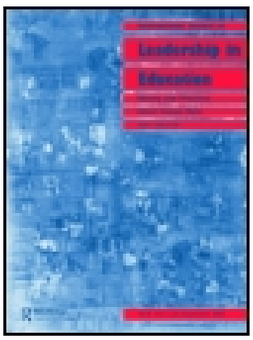

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Teachers' perceptions of their school managers' skills and their own self-efficacy levels

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ABSTRACT

This paper investigated the relationships between teachers' perceptions of their school managers' skills and their own self-efficacy levels. A total of 651 teachers working in Turkey participated in the current study. All the teachers filled in two questionnaires and subsequent quantitative data were analyzed through descriptive and inferential statistics. Findings indicated significant positive correlations between perceived teacher self-efficacy and teachers' perceptions of their school managers' skills. Also, perceived managerial skills significantly predicted perceived self-efficacy. Finally, perceived self-efficacy and perceived managerial skills changed significantly based on teacher characteristics such as experience and subject area. Findings highlight the need to develop holistic approaches to improve the quality, efficiency, and management of human resources in education.

Introduction

The increasing role of school management in creating effective schools has led to the emergence of a number of school management approaches with ideal models of school managers (Leithwood, Harris, & Hopkins, 2008; Spillane, Halverson, & Diamond, 2001). Recently, the focus in school management has shifted from transactional leadership theories to leadership styles such as transformational leadership and servant leadership that focus on organizational objectives as well as effective human resource management (Taylor, 2007). Unlike transactional leadership which is based on an exchange relationship (Burns, 1978), approaches such as transformational leadership and servant leadership provide a clear vision for the future, inspire employees, and give the work a greater sense of meaning. This encourages employees to get prepared and to do more than what would strictly be expected from them on the basis of their job descriptions (Burns, 1978; Greenleaf, 2002). According to these approaches good management qualities are based on building vision and setting directions, understanding and developing people, redesigning the organization and managing the teaching, and learning programme (Leithwood et al., 2008).

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In line with the leadership qualities mentioned above Quast and Hazucha (1992) claim that behaviors of managers have specific impact on organizational effectiveness and staff performance. In the Managerial Skills Scale (MSS) which they developed out of their conceptualization of school management, Quast and Hazucha (1992) claim that good management practices involve (a) initiative taking skills such as listening, human relations, conflict resolution, and motivation; (b) skills related to responsibility such as planning, institutional and personal organization, time management, information giving, and controlling; (c) technical skills such as textual communication, skills related to finance and quantity, information related to profession, and technical information; (d) quality skills such as personal motivation, effective work, student achievement, and information giving; and (e) other skills such as verbal communication, problem analysis and decision-making.

The way teachers perceive their school managers' skills might change based on several teacher characteristics. For example, some studies (Chambers, 2011; Gosmire, Morrison, & Van Osdel, 2009; Litchka & Shapira-Lishchinsky, 2016) have investigated the role of subject area, educational degree, and school type in teachers' perceptions of their managers' skills. Conclusions from these studies imply that the context may have a direct impact on the views of educators.

Theoretically, teacher self-efficacy is drawn from Bandura's (1986) conceptualization of self-efficacy, and it refers to teachers' perceptions of their competence in fulfilling the roles prescribed for them to achieve a set of educational objectives, such as learning facilitation and student development (Schwarzer & Hallum, 2008; Skaalvik & Skaalvik, 2010). Tschannen-Moran, Woolfolk Hoy, and Hoy (1998) also define teacher self-efficacy as teachers' beliefs in their capability to successfully enact teaching tasks in a particular context. Tschannen-Moran and Hoy (2001) emphasize these tasks in a school context as effective instructional strategies, classroom management, and student engagement, leading to the development of the Teachers' Sense of Efficacy Scale (TSES). Teachers' sense of efficacy for instructional strategies refers to a teacher's confidence that he or she can design and implement activities and assessments to facilitate student learning. Teachers' sense of efficacy for classroom management concerns a teacher's belief that he or she can maintain an orderly and non-distractive classroom environment. Finally, teachers' sense of efficacy for student engagement reflects a teacher's confidence that he or she can support students to become involved and motivated for learning. In the current study, this conceptualization guided the choice of methodology and led to how teacher self-efficacy was examined.

There is a growing body of research investigating teacher self-efficacy based on teacher characteristics. There has been research, for example, looking at how various variables such as gender (e.g., Jennett, Harris, & Mesibov, 2003; Liu & Ramsey, 2008), years of experience (e.g., Klassen & Chiu, 2010), subject area (e.g., Leyser, Zeiger, & Romi, 2011), educational level (e.g., Soresi, Nota, & Lent, 2004) and the type of school teachers work in (Wolters & Daugherty, 2007) influence the way teachers perceive their self-efficacy. To illustrate, Evans and Tribble (1986) located higher self-efficacy among female teachers while Jennett et al. (2003) have not found significant effects of gender on teacher self-efficacy. As for subject area, Leyser et al. (2011) found higher self-efficacy among teachers in areas involving more contact with students and practice, compared to teachers from areas involving less contact with students.

Teacher self-efficacy is related to a number of outcomes such as student achievement, learning, and teacher behavior (Tschannen-Moran & Hoy, 2001). One element in the school system that we believe is related to teacher self-efficacy is the managerial skills of the professionals in the school management body. Therefore, the following section provides information regarding how perceived self-efficacy can be linked to perceived managerial skills.

Managerial skills and teacher self-efficacy

The majority of the school management approaches agree that effective school management leads to teacher satisfaction, effective staff performance, and professional development (Dimmock, 2013). Tschannen-Moran and Hoy (2007) argue that school managers, who are able to motivate teachers, provide them with necessary resources to utilize in classrooms, and reward them can make a large impact on teacher self-efficacy and actual performance in schools. The comprehensive review by Leithwood et al. (2008) suggests that while school leaders make modest direct contributions to staff capacity, they have strong and positive influence on staff members' motivation, commitment and beliefs concerning the supportiveness of their working conditions.

The literature on school management suggests that school managers can influence teacher self-efficacy by providing organizational support, supervision, resources and guidance (Ware & Kitsantas, 2007). For example, Nir and Kranot (2006) argue that there is a link between school managers' effective leadership style and teachers' work-related performance. In addition, there are consistent findings showing that teachers are more satisfied in well-managed schools—where the schools are safe, where teachers feel a sense of control and influence over their work environment, where mentoring and support in the day-to-day activities of teaching are common, where teachers feel more efficacious and teach in areas for which they are prepared (Stockard & Lehman, 2004; Ubben, Hughes, & Norris, 2015), and where communal school organization, an orderly environment, and average levels of control exist (Lee, Dedrick, & Smith, 1991).

Study context and rationale

The school management system in Turkey is a prototype of the general education system which is highly centralized and hierarchical in structure (Akın, 2012). Each school management unit is responsible to the district management body, which is also responsible to the Ministry of National Education. School managers are selected among experienced teachers, based on the scores they obtain from school manager selection examination. Each school is managed by one principal and at least one deputy principal; the number of deputy principals depends on the number of students. A school manager is employed for 4 years while subsequent employment for a second period is also possible. Teachers from 93 different subject areas work in schools at the pre-school, primary, pre-secondary and secondary levels. All levels are managed by the Ministry of National Education.

The minimum degree required for teaching qualification in Turkey is bachelor's degree, which lasts 4 or 5 years depending on the subject. However, up to the 90s, graduates with an associate degree, which takes 2 years after high school, were assigned

as teachers to meet the high demand for teachers. A master's degree takes additional 2 years after Bachelor's degree and a doctorate degree takes 4 or 5 years depending on the subject.

In Turkey, there have been studies investigating school management from various perspectives such as school manager employment (Cemaloğlu, 2014) and organizational structure (Taşdan, 2010). However, the literature suggests that school management has implications for teachers through provision of organizational support, supervision, and resources. In addition, to our knowledge, In Turkey there is not a study which investigates school management from the perspective of teacher self-efficacy. Therefore, this study aims to investigate the relationships between the way teachers perceive managerial skills of their school managers and how they perceive their self-efficacy. More specifically, answers for the following three research questions are sought:

(1) Are there significant relationships between teachers' perceptions of their school managers' skills and their own self-efficacy levels?
(2) Are there significant differences in teachers' perceptions of their school managers' skills and their own self-efficacy levels according to gender, years of experience, subject area, educational level, and type of schools they work in?
(3) To what extent do perceived managerial skills predict teachers' sense of efficacy for instructional strategies, classroom management, and student engagement?

Methods

This research was designed in a descriptive manner around the paradigm of quantitative research. Descriptive research is used to obtain information concerning the current status of the phenomena and to describe what exists with respect to variables or conditions in a situation. Collecting numerical data from a sample of 651 teachers, teachers' perceptions of their school managers' skills and their own self-efficacy levels are investigated while analyzing the way these variables change based on teacher characteristics including years of experience, subject area, educational level, and type of school.

Participants

The population included 950,268 teachers working in pre-school, elementary and secondary public schools in Turkey (Ministry of National Education, 2016). The sample in this study consisted of 651 teachers working in public schools located in three cities of Turkey. The mean age of the participants was 30.3. There were 366 (56.2%) male and 285 (43.8%) female teachers. The subject areas were class teaching (n = 102), English (n = 37), math (n = 40), special education (n = 30), social sciences (n = 46), preschool education (n = 34), philosophy (n = 42), vocational education (n = 51), health sciences (n = 48), Turkish literature (n = 54), school counseling (n = 63), science (n = 57) and art (n = 47). 323 teachers (49.6%) had a teaching experience more than 10 years. The educational degrees obtained were associate (n = 49), bachelor (n = 454), master

(n = 108) and doctorate (n = 40). Teachers worked in preschool (n = 98), elementary (n = 211), pre-secondary (n = 197) and secondary levels (n = 145).

The cities and schools where the data were collected were chosen with a purposive sampling strategy based on two aims (Robson, 2011). First, the researchers had access to the schools located in the cities. Second, the cities represented different regions of Turkey. In total, data were collected from 49 schools located in three different cities during the first semester of the 2015–2016 educational year. All teachers working in these schools were randomly contacted via teachers' meeting or teachers' room talk, provided with information regarding the research and those who agreed to participate were given with the questionnaires.

Sampling of the teachers was carried out randomly (Robson, 2011) in that teachers from different subject areas in each school were given the questionnaires in closed envelopes, with an additional empty envelope where participants were requested to use for the questionnaires. No personal information which could reveal the participants' identities was requested. Participants were informed that joining the study was voluntary and they were given two weeks to return the questionnaires. In total, 1088 questionnaires were delivered and 651 fully filled questionnaires (59.8%) were returned.

Instruments

Demographic information form

A demographic information form was developed by the researchers to collect demographic data from participating teachers. The form was used to collect information about teachers' age, gender, years of experience, subject area, type of the school they work in, and educational level.

Teachers' sense of efficacy scale (TSES)

The Teachers' Sense of Efficacy Scale was used to collect data regarding teachers' perceptions of their self-efficacy. The scale was originally developed by Tschannen-Moran and Hoy (2001). The study includes 24 items measured in three subclasses. To score the instrument, a 9-point Likert scale was used ranging from 1 – Nothing, 3 – Very little, 5 – Some influence, 7 – Quite a bit, and 9 – A great deal. There are three sub-scales: Efficacy for Instructional Strategies (EIS), Efficacy for Classroom Management (ECM), and Efficacy for Student Engagement (ESE). Higher mean scores on each sub-scale indicate higher degrees of beliefs in self-efficacy.

The Turkish version of TSES was developed by Capa, Cakiroglu, and Sarikaya (2005). Results of the adaptation study yielded Cronbach α internal consistency coefficient 0.82 for ESE, 0.86 for EIS and 0.84 for ECM. For the whole scale, researchers found the reliability of efficacy scores as 0.93. When it comes to the current study, we found equivalent values of Cronbach α internal consistency coefficient to those found by Capa et al. (2005). Cronbach alpha internal consistency coefficients were 0.83 for ESE, 0.93 for EIS, 0.86 for ECM, and finally 0.86 for the whole scale.

Managerial skills scale (MSS)

The Managerial Skills Scale was used to collect teachers' perceptions of their school managers' skills. The scale was originally developed by Quast and Hazucha (1992).

Quast and Hazucha classified management skills in five dimensions containing 34 items. The dimensions consist of taking initiative (TI), taking responsibilities (TR), technical skills (TS), quality skills (QS), and other skills (OS) such as human resources management and motivation. The scale is a 5-point Likert scale from 1- 'strongly disagree' to 5- 'strongly agree'.

The Turkish version of MSS was developed by Sekerci and Aypay (2008). In this study, the KMO measure was 0.95, the Bartlett's test of sphericity was significant, indicating that a factor analysis was appropriate for the scale. The test-retest correlation was 0.95, indicating relatively high level of reliability for the questionnaire. Cronbach alpha coefficients were 0.87 for TI, 0.87 for TR, 0.69 for TS, 0.94 for QS, 0.94 for OS, and 0.95 for whole the scale. When it comes to the current study, Cronbach alpha internal consistency coefficients were 0.84 for TI, 0.93 for TR, 0.91 for TS, 0.91 for QS, 0.88 for OS, and 0.97 for the whole scale.

Data analysis

For data analysis, Statistical Package for Social Sciences (SPSS) version 21 and AMOS 7 were used. Regarding the first research question, Pearson product moment correlation was used to test the relationships between teachers' perceptions of their managers' skills and their own self-efficacy levels. Second, independent samples *t* test and analysis of variance (ANOVA) were utilized to compare TSES and MSS levels according to different variables. For the third research question, we used structural equation modeling (SEM) to analyze the extent to which perceived managerial skills predicted teacher self-efficacy dimensions. During analysis, parametric tests were used for data analysis because both data collected via TSES and MSS were normally distributed; Shapiro-Wilk scores of data were not significant (0.200). The criteria for assessing the strength of the eta square were based on Cohen's (1988) specification where eta square is small when $0.01 < \eta^2 < 0.06$; medium when $0.06 \leq \eta^2 < 0.14$; and large when $\eta^2 \geq 0.14$. Significance levels were tested at 0.05 and 0.01.

Results

Correlations between perceived self- efficacy and perceived managerial skills

We investigated the relationships between teachers' perceptions of their school managers' skills and their own self-efficacy levels. Table 1 shows that there were positive and statistically significant relationships between the total scores of perceived self-efficacy and perceived managerial skills, $r = 0.53$, $p < 0.01$. These findings indicate that as teachers' perceived managerial skills increase, the degree of self-efficacy beliefs increases as well, or vice versa. In addition, there were significant positive relationships among dimensions of the main constructs. All dimensions were significantly related ($p < 0.01$).

Table 1. Inter-correlations, Cronbach α and descriptive statistics for teacher sense of efficacy levels and perceived managerial skills.

Variables	1	2	3	4	5	6	7	8	9	10	M	SD	α
1. ESE	–	0.77**	0.58**	0.85**	0.47**	0.50**	0.48**	0.42**	0.41**	0.52**	29.37	4.54	0.83
2. EIS		–	0.61**	0.88**	0.45**	0.45**	0.47**	0.40**	0.36**	0.48**	31.15	4.99	0.93
3. ECM			–	0.89**	0.41**	0.40**	0.41**	0.35**	0.37**	0.43**	31.89	7.79	0.86
4. Total TSES				–	0.50**	0.51**	0.51**	0.44**	0.41**	0.53**	92.41	15.18	0.86
5. TI					–	0.78**	0.79**	0.74**	0.71**	0.89**	28.12	6.02	0.84
6. TR						–	0.86**	0.81**	0.80**	0.95**	48.01	9.31	0.93
7. TS							–	0.85**	0.69**	0.95**	33.13	6.78	0.91
8. QS								–	0.72**	0.80**	39.71	7.93	0.91
9. OS									–	0.90**	14.48	3.61	0.88
10. Total MSS										–	123.73	23.91	0.97

*p < 0.05, **p < 0.01.

Comparison of perceived self-efficacy and perceived managerial skills by gender

We investigated the differences between male and female teachers in relation to perceived self-efficacy and perceived managerial skills. Results did not indicate any significant differences between genders.

Comparison of perceived self-efficacy and perceived managerial skills by years of experience

Having analyzed the differences in teachers' perceptions of their school managers' skills and their own self-efficacy levels by years of experience, results revealed statistically significant differences among teachers' years of experience concerning perceived self-efficacy, $F_{(4,\ 650)} = 3.66$, $p < 0.01$, $\eta^2 = 0.04$. On the other hand, there were no statistically significant differences among teachers' years of experience concerning teachers' perceptions of their school managers' skills. LSD *post hoc* results indicating the differences between groups are shown in Table 2.

Comparison of perceived self-efficacy and perceived managerial skills by subject area

Analysis of the differences in teachers' perceptions of their school managers' skills and their own self-efficacy levels with regards to subject area revealed statistically significant differences concerning perceived self-efficacy, $F_{(12,\ 650)} = 2.80$, $p < 0.01$, $\eta^2 = 0.09$. Moreover, there were statistically significant differences among teachers' subject areas concerning perceived managerial skills, $F_{(12,\ 650)} = 2.93$, $p < 0.015$ $\eta^2 = 0.09$. LSD *post hoc* test results are shown in Table 3.

Comparison of perceived self-efficacy and perceived managerial skills by educational degree

Analysis of the differences in teachers' perceptions of their school managers' skills and their own self-efficacy levels by educational degree indicated statistically significant differences in relation to perceived self-efficacy, $F_{(3,\ 650)} = 7.96$, $p < 0.01$, $\eta^2 = 0.06$. As for perceived managerial skills, there were statistically significant differences among

Table 2. LSD's *post hoc* comparisons output for teacher sense of efficacy and perceived managerial skills according to teachers' experience.

	TSES [*t*/(*p*)]				MSS [*t*/(*p*)]			
Years of experience	B	C	D	E	B	C	D	E
A.1–5 years	−1.43 (0.47)	−8.73 (0.00)**	−4.62 (0.11)	−1.71 (0.60)	−0.01 (1.00)	−5.61 (0.14)	−5.71 (0.22)	−13.17 (0.01)*
B.6–10 years	–	−7.29 (0.00)**	−3.19 (0.30)	−0.28 (0.93)	–	−5.59 (0.17)	−5.69 (0.24)	−13.16 (0.02)*
C.11–15 years	–	–	4.11 (0.22)	7.01 (0.06)	–	–	−0.10 (0.98)	−7.57 (0.19)
D.16–20 years	–	–	–	2.91 (0.47)	–	–	–	−7.47 (0.24)
E.20 + years	–	–	–	–	–	–	–	–

*p < 0.05, **p < 0.01

Table 3. LSD's *post hoc* comparisons output for teacher sense of efficacy and perceived managerial skills according to teachers' subject areas.

Subject area	Variable	2	3	4	5	6	7	8	9	10	11	12	13
1.Class teaching	TSES [*t*/(*p*)]	5.77/(.1)	6.30/(0.05)	9.59/(0.15)	8.08/(0.00)**	5.31/(0.20)	4.89/(0.27)	4.60/(0.10)	0.01/(1.00)	3.51/(0.29)	22.03/(0.00)**	6.35/(0.04)*	−1.61/(0.64)
	MSS [*t*/(*p*)]	7.30/(0.18)	8.36/(0.10)	27.72/(00.01)*	15.89/(00.00)**	6.78/(0.30)	23.34/(0.00)**	9.73/(0.03) *	12.42/(0.14)	15.46/(0.00)**	27.63/(0.00)**	3.03/(0.54)	11.30/(0.04)*
2.English	TSES [*t*/(*p*)]	–	0.54/(0.90)	3.81/(0.60)	2.31/(0.58)	−0.45/(0.93)	−0.88/(0.87)	−1.16/(0.77)	−5.75/(0.34)	−2.25/(0.61)	16.26/(0.00) **	0.58/(0.89)	−7.38/(0.10)
	MSS [*t*/(*p*)]	–	1.06/(0.88)	20.42/(0.07)	8.58/(0.19)	−0.52/(0.95)	16.03/(0.05)	2.43/(0.70)	5.12/(0.59)	8.16/(0.23)	20.33/(0.01)*	−4.30/(0.52)	4.00/(0.57)
3.Math	TSES [*t*/(*p*)]	–	–	3.28/(0.65)	1.77/(0.66)	−0.99/(0.84)	−1.4/(0.78)	−1.70/(0.65)	−6.29/(0.29)	−2.79/(0.50)	15.72/(0.00) **	0.04/(0.99)	−7.92/(0.07)
	MSS [*t*/(*p*)]	–	–	19.36/(0.09)	7.52/(0.23)	−1.58/(0.84)	14.98/(0.06)	1.37/(0.82)	4.06/(0.66)	7.10/(0.28)	19.27/(0.01)*	−5.33/(0.40)	2.94/(0.67)
4.Special education	TSES [*t*/(*p*)]	–	–	–	−1.51/(0.83)	−4.27/(0.58)	−4.7/(0.55)	−4.98/(0.47)	−9.57/(0.25)	−6.07/(0.40)	12.44/(0.10)	−3.24/(0.65)	−11.2/(0.12)
	MSS [*t*/(*p*)]	–	–	–	−11.83/(0.29)	−20.9/(0.08)	−4.38/(0.72)	−17.99/(0.10)	−15.3/(0.24)	−12.26/(0.28)	−.08/(0.99)	−24.69/(00.03)*	−16.4/(0.15)
5.Social sciences	TSES [*t*/(*p*)]	–	–	–	–	−2.76/(0.56)	−3.2/(0.53)	−3.47/(0.34)	−8.06/(0.17)	−4.56/(0.26)	13.95/(0.00) **	−1.72/(0.65)	−9.69/(0.02) *
	MSS [*t*/(*p*)]	–	–	–	–	−9.11/(0.22)	7.45/(0.34)	−6.15/(0.28)	−3.46/(0.71)	−0.42/(0.95)	11.75/(0.12)	−12.85/(0.04)*	−4.58/(0.45)
6.Preschool education	TSES [*t*/(*p*)]	–	–	–	–	–	−0.43/(0.94)	−0.71/(0.88)	−5.30/(0.41)	−1.80/(0.71)	16.71/(0.00) **	1.03/(0.83)	−6.93/(0.17)
	MSS [*t*/(*p*)]	–	–	–	–	–	16.56/(0.07)	2.95/(0.68)	5.64/(0.58)	8.68/(0.26)	20.86/(0.02)*	−3.74/(0.62)	4.52/(0.57)
7.Philosophy	TSES [*t*/(*p*)]	–	–	–	–	–	–	−0.28/(0.95)	−4.87/(0.47)	−1.37/(0.79)	17.14/(0.00) **	1.46/(0.77)	−6.50/(0.22)
	MSS [*t*/(*p*)]	–	–	–	–	–	–	−13.61/(0.07)	−10.9/(0.30)	−7.87/(0.33)	4.30/(0.63)	−20.3/(0.01)*	−12.0/(0.15)
8.Vocational education	TSES [*t*/(*p*)]	–	–	–	–	–	–	–	−4.59/(0.42)	−1.09/(.78)	17.43/(0.00) **	1.74/(0.64)	−6.22/(0.12)
	MSS [*t*/(*p*)]	–	–	–	–	–	–	–	2.69/(0.76)	5.73/(0.34)	17.90/(0.01)*	−6.70/(0.25)	1.57/(0.80)
9.Health sciences	TSES [*t*/(*p*)]	–	–	–	–	–	–	–	–	3.50/(0.56)	22.02/(0.00) **	6.33/(0.28)	−1.62/(0.79)
	MSS [*t*/(*p*)]	–	–	–	–	–	–	–	–	3.04/(0.75)	15.21/(0.14)	−9.39/(0.31)	−1.12/(0.91)
10.Turkish literature	TSES [*t*/(*p*)]	–	–	–	–	–	–	–	–	–	18.52/(0.00) **	2.84/(0.49)	−5.12/(0.24)
	MSS [*t*/(*p*)]	–	–	–	–	–	–	–	–	–	12.17/(0.12)	−12.43/(0.05)	−4.16/(0.54)
11.School counselling	TSES [*t*/(*p*)]	–	–	–	–	–	–	–	–	–	–	−15.7/(0.0)**	−23.6/(0.0)**
	MSS [*t*/(*p*)]	–	–	–	–	–	–	–	–	–	–	−24.6/(0.00)**	−16.3/(0.04)*
12.Science	TSES [*t*/(*p*)]	–	–	–	–	–	–	–	–	–	–	–	−7.96/(0.06)
	MSS [*t*/(*p*)]	–	–	–	–	–	–	–	–	–	–	–	8.27/(0.22)
13.Art	TSES [*t*/(*p*)]	–	–	–	–	–	–	–	–	–	–	–	–
	MSS [*t*/(*p*)]	–	–	–	–	–	–	–	–	–	–	–	–

*p < 0.05, **p < 0.01.

Table 4. LSD's *post hoc* comparisons output for teacher sense of efficacy and perceived managerial skills according to teachers' educational degree.

	TSES [*t*/(*p*)]			MSS [*t*/(*p*)]		
Degree	B	C	D	B	C	D
A.Associate	14.09 (0.00)**	6.07 (0.20)	12.00 (0.16)	17.89 (0.01)*	18.00 (0.02)*	26.33 (0.05)
B.Bachelor	–	−8.02 (0.00)**	−2.09 (0.78)	–	0.11 (0.98)	8.43 (0.48)
C.Master	–	–	5.92 (0.44)	–	–	8.32 (0.50)
D.Doctorate	–	–	–	–	–	–

*p < 0.05, **p < 0.01.

Table 5. LSD's *post hoc* comparisons output for teacher sense of efficacy according to school type.

	TSES [*t*/(*p*)]			MSS [*t*/(*p*)]		
School type	B	C	D	B	C	D
A. Preschool	−1.81 (0.86)	5.44 (0.61)	0.22 (0.98)	−4.59 (0.78)	7.77 (0.64)	3.54 (0.83)
B. Elementary school	–	7.25 (0.00)**	2.02 (0.30)	–	12.36 (0.00)**	8.13 (0.01)*
C. Pre–secondary school	–	–	−5.23 (0.01)*	–	–	−4.23 (0.18)
D. Secondary school	–	–	–	–	–	–

*p < 0.05, **p < 0.01.

teachers' degrees, $F_{(3,\ 650)} = 2.64$, $p < 0.05$ $\eta^2 = 0.02$. LSD *post hoc* test results are presented in Table 4.

Comparison of perceived self- efficacy and perceived managerial skills by school type

We investigated the differences in teachers' perceptions of their school managers' skills and their own self-efficacy levels by type of the school they work in. Results showed statistically significant differences regarding the type of school they worked in, $F_{(3,\ 650)} = 4.27$, $p < 0.01$, $\eta^2 = 0.06$. There were also statistically significant differences among teachers' perceptions of their managers' skills based on school types $F_{(3,\ 650)} = 5.40$, $p < 0.05$ $\eta^2 = 0.02$. LSD *post hoc* test results are given in Table 5.

Predicting dimensions of perceived self-efficacy based on perceived managerial skills

We tested whether dimensions of teacher self-efficacy were predicted by perceived managerial skills. We tested a theoretical model with perceived managerial skills as exogenous variable predicting three dimensions of perceived teacher self-efficacy: ESE, EIS, and ECM (Figure 1). The model had acceptable fit to the data (χ^2 (430, N = 651) = 1014.80, CFI = 0.916, IFI = 0.916, TLI = 0.909 and RMSEA = 0.040). All sub-dimensions of perceived self-efficacy were significantly predicted by the exogenous variable (perceived managerial skills).

Discussion

The current study provided a contribution to the literature in terms of investigating the relationships between two constructs: teachers' perceptions of their school managers'

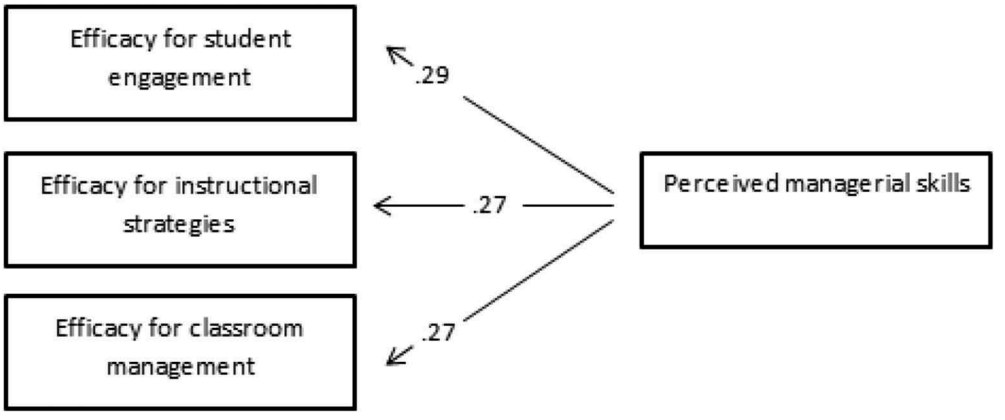

Figure 1. Structural equation model of relations between perceived managerial skills and domains of teacher self-efficacy.

skills and their own self-efficacy levels, while analyzing how these constructs may change based on teacher characteristics. A discussion of the results is provided below.

The relationships between perceived self-efficacy and perceived managerial skills

Findings showed that the level of teacher self-efficacy was strongly related to how teachers believed their managers were skilled. Similarly, Dimmock (2013) and Nir and Kranot (2006) indicated that school managers' effective leadership style was linked to school teachers' professional performance. Also teacher self-efficacy was linked to a number of factors, such as life and career events and context (Klassen & Chiu, 2010). Considering the relationships at the level of scale dimensions, we are not surprised to see, for example, that the way teachers believe they are able to engage students with the teaching content is strongly related to the way managers take responsibility in planning with teachers and helping them organize the classroom.

The significant relationships between teachers' perceptions of their school managers' skills and their own self-efficacy levels might be related to the type of management and leadership employed by the school managers. Studies show that leadership that focuses on organizational objectives and staff efficacy leads to teacher satisfaction, effective staff performance, and professional development (Dimmock, 2013; Nir & Kranot, 2006; Taylor, 2007). This is mostly achieved by school managers through providing organizational support, supervising effectively and serving others in the school (Ware & Kitsantas, 2007).

In this study, teachers who perceived higher managerial skills perceived higher self-efficacy. Tschannen-Moran and Hoy (2007) found that school managers can model skillful managerial behavior, be responsive to teachers' concerns, inspire a common sense of purpose among teachers and allow sufficient resources, which in turn leads to higher teacher self-efficacy. In turn, teachers with high levels of self-efficacy can perform skillful behavior in managing the classroom and providing effective instruction to engage students with the teaching content.

School managers have the modeling power to influence school cultures to cultivate positive attitudes, beliefs and practices within the school (Praisner, 2003). Hipp and

Bredeson (1995) also think that when the school manager models appropriate behavior teacher self-efficacy tends to be higher. It is safe to argue that effective leadership is a significant aspect of managerial skills, and it can construct a common meaning among teachers.

Our findings indicated that the level of perceived managerial skills was significantly related to ECM. This finding is line with Moore and Esselman (1992) who reported that the more teachers were supported by their school managers and were included within decision-making that affects their own classrooms, the greater was their sense of efficacy regarding management of their classrooms. Teachers, who are provided with the necessary resources and mechanisms to plan, organize and implement activities within their classrooms, may possess a high level of self-efficacy to manage their students' needs, interests and activities in classrooms.

Another finding was the significant relationship between perceived technical knowledge and skills of school managers and EIS among teachers, which means that teachers' self-efficacy perceptions in planning for and assessing student learning was linked to their perceptions of school managers' information related to profession and technical information. Esp (2013) maintains that school managers should have adequate practical and theoretical knowledge related to the teaching profession to support planning and implementation of instruction within school.

Perceived self-efficacy and perceived managerial skills based on teacher characteristics

We found that there were significant differences in teachers' perceptions of self-efficacy levels according to years of experience, subject area, educational degree, and school type. First, years of experience influenced perceptions of self-efficacy significantly. Findings showed significantly higher perceived self-efficacy among teachers with 11–-15 years of experience than those with 1–5 and 6–10 years of experience, confirming previous research (Klassen & Chiu, 2010; Tschannen-Moran & Hoy, 2007; Wolters & Daugherty, 2007), which claims that teacher self-efficacy is low in the early stage of a teacher's career but then increases and becomes firmly established as teachers gain experience. However, in line with Klassen and Chiu (2010), we found that perceived self-efficacy declined after 16–20 years of experience. Similarly Huberman (1989) claims that the mid-career years (7–18) are marked by periods of experimentation and activism, and during years 19–30, teachers experience a period of serenity, during which a gradual loss in energy and enthusiasm is experienced.

Second, there were significant differences in teachers' perceptions of their self-efficacy according to subject area. The literature does not contain an adequate number of studies to discuss this finding. Most of the available research (e.g. Leyser et al., 2011) has focused on self-efficacy among general and special education teachers in different settings. However, this study presents innovative results based on a range of subject areas. The most interesting results concern class teachers and school counselors, who had the highest and lowest levels of perceived self-efficacy, respectively. Class teachers in Turkey work in elementary classrooms and are responsible for the majority of courses taught to students in these classrooms. This critical role requires class teachers to develop skills in a range of areas such as classroom management, teaching,

measurement, and evaluation. Such skills may provide class teachers with opportunities to enhance self-confidence and professional competence, which can be linked to self-efficacy (Skaalvik & Skaalvik, 2014). When it comes to school counselors, their low self-efficacy may be linked to a set of variables, including the dissatisfaction with the quality of bachelor's training, lack of in-service supervision and training and the absence of accreditation and role definition guidelines (Sakız et al., 2015).

Third, there were significant differences in teachers' perceptions of their self-efficacy according to educational degree. We found that teachers with a master's degree perceived higher levels of self-efficacy than teachers with a bachelor degree. Similarly, a previous study indicated that as the duration of formal training increases the level of self-efficacy also increases (Soresi et al., 2004). In line with Kara and Aştı (2004), it is highly probable that further education especially when it is related to one's subject area, improves further cognitive and practical skills, leading to higher self-efficacy among teachers.

Further formal training may not always mean higher self-efficacy. We found that teachers with an associate degree had significantly higher self-efficacy perceptions than teachers with bachelor's education. The teachers with an associate degree in Turkey are those with at least 20 years of experience, confirming findings of Tschannen-Moran and Woolfolk-Hoy (2001) who located modest effects of experience on self-efficacy in terms of the instructional and classroom management strategies used by teachers. We argue that experience and successful past performance may have played an important role in self-efficacy among experienced teachers in this study. This is in line with Bandura's (1986) conceptualization of mastery experiences, also known as past performance success or enactive attainments.

Fourth, there were significant differences between teachers' perceptions of their self-efficacy according to the type of the schools they worked in. In this study, pre-school teachers had higher scores than pre-secondary and secondary school teachers. Similarly, elementary school teachers had the highest scores. These results are similar with past research (Klassen & Chiu, 2010; Wolters & Daugherty, 2007) which found that elementary school teachers reported higher self-efficacy than teachers in middle or high schools. This outcome may be related to the nature of the content in primary education which is less academic and the perceived simplicity of managing behavior of younger students and engaging them with the classroom.

In the current study, we analyzed how teachers' perceptions of their school managers' skills changed based on their characteristics. First, we analyzed whether years of experience had a role in teachers' perceptions. We found that teachers with 20 years-experience and more had significantly more positive perceptions than their colleagues with less teaching experience. This finding contradicts Gosmire et al. (2009) who found that school leadership was ranked significantly higher by teachers with 10 to 19 years of teaching experience than by those with 20 or more years. However, Drummond and Halsey (2013) argue that more experience correlates with lower demand ratings among educators. Along similar lines, we argue that young teachers, based on their higher demands, may express both positive and negative perceptions more intensely than their colleagues with more experience.

Second, the role of subject area in teachers' perceptions of managerial skills was significant, unlike Chambers (2011) who did not find a significant difference among

teachers in their perceptions of their principals in an American sample. The significantly higher positive perceptions of managers among class teachers and lower ones among school counselors in the current sample are noteworthy. This might mean, among other possible implications that class teachers who belong to the same subject area with many of the school managers in Turkey may feel more satisfied with the support given to them. However, as Sakız & Sarıcalı (2018) report, school counselors feel that they are not understood by teachers and managers, and they are not provided with sufficient administrative support in Turkish schools.

Third, teachers with an associate educational degree ranked their managers' skills significantly higher than teachers with a bachelor's and master's degree. Our research finding confirms the study of Gosmire et al. (2009), in which teachers with a lower educational degree ranked school leadership higher than those with a higher degree. We believe that teachers with educational specialist degrees may expect higher managerial skills and demand more professional collaboration based on their extended conceptual and methodological qualities. When such expectations are not met, they may cultivate less positive perceptions towards school managers.

Fourth, elementary school teachers in this study ranked skills of their school managers significantly higher than teachers working in pre-secondary and secondary schools. This finding is consistent with Litchka and Shapira-Lishchinsky (2016) whose findings indicated that as the school level increases, teachers' perceptions of their managers' leadership decrease. This can be linked to the fact that schools generally become larger as they move from one level to another and include students with more diverse needs and backgrounds, many of which are difficult to cope with. Second, in schools with higher levels, more layers of management between the principal and the teachers may exist (Litchka & Shapira-Lishchinsky, 2016).

Predicting teachers' perceived self-efficacy based on perceived managerial skills

The structural equation model showed that perceived teacher self-efficacy can significantly be predicted by perceived managerial skills. Among the factors that influence self-efficacy (Schwarzer & Hallum, 2008), managerial skills of school managers is now established as a significant element in the Turkish context.

We are in agreement with the understanding that creating effective schools in which teachers are dedicated to the maximum learning of their students requires a collective look at other related variables in the school system. According to Tschannen-Moran and Hoy (2007), because of the reciprocal causation of contextual factors and self-efficacy beliefs, changes in the cultures and practices in a school may affect self-efficacy of teachers. For example, a school possessing a history of low achievement may lead to low collective efficacy among teachers, resulting in lower persistence and effort, as well as a demoralizing cycle of failure. On the other hand, as student learning and achievement are enhanced self-efficacy among teachers improve, which in turn enhances learning and achievement irrespective of the students' socioeconomic status (Bandura, 1997). Higher levels of collective efficacy were associated with higher levels of teacher self-efficacy (Goddard & Goddard, 2001).

The role of school managers and how they organize the school is important in the process of developing self-efficacy among teachers, which will support student learning,

achievement and school culture. Our study has shown that skills involving effective communication with teachers, problem analysis regarding the issues they experience, and appropriate decision-making in relation to these issues predicted teacher self-efficacy. Similarly, in a number of studies (Fuller & Izu, 1986; Newman, Rutter, & Smith, 1989), teacher self-efficacy was related to key organizational features such as administrators' responsiveness to teachers' concerns and encouragement to try new ideas.

The importance of effective school management and leadership is increasing, with the emergence of new forms of management and leadership styles. The findings of our study now redirect the attention to the importance of developing appropriate managerial skills that involve support for teachers. The developments in the science of teaching (e.g., constructivism, cooperative learning) has made teaching incredibly more complex over the past years. Classical approaches to school management which mainly involved top-down and one-way management has been replaced by the idea that professionals should be mentored by school managers to guide them through developing the skills and managing the stresses of their work (Hargreaves & Fullan, 2000). Teachers are the main providers of the teaching content within the classroom which makes their role unique and extremely important in the school system. Their feeling of efficacy, therefore, is significant, and requires effective school management.

Limitations and suggestions for further research

Our research is the first study in Turkey, and the most detailed one in the related international literature, that provides new insight into the relationships between teacher self-efficacy and school management. However, stronger claims can be built on the findings of the current study through longitudinal studies while findings from such research can inform our understanding of the interplay between the development of teacher self-efficacy and the course of school management over time. In addition, the results of this study are restricted to our reliance on the use of a common method to analyze data. Future studies may employ randomized sampling methods and different data collection and analysis procedures to enrich the methodological perspective to the research questions under study.

In this study, teachers' self-efficacy and their perceptions of managerial skills were analyzed as to how these may change based on teacher characteristics. While doing this analysis, the data including all teachers and managers from various regional cities and schools were taken as a whole. However, analysis based on separate schools or regions could provide additional strength to the findings. In addition, we suggest that additional research examining the relationships among the variables in this study should be conducted in different cultural settings because the role of teacher self-efficacy in relation to school management may vary as a function of cultural context (Klassen & Chiu, 2010).

The sample in this research was restricted to teachers working in Turkish schools. Although we selected teachers from a wide range of regions and schools, participants may not represent other teacher groups in different settings. Also, it is possible that teachers' perceptions were wrong or biased, compared to actual objective assessment of managers' skills. To add, we collected teachers' perceptions of their managers' skills instead of managers' actual skills. In order to come up with more reliable data and more

representative findings, future research may include a more diverse sample and collect data regarding managers' actual skills.

Practical implications and conclusion

Findings of this research have several practical implications for policy-makers and educators. First, the relationships between teachers' sense of self-efficacy and their perceptions regarding their managers' skills indicate that both factors should be holistically focused on while making appropriate arrangements by the Ministry of National Education and other decision-makers. For example, the recent in-service teacher training regulation in Turkey (No: 29,329, enacted in 17 April 2015) was planned and implemented with little consideration of whether school managers were capable of managing and supervising the training process. However, arrangements that aim at improving the development of teachers should focus on school managers' current capacity of development. It should be kept in mind that managers who are motivated to apply management styles that prioritize equity, effective communication, servant leadership, and problem-solving, may support teacher self-efficacy in their schools.

Teachers are the most influential stakeholders when it comes to efficacy of a school because teachers' judgment of their efficacy directly affects student learning and development. This study has shown that managers' perceived skills promise more enhanced teacher self-efficacy. Therefore, more specific plans, focusing both on school management and teacher improvement, should be carried out within a systemic improvement plan in the educational system.

Disclosure statement

No potential conflict of interest was reported by the authors.

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