



# Principals' leadership and teachers' motivation

## Self-determination theory analysis

Ori Eyal

*School of Education, Hebrew University of Jerusalem, Jerusalem, Israel, and*

Guy Roth

*Department of Education, Ben-Gurion University of the Negev,  
Be'er-Sheva, Israel*

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### Abstract

**Purpose** – The purpose of this paper is to investigate the relationship between educational leadership and teacher's motivation. The research described here was anchored in the convergence of two fundamental theories of leadership and motivation: the full range model of leadership and self-determination theory. The central hypotheses were that transformational leadership would predict autonomous motivation among teachers, whereas transactional leadership would predict controlled motivation. The authors further predicted that autonomous motivation would mediate the relations between transformational leadership and teachers' burnout and that controlled motivation would mediate the relations between transactional leadership and burnout.

**Design/methodology/approach** – Questionnaires assessing the variables of interest were completed by 122 Israeli teachers.

**Findings** – Results, based on structure equation modeling, supported the hypotheses, suggesting that leadership styles among school principals play a significant role in teachers' motivation and well-being.

**Research limitations/implications** – The school's environment in Western society is characterized by many impositions and pressures that affect teachers' well-being, as reflected in their quality and intensity of motivation, affect, and burnout. Thus, the present research findings suggest that if the power in educational systems is delegated to school principals, and if the latter are encouraged and trained to be autonomy supportive toward their educational staff, then these steps may potentially facilitate teachers' autonomous motivation, satisfaction, and well-being.

**Originality/value** – Few studies have examined the relationship between various styles of leadership and different types of motivation among followers. The present novel study has the potential to fill this gap by empirically studying the relationship between educational leadership and teachers' motivation.

**Keywords** Israel, Leadership, Motivation (psychology), Teachers, Transformational leadership

**Paper type** Research paper



Leadership is often described as the ability to enlist, mobilize, and motivate others to apply their abilities and resources to a given cause. This capacity is fundamental to discussions of charismatic or transformational leadership in general and in the educational sphere in particular. It illuminates the ways in which individuals influence others and persuade them to devote their utmost efforts to tasks that promote their goals. Nonetheless, few studies have directly examined the relationship between various styles of leadership and different types of motivation among followers (Bono and Judge, 2003).

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The present study aims at bridging the gap between theories of leadership and motivation.

The impressive body of empirical research on leadership has extensively compared styles and models of leadership. Most salient is the distinction between transformational and transactional leadership proposed by the full range model of leadership (Bass and Avolio, 1994). Transformational leadership inspires individuals to exceed their expected behavior (Yukl, 1998). This type of leadership enlists and motivates followers to identify with the leader and to develop an affinity for collective goals and visions.

Transformational leaders' impact on their followers was ascribed to their ability to nurture followers' needs, empower them, and give them a sense of mission toward ethical and broad objectives that exceed their own goals. These leadership abilities were described as linked to transformational leaders' tendency to articulate a clear vision, serve as a model, and provide attention and consideration to followers. More specifically, Avolio *et al.* (1999) claimed that transformational leadership involves four main leadership behaviors: idealized influence, intellectual stimulation, individualized consideration, and inspirational motivation. Transformational leaders exert idealized influence by considering their followers' needs, acting according to the organization's values and serving as a model to be emulated. They provide intellectual stimulation by soliciting creative thinking, challenging followers, and stimulating them to question, reframe problems, and approach old situations in innovative ways. These leaders display individualized consideration by attending to individual needs and differences and by helping followers work toward higher levels of potential. Lastly, transformational leaders provide inspirational motivation by providing meaning and challenge, acting enthusiastically, and supporting team spirit (Avolio *et al.*, 1999). Under a transformational leadership style, followers commit themselves to common purposes and are encouraged to challenge basic organizational or social assumptions.

In contrast to transformational leadership, transactional or monitoring leadership is based on rewards for compliance. The focus is on maintaining efficient management and complying with organizational rules and policies (Bass and Avolio, 1994). More specifically, transactional leadership involves an exchange process between the leader and the followers, intended to increase followers' compliance to the leader and the organizational rules (Yukl, 1998). Leaders who maintain tight logistical control by emphasizing compliance with rules and procedures, by checking on the progress and quality of work, and by evaluating the performance of individuals and of the organizational unit would rate high for monitoring behavior (Quinn, 1988; Spreitzer *et al.*, 1999). Thus, subordinates of transactional leaders are not necessarily expected to think innovatively (Eyal and Kark, 2004) and may be monitored on the basis of predetermined criteria (Bass, 1985).

Despite the extensive comparative research on leadership styles, few empirical attempts were undertaken to examine the impact of various leadership styles on the motivation of followers. Yet, a number of scholars in the field have offered promising theoretical frameworks. To explain the motivational effect of charismatic (transformational) leadership, Shamir *et al.* (1993) maintained that such leaders foster intrinsic motivations related to self-concept. Their theory of leadership asserted that charismatic leaders promote followers' intrinsic motivation to act beyond their job description by elevating their self-esteem, self-value, and social identification. Following Shamir *et al.* (1993), Kark and Van Dijk (2007) employed Higgins's (1998) theory

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of regulatory focus to suggest that transformational leadership would predict followers' promotion of goals related to the self and to their hopes and aspirations. In contrast, Kark and Van Dijk (2007) argued that transactional leadership would focus on external expectations and obligations, and would predict followers' avoidant motivational orientation.

These perspectives represent a convergence of leadership and motivation theories; however, they remain in the realm of theory that has not yet been verified by direct empirical research. In an attempt to bridge this gap, the current empirical study investigated the relations between leadership styles and followers' autonomous versus controlled motivation. Based on self-determination theory (SDT) (Ryan and Deci, 2000b), as described next, we hypothesized that transformational leadership would predict followers' autonomous motivation, whereas transactional leadership would predict followers' controlled motivation.

### **SDT of motivation and internalization**

SDT (Deci and Ryan, 1985, 2000) presents a differentiated account of motivation that begins with the distinction between amotivation (i.e. lack of motivation or intention to act) and motivation. Amotivation results from not valuing an activity (Ryan, 2006), not expecting it to yield a desired outcome (Seligman, 1975), or not feeling competent to perform it (Bandura, 1986; Deci, 1975). Motivation, in contrast, results when the person believes that engaging in the behavior will result in some desired experience or outcome.

Motivation is then differentiated into intrinsic and extrinsic motivation. Intrinsic motivation involves performing an activity because the activity itself is interesting. This comprises the prototype of autonomy because the person is willing to do the activity volitionally, out of interest. Extrinsic motivation involves performing an activity because it leads to some separable consequence. Thus, activities that are uninteresting will require extrinsic consequences in order for the person to be motivated. Research has shown that doing activities for external consequences tends to be experienced as controlled (Deci *et al.*, 1999) rather than autonomous. SDT has suggested that for an extrinsically motivated behavior to become more autonomous, the self-regulation of that behavior and the value attributed to that behavior must be internalized.

With respect to internalization, the theory further differentiates types of internalization according to the degree to which they have been internalized and therefore the degree of autonomy characterizing the resulting behaviors (Roth *et al.*, 2006; Ryan and Connell, 1989). When the motivation for an activity has not been internalized, regulation is said to be external. The behavior is enacted compliantly and is considered controlled. When the motivation for an activity has been internalized, it takes on one of three types. The first type of internalization, referred to as introjection, involves taking in a value and regulation of behavior, but not accepting it as one's own. Instead, one merely applies the contingencies of approval or worth to oneself that were previously applied by others. Thus, one tends to feel an inner compulsion to behave, one's self-esteem is contingent upon behavior, and the behavior is considered controlled, even though the regulation is now within oneself. A fuller type of internalization is referred to as identified regulation. Here, one has identified with the importance of the activity for oneself and thus performs the behavior quite autonomously, even though one does not find the activity inherently interesting. Finally, when that identification has been reciprocally assimilated with other

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aspects of oneself, the regulation is considered integrated. Identified/integrated regulation and intrinsic motivation are considered autonomous forms of regulation.

Considerable research (Grolnick and Ryan, 1989; Ryan *et al.*, 1993) has indicated that controlled regulation (external and introjection) tends to be associated with negative psychological consequences, whereas autonomous motivation (identified, integrated and/or intrinsic motivation) tends to be associated with positive psychological consequences like high performance, well-being, and low burnout (Baard *et al.*, 2004; Gagné and Deci, 2005).

Given the positive consequences of employees' autonomous motivation and the costs that may be attributed to their controlled motivation, it seems essential to explore the antecedents of these types of motivations. SDT suggests that autonomous motivation is likely to flourish in environments that are supportive of autonomy. A large body of research has identified several autonomy-supportive behaviors such as provision of rationale, provision of choice, allowing criticism, encouraging critical thinking, and demonstrating the intrinsic value of a behavior (Assor *et al.*, 2002; Gagné and Deci, 2005; Roth *et al.*, 2009). External motivation, on the other hand, is more likely to be found in a controlled environment characterized by external pressures to behave in given ways (Stone *et al.*, 2009). These theoretical assumptions have been supported in domains as varied as education, parenting, sports, and health care (Gagné and Deci, 2005). However, empirical support for these arguments in the area of leadership is relatively scarce.

### **Leadership and autonomous motivation: an empirical overview**

As mentioned earlier, the most prominent leadership model discussed in the literature is the full range model of leadership (Bass, 1985) that distinguishes between transformational and transactional leadership. Inasmuch as transformational leadership involves dimensions such as individualized consideration, intellectual stimulation, and inspiration by articulating a clear and justified vision, scholars have suggested that this type of leadership behavior is autonomy supportive (Gagné and Deci, 2005; Sheldon *et al.*, 2003). These scholars claimed that presenting followers with a value-laden vision and empowering them to take part in its interpretation and development will instigate individuals' discretionary construction of the meaning of their work and of the organization's mission. Thus, transformational leadership may generate followers' identification with the organization's goals and the leader's vision, which is an important characteristic of autonomous motivation.

In contrast, transactional leadership, which involves contingent rewards and management by exceptions, has been described as controlling and as hindering followers' self-determination (Gagné and Deci, 2005; Sheldon *et al.*, 2003). More specifically, these scholars claimed that transactional leadership's emphasis on extrinsic rewards and on monitoring followers' work activities will create a controlling context in which the followers experience high coercion and low self-determination (or autonomous motivation).

Baard (2002) and Baard *et al.* (2004) found that followers' perceptions of managers' autonomy-supportive behavior predicted followers' adaptation and performance. Also, autonomy support was linked with followers' work satisfaction (Deci *et al.*, 1989), internalization of the importance of new working methods, and intrinsic motivation (Lynch *et al.*, 2005). However, as noted earlier, research on the relations between leadership styles and employees' motivations is scarce.

In one of few studies that directly explored the relations between leadership and motivation, Bono and Judge (2003) reported that transformational leadership predicted followers' self-concordance goals (autonomous motivation for one's specific goals). They also found that self-concordance mediated the relations between transformational leadership and outcomes such as task performance and innovation. This study helped uncover the relations between transformational leadership and followers' motivations; however, it did not focus on the followers' motivations regarding their role description but rather regarding their goal orientation. Moreover, the study did not address the full range of leadership styles and the specific relation between transactional leadership and autonomous versus controlled motivation was not explored.

In a similar vein, Charbonneau *et al.* (2001) showed that athletes' intrinsic motivation was predicted by their perceptions of their coach as a transformational leader, and that intrinsic motivation mediated the relations between transformational leadership and athletic performance. Yet, like Bono and Judge (2003), Charbonneau *et al.* did not address other forms of leadership and was based on a sample of competitive, highly driven athletes. Alternatively, the present study focuses on teachers' motivations and principals' leadership styles while comparing the outcomes of transformational and transactional leadership in relation to teachers' controlled versus autonomous motivation.

The dearth of research concerning school principals' leadership styles and teachers' autonomous versus controlled motivations is surprising, especially when compared to the rich literature concerning teaching styles and students' motivations (Assor *et al.*, 2002, 2005; Deci *et al.*, 1981; Grolnick and Ryan, 1987; Jang, 2008; Reeve, 2002; Reeve *et al.*, 1999, 2003; Roth *et al.*, 2007; Roth and Bibi, 2010).

### **Principal leadership and teacher motivation**

The relationship between school leadership and teacher motivation is related in the research literature to the attempt to better understand principals' impact on school performance (Hallinger and Heck, 1998; Leithwood and Jantzi, 2005; Leithwood and Mascall, 2008; Robinson *et al.*, 2008; Supovitz *et al.*, 2010; Witziers *et al.*, 2003). Studies have shown that school leadership affects student outcomes (i.e. students' rates of attendance, achievement, graduation, and college enrollment) indirectly, by creating the conditions that support teachers' ability to teach and students' learning (Hallinger and Heck, 1996; Leithwood *et al.*, 2007; Porter *et al.*, 2010) rather than directly (Robinson *et al.*, 2008; Witziers *et al.*, 2003). According to Porter *et al.* (2010), these conditions include high standards for student learning, rigorous curricula, quality instruction, a culture of learning and professional behavior, connections to external communities, and performance accountability. Others found that school leadership showed a small to medium indirect effect on students' achievements through school climate, school mission (Bosker *et al.*, 2000; Hallinger and Heck, 1998), and teachers' job satisfaction (Bosker *et al.*, 2000; Griffith, 2004; Hallinger and Heck, 1998).

Scholarly writings have linked the aforementioned conditions with increased teacher motivation to exert extra effort in teaching (Geijsel *et al.*, 2003), to investigate better ways of teaching, to try new theories of learning and new instructional strategies (Leithwood and Jantzi, 2006; Supovitz *et al.*, 2010), and to adopt educational reforms (Geijsel *et al.*, 2003). Thus, teachers' engagement and motivation has been studied mostly as a mediating factor between school leadership and students' learning (Hallinger and Heck, 1998;

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Leithwood and Jantzi, 2006; Leithwood and Mascal, 2008; Robinson *et al.*, 2008; Supovitz *et al.*, 2010).

In this context, reviews of studies on transformational leadership concluded that its major influence on teachers' extent of motivation occurred when the principal developed a clear vision, framed school goals including high-academic goals, and gained staff consensus on desired outcomes (Hallinger and Heck, 1998; Leithwood, 1994; Leithwood *et al.*, 1999a, b; Leithwood and Steinbach, 1991). More specifically, transformational leadership dimensions (e.g. vision building, intellectual stimulation, individualized consideration) were found to directly influence teachers' amount of motivation (Geijsel *et al.*, 2003; Leithwood and Jantzi, 2005), which in turn affected students' achievements and learning (Leithwood and Jantzi, 2005).

Scholars argued that vision building potentially offers the greatest capacity to influence teachers' motivation because the vision provides personal goals for the teacher, as well as a desire to see a change in the future. Accordingly, goals must be clear and concrete and include short- and long-term objectives (Geijsel *et al.*, 2003), so that they will motivate and inspire followers to sacrifice their own interests for the sake of the organization (Barnett and McCormick, 2003). Barnett and McCormick argued, however, that beyond defining attainable goals, the vision must also reflect the needs and interests of the school community and be connected to reality.

Individualized consideration – which includes the leader's support of subordinates' professional and personal development – was found to promote teachers' sense of competence, self-efficacy, and therefore also their motivation (Geijsel *et al.*, 2003). Finally, intellectual stimulation – which encourages followers to “question traditional beliefs, to look at problems in a different way, and to find innovative solutions for problems” (Yukl, 1999, p. 288) – was found to buffer teachers from negative contextualized beliefs regarding current change initiatives in their schools and thus motivated them to adopt the changes (Geijsel *et al.*, 2003). Therefore, it seems that transformational leadership, in addition to motivating teachers to implement the shared vision, provides support for teachers' desire for autonomy by encouraging individual efforts and giving direction based on needs and necessity (Barnett and McCormick, 2003).

Although transformational leadership was shown to bolster teachers' long-term problem-solving capabilities (Leithwood and Steinbach, 1991), it demonstrated a greater impact on teaching and learning when complemented by instructional leadership and/or shared/collaborative leadership (Hallinger, 2003; Marks and Printy, 2003). This extended effect can be explained by the impact these leadership forms have on teachers' motivation. For instance, Blase and Blase (1999) found that activities stemming from instructional leadership, which promote teachers' reflection (e.g. giving feedback, making suggestions, modeling, etc.) and professional growth (e.g. developing coaching relationships, supporting collaboration among educators, staff development, etc.), have positive effects on motivation. In addition, collective leadership, a model that includes multiple sources of leadership and influence in school, was found to render a significant impact on students' achievements through teacher motivation. According to the collective leadership model, three factors play a part in determining motivation: personal goals, beliefs about one's capacities, and beliefs about one's context or situation. Thus, increased control and the distribution of power to those lower in the organizational hierarchy lead to a greater sense of responsibility and motivation to implement organizational goals (Leithwood and Mascal, 2008).

In sum, results from previous research showed that school leadership can motivate teachers to exert extra effort in their work, which in turn was related to teaching and learning. Yet, these studies failed to differentiate between the impact of leadership on teachers' autonomous versus controlled motivations, and their relations to teachers' well-being.

### **SDT and teachers' motivation: implications for school leadership and its impact on teachers' burnout**

Two recent studies demonstrated the relevance of SDT for studying the relations among leadership, teachers' motivation, and their psychological consequences. Roth *et al.* (2007) showed that teachers' autonomous motivation toward teaching predicted students' autonomous motivation toward learning, through students' perceptions of autonomy-supportive teaching. In addition, Pelletier *et al.* (2002) reported that teachers' autonomous motivation predicted autonomy-supportive teaching. Furthermore, Roth *et al.* (2007) found that autonomous motivation was negatively related to teachers' self-reported burnout and positively related to teachers' sense of self-actualization at work, whereas the reverse was true for teachers' controlled motivation. Given the specific characteristics of the public educational system in Western society, testing antecedents and outcomes of teachers' types of motivation seems of special importance.

The educational environment pressures the schools' educational staff in many ways, such as external restrictions, imposed reforms, imposed standards, multiple goals, and so forth. These impositions and pressures affect teachers' well-being, as reflected in their quality and intensity of motivation, affect, and burnout (Retelsdorf *et al.*, 2009). In line with this assertion lies the claim that in educational systems the power should be delegated to allow school principals to facilitate teachers' motivation, satisfaction, and well-being (Blase and Kirby, 2000; Briggs and Wohlstetter, 2003; Leithwood *et al.*, 1999). Thus, the present research aimed to explore the relations among leadership styles, teachers' types of motivation, and teachers' burnout. The experience of burnout refers to the association of teaching with feelings of exhaustion, lack of energy, and depletion of mental resources (Friedman and Farber, 1992; Maslach and Jackson, 1981), an experience that stands in contrast to a sense of personal accomplishment.

According to SDT, autonomous motivation for teaching, theoretically claimed to be associated with transformational leadership (Gagné and Deci, 2005; Sheldon *et al.*, 2003), should be positively associated with feelings of personal accomplishment and negatively associated with feelings of burnout and exhaustion. In fact, the link between autonomous motivation and personal accomplishment is a basic tenet of SDT (Ryan, 1993; Ryan and Deci, 2000a). Hence, being autonomously motivated (or self-determined) not only leads a person to generate greater efforts, but also to an experience of vitality and energy, which are the opposite of feeling drained and exhausted (La Guardia *et al.*, 2000; Niemiec *et al.*, 2006; Ryan and Frederick, 1997). In line with this reasoning, Pelletier *et al.* (2002) demonstrated that teachers who perceived more pressure from above (e.g. the need to comply with a curriculum or with performance standards), often associated with transactional leadership (Quinn, 1988; Spreitzer *et al.*, 1999), were less self-determined regarding teaching. Furthermore, as already noted, Roth *et al.* (2007) found that teachers' controlled motivation correlated positively with burnout and negatively with personal accomplishment, whereas the reverse was true for autonomous motivation. Consistent with these findings, we posited that because autonomously

motivated teachers perceive their engagement in various teaching tasks as interesting and meaningful, they will experience less exhaustion. Thus, teachers' sense of autonomy at work may allow them to tolerate occasional frustrations and setbacks, and to prevent those negative experiences from leading to feelings of burnout and loss of vitality.

**Hypotheses**

Figure 1 shows the research hypotheses schematically. Based on the preceding considerations, we hypothesized that teachers' perceptions of principals' transformational leadership would be positively correlated with autonomous motivation and negatively with burnout. In addition, we hypothesized that autonomous motivation would mediate the relations between transformational leadership and burnout. We further predicted that transactional leadership would be positively correlated with controlled motivation and burnout, and that controlled motivation would mediate the relations between transactional leadership and burnout.

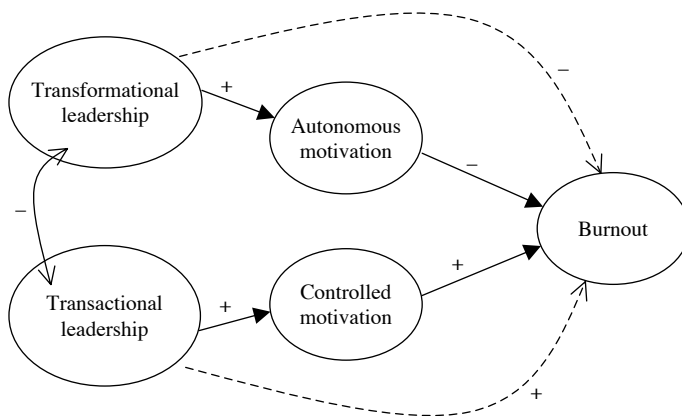
**Method**

*Participants and procedure*

Participants were 122 Israeli elementary school teachers (107 females; mean age = 39 years, SD = 8.80; mean seniority = 12.46 years, SD = 10) who voluntarily enrolled in a 60-hour in-service professional development course on instruction in mathematics, conducted in three higher educational institutions. The teachers were affiliated with different public schools; thus, the unit of analysis was teachers rather than schools. Participation in the study was optional and restricted to teachers who had been working with their school principal for more than one year (mean was 4.42, SD = 2.64). The authors obtained permission from the program organizers for qualified experimenters to approach the teachers, who completed the questionnaires in their professional development class. Confidentiality was assured.

*Measures*

The teachers completed a questionnaire set assessing three measures: perceptions of principals' leadership, self-reported motivations, and self-reported burnout.



**Figure 1.** Schematic representation of the research hypotheses: teachers' motivation types as mediators of the relations between principals' leadership styles and teachers' burnout



Construct validity for each measure was tested by confirmatory factor analysis, as shown below in the section delineating the analytical procedure.

*Leadership styles.* The multifactor leadership questionnaire (MLQ 5X; Avolio *et al.*, 1999), derived from Bass (1985), was used to measure teachers' perceptions of principals' leadership styles. The use of this scale for measuring principals' leadership styles is well documented (Leithwood and Jantzi, 2005) and showed acceptable reliability and validity (Bogler, 2001; Eyal and Kark, 2004).

The transformational leadership factor (Cronbach's  $\alpha = 0.84$ ) comprised 16 items, rated on a five-point Likert-type scale ranging from 1 (never) to 5 (always), tapping the four subcomponents of transformational leadership style as described by Bass and Avolio (1994): intellectual stimulation, individual consideration, inspiration, and individual influence. Items measuring attributed charisma, which have been criticized for representing leadership impact rather than leadership behavior (Kark *et al.*, 2003; Yukl, 1998), were not included.

The monitoring aspects of transactional leadership were measured by the four-item "management by exception (active)" component (Cronbach's  $\alpha = 0.66$ ), rated on a five-point Likert-type scale ranging from 1 (never) to 5 (always). Thus, higher scores indicated a stronger perceived transactional leadership style.

*Motivation types.* Controlled and autonomous teacher motivations were measured using an 16-item scale developed by Roth *et al.* (2007), based on Ryan and Connell's (1989) conceptualization and measurement. Four types of motivation were examined: external, introjected, identified, and intrinsic. The teachers reported on their reasons for their investment in their work. There were 16 responses, representing the four types of motivation. Teachers indicated the extent to which they agreed with each response using a five-point Likert-type scale. An example of a response representing external motivation was: "[. . .] because I want the parents to be satisfied so they won't complain"; introjected: "[. . .] because otherwise I would feel guilty"; identified: "[. . .] because it is important for me to make children feel that I care about them"; intrinsic: "[. . .] because I enjoy finding unique solutions for various students." Each motivation was assessed by four items. Items were mixed across the four motivation types, so that the items representing the same type of motivation were not grouped together. The autonomous motivation score was based on the intrinsic and identified scales and the controlled motivation score was based on the external and interjected scales. Cronbach's  $\alpha$  coefficients were 0.71 and 0.79 for autonomous and controlled motivations, respectively.

*Burnout.* Friedman and Farber's (1992) ten-item burnout scale was used to assess emotional exhaustion. Teachers rated the extent to which they agreed with items such as "I feel exhausted at the end of a day in school" along a seven-point Likert-type scale ranging from completely disagree (1) to completely agree (7). Cronbach's  $\alpha$  coefficient was 0.94.

#### *Analytical procedure*

First, construct validity was tested by a confirmatory factor analysis. Thus, we tested the fit of the measurement model using AMOS 5.0 (Arbuckle and Wothke, 2003). Latent variables were computed by using the items as indicators, except for transformational leadership where the indicators were the means of the four subcomponents derived from Bass and Avolio's (1994) conceptualization (i.e. intellectual stimulation, individual consideration, inspiration, and individual influence). Acceptable fit of the model with

the data would be indicated by a ratio of  $\chi^2$  to degrees of freedom of less than 2 (Carmines and McIver, 1981), a root mean square error of approximation (RMSEA) (Browne and Cudeck, 1993) less than 0.08, and an incremental fit index (IFI) (Bollen, 1989) and comparative fit index (CFI) (Bentler, 1990) of 0.90 or above (Browne and Cudeck, 1993; Hoyle, 1995). The measurement model results supported the hypothesized factor structure of all the scales. The fit indices were adequate:  $\chi^2$  (265, N = 122) = 407.49,  $p < 0.01$ ;  $\chi^2/df = 1.54$ ; and CFI, IFI, and RMSEA of 0.90, 0.91, and 0.06, respectively.

Further, in an effort to examine whether the motivation types mediated the relations between leadership and teachers' burnout, we tested the relevant structural model with latent variables (Hoyle, 1995). Additionally, to test whether the mediation was full or only partial, we compared the hypothesized model to models that included, in addition to the indirect effects, direct effects between leadership types and the outcome measure (i.e. teacher burnout). Each comparison was conducted separately, allowing comparison of nested models. To test the hypothesized model, we used AMOS 5.0 (Arbuckle and Wothke, 2003) with maximum likelihood estimation.

### Results

Table I presents descriptive statistics and correlations among the study variables. As seen in the table, the mean of transformational leadership was higher than the mean of transactional leadership. Thus, the mean transformational leadership score (3.49) was a little more than half a standard deviation higher than the neutral score (3 on the five-point scale), whereas the transactional mean (2.73) was about one quarter of a standard deviation lower than the neutral score. Similar differences emerged between autonomous and controlled motivation; thus, the latter was lower than the former. Finally, in this sample, teachers' sense of burnout was quite low ( $M = 2.32$  on the seven-point scale). This low rate of burnout may perhaps reflect the fact that the participating teachers had volunteered to attend the in-service professional development program, probably indicating their desire to invest in learning and developing as teachers. Nonetheless, examining the hypothesized associations among these teachers seems to be a strong test for the study hypotheses, because it may convey that principals may undermine or increase burnout even among highly motivated teachers who score low on measures of burnout.

The correlational data supported our hypotheses. As expected, a significant negative correlation emerged between transformational leadership and burnout, whereas a significant positive correlation emerged between transactional leadership and burnout. No significant relation was found between transformational leadership and controlled motivation, whereas, as expected, the relation between transformational leadership and autonomous motivation was significant and positive. The reverse was true

	M	SD	1	2	3	4	5
1. Transformational	3.49	0.70	–				
2. Transactional	2.73	0.87	0.03	–			
3. Controlled motivation	2.92	0.71	0.11	0.19*	–		
4. Autonomous motivation	3.94	0.49	0.23*	–0.1	–0.1	–	
5. Burnout	2.32	0.81	–0.21*	0.28**	0.24**	–0.37**	–

Note: Significance at: \* $p < 0.05$  and \*\* $p < 0.01$

**Table I.**  
Pearson correlations  
among the research  
variables

for transactional leadership style, which did not relate significantly to autonomous motivation but did relate positively and significantly to controlled motivation.

Further, a structural equation modeling analysis with latent variables was conducted (Hoyle, 1995) to test the mediational role of motivation in the relation between principals' leadership and teachers' burnout.

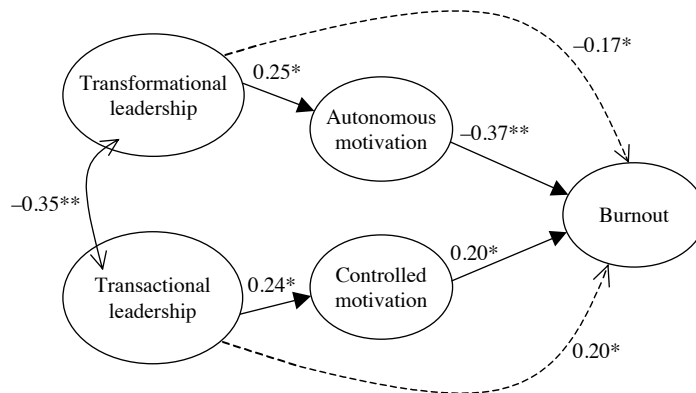
As seen in Figure 2, the results for the structural model supported our hypotheses. All the path coefficients were significant and in the hypothesized direction. The model showed an acceptable fit to the data:  $\chi^2(268; N = 122) = 410.02, p < 0.01$ ;  $\chi^2$  to degrees of freedom ratio of 1.53; and CFI, IFI, and RMSEA of 0.90, 0.91, and 0.06, respectively.

In the next phase of data analysis, we compared the hypothesized model (in which relations between leadership styles and burnout were indirect, thus mediated by types of motivation) to two models that included a direct path from each independent variable to burnout. Each direct path was added separately, allowing us to compare goodness of fit of nested models. Results showed that the direct paths improved the model fit in both cases: for the direct path between transformational leadership and burnout ( $\Delta\chi^2_{(1)} = 4.9; p < 0.05$ ), and for the direct path between transactional leadership and burnout ( $\Delta\chi^2_{(1)} = 10.4; p < 0.05$ ). Therefore, the hypothesized model that involved direct and indirect effects, which indicated partial mediation, was preferred. The direct paths are shown in Figure 2 by dashed lines[1].

### Discussion

The results of the present study revealed two important findings. First, transformational leadership was negatively associated with teachers' burnout, and this association was partially mediated by teachers' autonomous motivation. Second, transactional leadership was positively correlated with teachers' burnout, and this association was partially mediated by teachers' controlled motivation. Thus, principals' leadership style, as perceived by teachers, was a predictor of teachers' motivation type and feelings of exhaustion in school.

Scholars have described the contemporary schools' environment as unstable and at risk, a description manifested by teachers' burnout, dissatisfaction, low performance, high turnover, and so on (Deborah, 2007; Valli and Buese, 2007). Thus, the significance



**Figure 2.** Teachers' motivation types as mediators of the relations between principals' leadership styles and teachers' burnout

**Notes:** \* $p < 0.05$  and \*\* $p < 0.01$ ; indicators and error terms were omitted for clarity

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of examining the role of the principal as a key re-framer of teacher's conceptions of education and school is paramount. Given the significant role of autonomous motivation in adaptation, quality of learning, quality of teaching, and students' and teachers' performance and well-being, the importance of this phenomenon for educators cannot be overemphasized. Past research has demonstrated the important role of managers' behaviors on subordinates' motivation in working settings (Gagné and Deci, 2005), but, to our knowledge, the present study is the first to directly explore the simultaneous effects of transformational and transactional leadership styles on autonomous and controlled motivation.

Although past research studies have demonstrated the effectiveness of transformational leadership by linking it to followers' trust, job satisfaction, organizational commitment, and job performance (Fuller *et al.*, 1996; Lowe *et al.*, 1996), seldom did researchers address the possible processes underlying those relations. Hence, the present findings, alongside Bono and Judge's (2003) study, give a first empirical indication of a possible reason for this effectiveness, namely, promoting an autonomous motivation that minimizes burnout and, according to past research, relates to self-actualization (Roth *et al.*, 2007), high performance, and well-being (for a review, see Gagné and Deci, 2005). On the other hand, the current empirical findings showed that transactional leadership characterized by controlling practices did in fact predict controlled motivation in teachers and was accompanied by burnout, a cost similar to those found previously for followers like lower job satisfaction, lower persistence, and higher turnover (Gagné and Deci, 2005).

Based on the present results, we suggest that principals seem to play a major role in teachers' motivation. Although this proposition was tested by previous studies in education (Blase and Blase, 1999; Geijsel *et al.*, 2003; Leithwood and Jantzi, 2005; Leithwood and Mascall, 2008; Leithwood and Steinbach, 1991), the sources for teachers' motivation driven by the principals' behaviors were not tested.

The current results may clarify how different leadership styles are related to different sources of teacher motivation. The results show that transactional leadership – characterized by controlling practices such as monitoring subordinate behaviors and demanding compliance with the organization's regulations and standards – is associated with controlled motivations, which, according to SDT, are experienced as sources of external or internal pressure (Deci and Ryan, 1985). These pressures can, at best, drive teachers to act out of extrinsic motivation, which was found to predict shallow and rigid behaviors as opposed to autonomous motivation, which was found to predict flexible and profound behaviors (Roth *et al.*, 2009; Vansteenkiste *et al.*, 2005).

Conversely, transformational leadership – characterized by the articulation of a salient organizational vision and the empowerment of teachers – is associated with autonomous motivation, which, according to SDT, enables subordinates to integrate the vision with other aspects of the self (Deci and Ryan, 1985). This integration may drive teachers to realize their authentic self, often referred to as self-actualization (Bass and Riggio, 2006).

Although previous studies implied that school leadership promotes teachers' self-actualization in order to motivate them (Barnett and McCormick, 2003; Hallinger, 2003), this was not examined directly or indirectly. We did not measure teachers' self-actualization either, but based on the aforementioned results we can speculate that autonomy-supportive behaviors that facilitate internalization of extrinsically motivated behavior are the ones that advance teachers' self-actualization. Furthermore, based on

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the current study results, we suggest that transformational leadership may promote teachers' identification with the school's cause and mission even when the actual actions that teachers are expected to perform are not interesting for their own sake. This is implied by the fact that transformational leadership was related to autonomous motivation, which not only includes intrinsic sources of intentional action but also external ones that have been internalized (identified/integrated regulation).

Thus, it seems that by providing teachers with an autonomy-supportive working environment, principals can help teachers construct the meaning of their mission and help them make sense of their role and the educational sphere. Moreover, we argue that, as a result, autonomously motivated teachers perceive their engagement in various teaching tasks as interesting and meaningful. For that reason, they may experience less exhaustion than other teachers. It seems that teachers' sense of autonomy at work may allow them to tolerate occasional frustrations and setbacks, and may prevent those negative experiences from leading to feelings of burnout and loss of vitality.

It is possible that the relations between principals' leadership styles and different types of teachers' motivation, presented in the current study, can expand our understanding of how principals impact instruction and learning in schools. Although school leaders seem to strongly impact the emergence of a vital professional environment that promotes students' adaptation and well-being, they also appear to promote teachers' growth and fulfillment. It is possible to speculate that those principals who acknowledge the latter may utilize this potential to benefit students. Adopting a humanistic approach for human development is thus an Archimedean point from which principals should strive to interpenetrate school reality both for themselves and for others, be they students, teachers, or other stakeholders. Under these circumstances, teachers can experience and adopt a self-determined proactive stance, rather than a reactive compliant position.

It is important to note, however, that the magnitude of the relations detected among the variables of interest was small or modest at best. Modest associations are to be expected because leadership type is only one factor that affects teachers' motivation and burnout. For example, it is possible that teachers' type of motivation is also affected by various contextual and personal factors such as the amount of achievement pressure to which teachers are exposed from the principal or the parents (as have been found by Pelletier *et al.* (2002)), the degree of heterogeneity within the classroom in terms of basic skills or emotional needs, or teachers' level of identity development (Marcia, 1993). The same seems to be true for teachers' feelings of burnout, which are affected by a variety of contextual and personal factors other than autonomous or controlled motivation for teaching. For example, research suggested that teachers' feelings of exhaustion or accomplishment at work are affected by low wages relative to other groups (Farber and Wechsler, 1991), lack of appreciation from the community (Mazur and Lynch, 1989), role conflict (Burke and Greenglass, 1995; Schwab and Iwanicki, 1982), role ambiguity (Capel, 1987), work overload (Jenkins and Calhoun, 2006; Mazur and Lynch, 1989), peer support and general social support (Brenner *et al.*, 1985; Byrne, 1999; Talmor *et al.*, 2005), number of students with special needs in class (Talmor *et al.*, 2005), prevalence of behavior problems in the classroom (Byrne, 1999), teachers' level of education (Rosenblatt, 2001), and religious beliefs (Lau *et al.*, 2005).

It appears, then, that given the number of factors that can affect the teacher's experiences in school, the associations obtained are not trivial at all. Those modest associations, though, suggest that, in addition to principals' leadership style, there are many other factors that affect teachers' motivation and well-being.

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Although the present study uncovers the relationship between transformational and transactional leadership and teachers' motivation, it provides limited information regarding the relative importance of the different transformational leader's behaviors, that is, intellectual stimulation, individual consideration, inspiration, and individual influence on motivation. Thus, future research would do well to explore how different components of transformational leadership are linked with autonomous motivations. Knowledge of this sort may provide researchers, leaders, and consultants with a better understanding of optimal ways for forming autonomous-supportive environments that can enhance teachers' autonomous motivations, as well as promote meaningful school experiences both among teachers and students. Furthermore, future research should explore the present study's questions on a larger scale, using the school and the leader (i.e. principal) as units of analysis.

Additionally, the present analyses were based on correlations among cross-sectional self-reports. This is problematic in that it raises the possibility that the relations are in part a function of method variance. Thus, further studies utilizing multiple reporters and behavioral observations would be very helpful in confirming the present results. Another difficulty related to the current cross-sectional data is that it does not allow for causal interpretations. It is therefore important to test the hypotheses with prospective longitudinal research.

Finally, the nature of this sample, that of elementary school teachers who voluntarily attended a professional development program, may limit the generalization of the research conclusions. For instance, elementary and secondary school teachers may experience school leadership and its impact on their motivation and burnout differently due to their different school structures, subject matters, student ages, bureaucratic controls, standardizations, and market mechanisms. In addition, teachers who are highly committed to professional development (as sampled in the current study) may possibly endure varying levels of burnout and may relate differently to school leadership's effort to motivate them, compared to other teachers. Therefore, to permit wider generalizations, further research is needed on the relations among leadership styles, teacher motivation types, and teacher burnout among a diversified sample of teachers with regard to characteristics such as age, tenure, education, school type, subject matter specialization, attendance in ongoing professional development programs, and designated roles in school.

Despite its shortcomings, the current study holds potential to fill an important gap in our empirical knowledge concerning the relations between educational leadership and teachers' motivation. As educational systems have recently tightened their control over schools, which in turn may drive principals to practice transactional leadership associated with controlled motivation, the role of principals in generating autonomous motivation among teachers cannot be overstated. Although controlled motivation can lead teachers to comply with the system's standards, it is the autonomous motivation that transforms their jobs into a meaningful experience, drives them to practice autonomy-supportive teaching, protects them from burnout, increases their well-being, improves their effectiveness, and fosters their retention in the system.

#### Note

1. Mediation analysis based on Baron and Kenny's (1986) approach also supported the hypotheses. Further, computation of the Sobel test revealed significant indirect effects for the two mediational paths.

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### Corresponding author

Ori Eyal can be contacted at: [msori@mscc.huji.ac.il](mailto:msori@mscc.huji.ac.il)

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