Teachers' Big Five personality traits, emotion regulation patterns, and moods: Mediation and prototype analyses

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Abstract

Research knowledge about the role of teachers' personality in shaping their mood is still limited. The present study explores the associations between teachers' five broad personality traits (known as the 'Big Five'), emotion regulation (suppression and reappraisal), and mood. Data collated collected from a sample of 113 Israeli teachers were analysed using structural equation modelling analysis and cluster analysis. Path model analysis indicated that suppression mediates the relations between teachers' conscientiousness, extraversion, and neuroticism on one hand, and their negative mood on the other, and that reappraisal mediates the relations between teachers' conscientiousness and their positive mood. Cluster analysis revealed associations between three personality types of teachers with their emotion regulation and mood. The study clarifies the role that teachers' personality traits play in determining their affective life.

Keywords Big Five, emotion regulation, mood, personality, teachers

1. Introduction

According to the literature, teaching has a central emotional aspect that is associated with teachers' affective wellbeing, health, and attrition (Schutz and Zembylas 2009; Sutton and Wheatley 2003). It has been suggested that promoting teachers' affective wellbeing also affects their instructional performance and the performance of their students (Frenzel 2014). In recent years, research on teacher emotions has been flourishing (e.g., Schutz and Zembylas 2009; Uitto, Jokikokko and Estola 2015). Nevertheless, research on teachers' moods and emotion regulation is still in its early stages, and little is known about the associations between teachers' personality, emotion regulation, and mood. This lacuna is puzzling given that personality traits are considered basic psychological features (Chamorro-Premuzic 2016).

The present study explores the associations between teachers' personality, emotion regulation and mood to expand our understandings about how personality affects teachers' emotional life. The psychology literature suggests that personality dimensions influence emotion regulation strategies (Gross and John 2003), and emotion regulation shapes moods (Campbell-Sills and Barlow 2007). Therefore a model in which emotion regulation patterns mediate between teachers' personality and their moods is suggested. The study also investigates the use of the Big Five personality traits, and the association of three personality types suggested in the literature with teachers' emotion regulation and mood. Because of the great diversity among teachers, to support teachers' well-being and growth, it is imperative to understand how personality differences translate into affective differences.

The present paper includes four sections. The first section contains the theoretical background and a presentation of the literature on the effect of teachers'

personality on their emotion regulation and their moods, and of the literature on personality prototypes and their relations to emotion regulation and moods. The second section describes the method used to report on the research design, measures, and procedures of the study. The third section contains the findings and the statistical analyses. The fourth and last section contains the discussion of the findings and their implications for theory and practice, reflections on the limitations of the present study and on future explorations.

2. Theoretical Background

2.1 Teachers' moods

Teachers' emotions are considered to be a key aspect in affecting the quality of instruction in schools (Frenzel 2014). Moods are considered to be longer lasting and more persistent than emotions, and they lack a clear object (Kim, Lee and Kim 2009). The emotions that teachers experience in classroom and in school work, and their emotion management have been subjected to relatively extensive exploration (e.g., Lee, Pekrun, Taxer, Schutz, Vogl and Xie 2016; Sutton and Wheatley 2003), but teachers' moods have been less explored and understood despite extensive evidence of their importance in the literature. For example, Sutton and Wheatley (2003) argued that "positive mood may lead teachers to set more challenging learning goals for students and set more ambitious goals regarding their own teaching" (p. 339). Forgas and Locke (2005) explored how teachers' moods affect their everyday workplace events based on a sample of 102 school teachers. The authors reported that teachers experiencing positive moods caused more optimistic causal attributions about work events than did those experiencing negative moods. Much of previous research has

been devoted to understating the effects of work environment, organisation, and management styles on teachers' moods (mainly negative ones), and less attention have been directed at teachers' psychological aspects (Kim, Lee, and Kim 2009). To date, empirical research on teachers' moods is limited, and there are no studies on the relations of teachers' moods to their personality and to regulation strategies teachers use to control their emotions.

2.2 The effect of teachers' personality on their moods

Personality is defined in the literature as a set of characteristic individual differences in cognitions, affect, and behaviours (DeYoung and Gray 2009). For many years, the focus of personality research was to "describe and measure meaningful stable traits" (Corr and Matthews 2009, p. xxii). One of the most common frameworks used to characterise personality is that of the Big Five personality dimensions, which reflect the five core personality traits: extraversion, agreeableness, conscientiousness, neuroticism, and openness (Barrick and Mount 1991).

High-extraversion individuals tend to be expressive, outgoing, positive, active, and self-confident, whereas low-extraversion individuals tend to be more reserved (McCrae and Costa 2003). Extraversion is often associated with intense interpersonal interactions, and it is therefore considered an asset in functions with a central social interaction component (Benoliel and Somech 2014). For example, extraverts report having higher resources to engage in intense social interactions (Costa and McCrae 2011). High-agreeableness individuals tend to be cooperative, obedient, empathetic, selfless, and trusting, whereas low-agreeableness individuals tend to be selfish, competitive, and distrusting (McCrae and Costa 2003). Agreeableness is often

associated with high performance in shared tasks in an intimate and harmonious social context (Benoliel and Somech 2014). High-conscientiousness individuals tend to be dependable, responsible, diligent, determined, and focused on achievement, whereas low-conscientiousness individuals tend to be negligent, unreliable, and undisciplined (Barrick and Mount 1991). Conscientious individuals work well in autonomous settings and in teams (Benoliel and Somech 2014). Conscientious individuals set high performance goals and invest their personal resources in work activities (Zellars, Perrewé, Hochwarter and Anderson 2006). High-neuroticism individuals tend to be anxious, miserable, and insecure, whereas low-neuroticism individuals tend to be tranquil, relaxed, and robust (McCrae and Costa 2003). Workload or task complexity that is associated with a highly demanding job environment lowers the performance of neurotic individuals, who also experience more stress in social interactions at work (Benoliel and Somech 2014). Individuals with high openness to experience tend to be curious, reflective, imaginative, and unusual, whereas those with low openness to experience tend to be uninquiring, as well as routine- oriented and normative (Costa and McCrae 2011). Workers with tendencies toward openness to experience have more favourable attitudes toward change, display more adjusting behaviours, and perform better in work situations with high uncertainty (Benoliel and Somech 2014).

Personality traits are said to influence individuals' emotional and psychological state. The literature suggests that individuals have different emotional homeostasis (Diener and Lucas 1999), and often look for experiences that are in line with their characteristic experiences (Mayer and Stevens 1994). For example, individuals high in neuroticism are known to experience more feelings of distress and anxiety (Watson 2000) because they are more concerned with avoiding threats (Elliot and Thrash 2002), whereas individuals high in extraversion experience more positive

affect (Costa and McCrae 1980; Francis and Lankshear 2018), because they are concerned with approach rewards (Elliot and Thrash 2002). Prior studies have indicated that individuals' sense of control (somewhat parallel to the self-confidence associated with extroverts) and hardiness (somewhat parallel to the robustness associated with low neuroticism) improve their wellbeing and reduce burnout (Etzion and Westman 1994; Siu and Cooper 1998). Mearns and Cain (2003) advocated the need to incorporate the study of individual differences into the research domain of teacher affect, but the effect of teachers' personality on their moods has not been examined in the field of teaching and teacher research. Hence, we hypothesize that:

Hypothesis 1: Teachers' personality traits are associated with their moods.

Hypothesis 1a: Teachers' neuroticism is associated with negative mood.

Hypothesis 1b: Teachers' extraversion is associated with positive mood.

2.3 The effect of teachers' personality on their emotion regulation

Managing one's emotions is considered to be part of the teaching profession (Hargreaves 1998). Emotion management is also known as emotion regulation, defined as "the activation of a goal to influence the emotion trajectory" (Gross 2015, p. 5), in other words, the management processes that involve changes in the type of emotions, timing, features, and expression (Gross 2002). Previous educational research indicated that teachers describe themselves as using emotion regulation strategies, and view these strategies as supporting their efforts to achieve instructional goals and manage their classrooms more effectively (Sutton et al. 2009).

The process model of emotion regulation, the most dominant emotion regulation model in the psychological literature, maps two categories of emotion regulation strategies (Gross 2002): antecedent-focused, aimed at modifying the emotion before it is completely formulated, and response-focused, aimed at changing expressive emotional behaviours that were mobilised by the emotion that emerged. Of all strategies of emotional regulation, cognitive reappraisal and suppression have raised the greatest research interest (Sheppes and Gross 2011), among others because they are frequently used in daily life (Gross and John 2003). Reappraisal, which is earlier in the emotional sequencing, seeks to promote thinking about a situation differently to change affect, and is considered less demanding of cognitive resources. By contrast, suppression, which comes later in the emotional sequencing, seeks to deny the external manifestation of internal affective states, and consumes ample cognitive resources because it creates a sense of discrepancy and requires managing the gap between experience and expression (John and Gross 2004). Cognitive reappraisal has been shown to have superior positive effects on individuals' affective state, cognitive functioning, and social interactions (Gross 2002; Gross and John 2003). Therefore, the use of antecedent-focused emotion regulation, such as reappraisal, is considered healthier than the use of response-focused emotion regulation, such as suppression (John and Gross 2004).

Although the literature suggests a connection between personality and emotion regulation, such a connection has rarely been examined. The link between personality trait and trait-consistent emotion regulation can be explained by two motives (Tamir 2009): (a) instrumental benefits, according to which, consistent with regulatory fit theory, individuals pursue goals that fit their approach- or avoidance-focused inclinations; and (b) epistemic benefits, according to which the effort of regulation

and its anticipated outcome assist individuals to validate their self-views. The

relationship between personality and emotion regulation is an instructive but

underexplored topic. A study about a population of youths at high risk explored this

relationship and reported significant correlations between personality dimensions and

emotion regulation (Hasking et al. 2010). Therefore, it is reasonable to assume that:

> *Hypothesis 2:* Teachers' personality traits are associated with their emotion
> regulation.

2.4 The effects of teachers' emotion regulation on their moods

John and Gross (2004) argued that the use of certain emotion regulation strategies,

even if it has only episodic consequences, forms a pattern that solidifies over time and

affects the individuals' broader psychological health and wellbeing. Other scholars

have also suggested that some emotional experiences and how one copes with

emotions affect one's mood. For example, Kessler (1997) argued that stressful life

events and stress management influence depression. Similarly, Abro, Klein, Manzoor,

Tabatabaei, and Treur (2015) contended that the selection of given regulation

strategies in particular situations may contribute to the development of depression or

delay it.

Few studies have attempted to explore the link between teachers' emotion

regulation and their moods. For example, Mearns and Cain (2003) studied 86 teachers

and found that their negative mood regulation expectancies predicted higher active

coping and lower burnout and distress. Similarly, Kim, Lee, and Kim's (2009) study

of elementary school teachers in Korea found that negative mood regulation expectancies correlated negatively with burnout and that they affected burnout even more than did social support. The above studies provide some indirect basis for the association between teachers' emotion regulation and their moods, but they focus mainly on negative mood regulation expectancies (Kim, Lee, and Kim 2009; Mearns and Cain 2003), not on the teachers' regulation in practice. Furthermore, the findings focus on the connection between emotion regulation and negative moods, and ignore its connection with positive moods. Other studies offer some insight into the connection between teachers' emotion regulation and their positive moods. Brackett, Palomera, Mojsa-Kaja, Reyes, and Salovey (2010) discovered that teachers' general emotion regulation ability is associated with low burnout and high job satisfaction. Lee, Pekrun, Taxer, Schutz, Vogl, and Xie (2016) used a sample of 189 teachers to explore teachers' emotion regulation, and found that the use of self-reappraisal is associated with positive emotions, whereas the use of suppression is related to experiencing negative emotions. Based on this literature it is suggested that:

Hypothesis 3a: Teachers' use of reappraisal is associated with positive mood.

Hypothesis 3b: Teachers' use of suppression is associated with negative mood.

The evidence above provides sufficient reason to infer that teachers' emotion regulation and moods are related, and that in the larger chain of events, teachers' emotion regulation may mediate the effect of teachers' personality on their moods (Figure 1). Therefore, we suggest the following hypothesis:

Hypothesis 4: Teachers' emotion regulation significantly mediates the effect
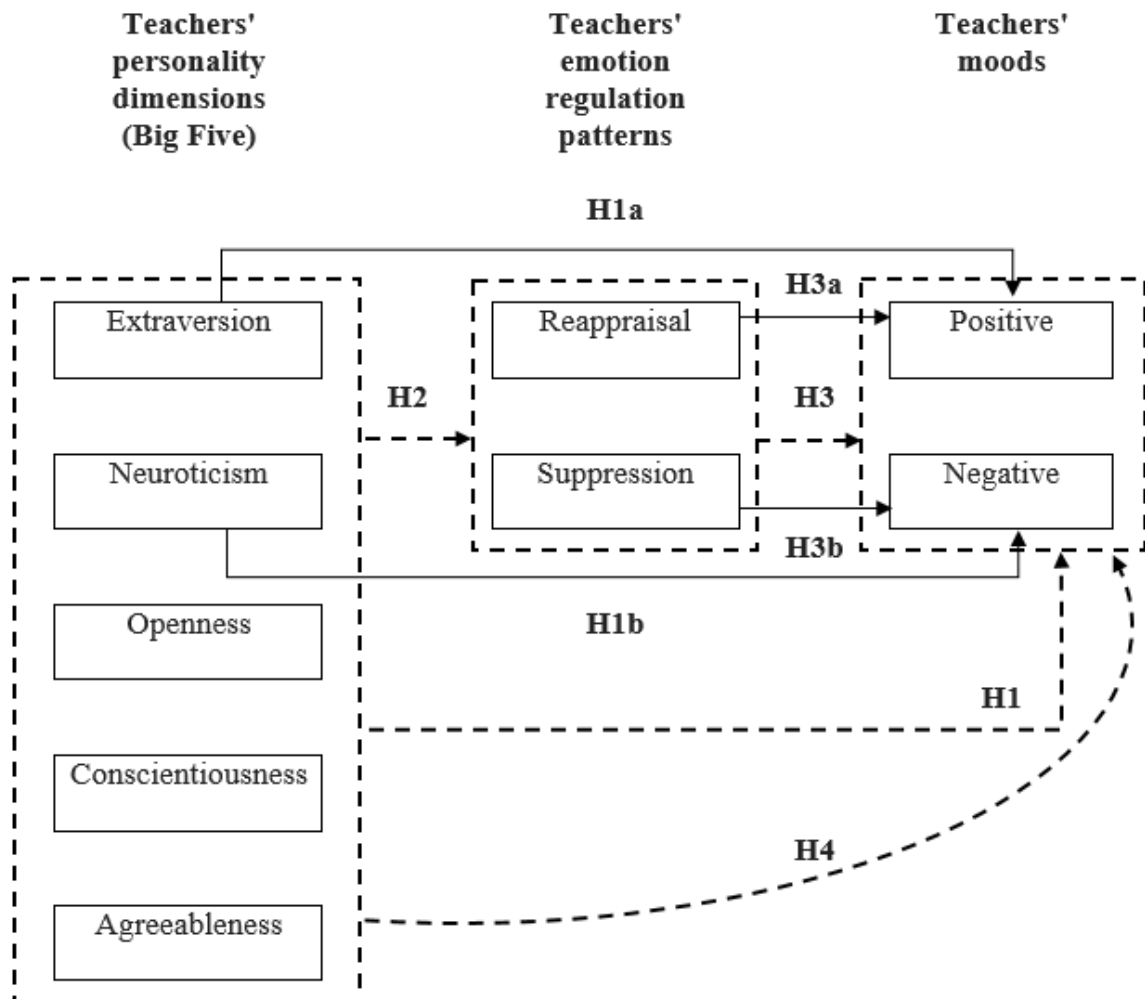
of teachers' personality dimensions on their moods.

Figure 1. Proposed mediation model. Dashed lines represent general hypotheses;

solid lines represent specific hypotheses.

2.5 Personality prototypes and teachers' emotion regulation patterns and moods

Mainstream research in psychology has explored personality mostly by means of dimensional approaches, and neglected the configuration of personality traits (Herzberg and Roth 2006). In recent decades, however, several promising typological investigations of Big Five personality traits have been performed (see overviews in Asendorpf, Caspi, and Hofstee 2002; Bohane, Maguire, and Richardson 2017). In general, three personality types emerged in research (e.g., Asendorpf and Aken 1999; Bohane, Maguire, and Richardson 2017; Robins et al. 1996): resilient, overcontrolled, and undercontrolled. Generally, resilients show below average levels of neuroticism and above average levels of other traits; overcontrollers show relatively high levels of neuroticism and low levels of extraversion; and undercontrollers show relatively low levels of conscientiousness and agreeableness (Herzberg and Roth 2006; Bohane, Maguire, and Richardson 2017). Thus, we propose that:

> *Hypothesis 5:* The classification analysis produces three personality types of
> teachers: resilient (with low neuroticism), overcontrolled (with high
> neuroticism and low extraversion), and undercontrolled (with low
> conscientiousness and agreeableness).

The idea that personality types are related to emotional patterns can be traced to the mid-20th century and the discussion of Type A (more ambitious, organised, intolerant, and aggressive) and Type B (more relaxed, less neurotic, and less ambitious) personalities. For example, Caplan and Jones (1975) discovered that Type A personality tends to bolster employees' anxiety in the workplace and increase their

heart rate, making them susceptible to health risks. Similarly, Akse, Hale, Engels, Raaijmakers, and Meeus (2007) showed that overcontrollers (somewhat paralleling Type A individuals) have higher mean levels of depression than do undercontrollers. Thus, we hypothesize that:

> *Hypothesis 6:* Teachers' personality types are associated with their emotion regulation and moods.
>
> *Hypothesis 6a:* Teachers' overcontrolled personality type is associated with their negative moods.

3. Method

3.1 Research context background

The Israeli education system was established in the mid-20th century as a centralised system. This pattern was expressed in the tight state control over the budget, administration and management, as well as over curricular and pedagogical aspects of public education (Addi-Raccah 2015). Since the 1980s, the Israeli system underwent a series of changes with the introduction of decentralization, parental choice, school-based management, national standardised testing, and marketization and accountability policies (Addi-Raccah 2015; Berkovich 2014; Feniger, Israeli, and Yehuda 2016). Although limited in scale, these changes infused the bureaucratic system with a neoliberal market logic (Sagie and Yemini 2017) that altered work relations within the public system and teachers' relations with stakeholders, promoting emotional turmoil and reducing the trust and commitment of educators (Avgar, Berkovich, and Shalev-Vigiser 2012).

3.2 *Participants and procedure*

Israel has a broad public education system, providing services to over than 80% of students, and 15 years of compulsory education, which is higher than the OECD average by 4 years (OECD 2018a). About 120,000 teachers are employed in the public system (Berkovich 2018). The system is preponderantly feminine, with 85% women teachers in primary education and 70% in secondary education (OECD 2018). The average age of Israeli teachers is lower than the OECD averages (40.9 years in primary education and 44.4 in secondary education) (OECD 2018).

A hundred and thirteen Israeli school teachers participated in the study (age M = 41.78, SD = 9.01, 87.2% female). All participants were employed in public schools (teaching experience M = 15.93, SD = 7.83, range 1-35 years). The sample consisted of 49.1% primary school and 50.9% secondary school teachers. After obtaining IRB (institutional review board) approval of the ethics committee and administrative approval for the study, potential participants were approached by an institution of higher education that offers graduate degree programs in education to teachers. Each potential participant received a letter describing the aim of the study and guaranteeing confidentiality and anonymity. Teachers who volunteered to participate in the survey were rewarded with a cafeteria voucher (approximately USD 2.5). The questionnaires were completed in Hebrew.

3.3 Measures

Big Five personality dimensions. Teachers' Big Five personality traits were measured using Rammstedt and John's (2007) 10-item scale. This measure showed superior predicative validity in a comparative study of the Big Five personality traits

(Credé, Harms, Niehorster and Gaye-Valentine 2012). The Rammstedt and John BFI-10 scale includes two items for each one of the five personality dimensions. Below are sample items. Neuroticism: 'gets nervous easily'; extraversion: 'is reserved' (R); Openness: 'has an active imagination'; agreeableness: 'is generally trusting'; and conscientiousness: 'tends to be lazy'(R). Participants were asked to indicate the extent to which the items accurately represent how they see themselves on a 7-point Likert-type scale (1 = Strongly disagree, 7 = Strongly agree). The scale was reported to be valid and reliable (Rammstedt and John 2007). Thalmayer, Saucier, and Eigenhuis (2011), who explored the ability of life outcomes to predict personality measures found that among the Big Five inventories, BFI-10 was a considerably better predictor of GPA than some longer inventories. Reliabilities of the sub-scales were found to be somewhat low, but this was expected in a sub-scale with only two items (see Rogers, Creed, and Searle 2012; Thalmayer, Saucier, and Eigenhuis 2011): conscientiousness: $\alpha = .62$, neuroticism: $\alpha = .77$, openness: $\alpha = .41$, agreeableness: $\alpha = .59$, extraversion: $\alpha = .60$. The reliabilities values are similar to those reported in prior studies (e.g., Greitemeyer 2015; Karwowski, Lebuda, Wisniewska and Gralewski 2013; Rogers, Creed, and Searle 2012; Thalmayer, Saucier, and Eigenhuis 2011). The poor reliability of the openness sub-scale is addressed in the discussion. The reliability and validity of the Hebrew translation of the Big five are well documented (Armon, Shirom and Melamed 2012; Kaspi-Baruch 2017; Roccas, Sagiv, Schwartz, and Knafo 2002).

Emotion regulation. Teachers' emotion regulation was measured using the Emotion Regulation Questionnaire (ERQ, Gross and John 2003). The ERQ measures the habitual use of two emotion regulation strategies and includes a reappraisal sub-scale (sample item: 'I control my emotions by changing the way I think about a

situation I'm in'), and a suppression sub-scale (sample item: 'I control my emotions by not expressing them'). Participants were asked to indicate to what extent each item describe them on a 7-point Likert-type scale (1 = Strongly disagree, 7 = Strongly agree). The ERQ measure was found to be valid and reliable by Gross and John (2003). Alpha values were .78 for reappraisal and .77 for suppression. The Hebrew translation of the scale has been shown to have good reliability and validity (Vishkin et al. 2016; Vishkin, Bloom, and Tamir 2019).

Mood. Teachers' mood was measured using the Global Mood Scale (GMS, Denollet 1993). The GMS incudes two sub-scales: one for negative moods (10 items, e.g., 'weary') and one for positive moods (10 items, e.g., 'cheerful'). In the present study, participants were instructed as follows: 'Please indicate to what frequency you recently felt each mood'. Participants were asked use a 5-point Likert-type scale (1 = Not at all, 5 = Very often). The measure has been reported to be valid and internally consistent (Denollet 1993). The measure is used frequently to assess psychological health and wellbeing (e.g., Lowe, Norman and Bennett 2000; Spek, Van Ham and Nyklíček 2013). Cronbach's alpha was .89 for negative and .83 for positive moods. The Hebrew translation of the scale has been shown to have good psychometric properties (Berkovich and Eyal, 2018).

Controls. Organizational literature suggests that females report higher negative mood than males do (Heinisch and Jex 1997), and that work seniority can increase one's ability to resist and buffer negative affective influences (Krannitz et al. 2015). Thus, teachers' gender (2 = female, 1 = male) and teaching experience in years were controlled.

3.4 *Analyses*

To explore the mediation model hypotheses (i.e., Hypotheses 1-4), we conducted path analysis using the AMOS structural equation modelling (SEM) software (Blunch 2012). SEM is considered a more suitable technique for testing multiple regressions simultaneously (James, Mulaik and Brett 2006), which is highly relevant to mediation model testing. Specifically, path model analysis, a structural modelling that links non-latent variables in a causal chain (Streiner 2005) was used. Because path analysis is a parsimonious modelling, without latent factors, a sample size of over 100 cases is considered adequate for convergent and proper solution in this type of analysis (see O'Rourke, Psych and Hatcher 2013). Several fit indices produced by the software are commonly used to assess the model fit to the data. Among these are chi square to df ratio (χ^2/df), goodness of fit index (GFI), root mean square error of approximation (RMSEA), comparative fit index (CFI), and the Tucker-Lewis index (TLI) (Byrne 2016). A χ^2/df value of less than 2 points to a good fit (Marsh and Hocevar 1985), CFI and TLI values above .95, and a RMSEA value below .06 are considered to be a good fit (Hu and Bentler 1999), and a GFI value that exceeds .95 is also an indicator of a good fit (Schreiber, Nora, Stage, Barlow and King 2006). The indirect effects in the path analysis were calculated using a bootstrapping approach that can estimate the indirect effects after correcting them for asymmetries and non-normality (Shrout and Bolger 2002). To explore the prototypes hypothesis (Hypothesis 5), we conducted a cluster analysis of personality traits. We employed *k*-means clustering, the most widely used classification algorithm (Hung et al. 2005), and based on the literature, we set the pre-specified number of types to three (Asendorpf, Caspi, and Hofstee 2002; Bohane, Maguire, and Richardson 2017). Next, we applied analyses of variance to investigate the influence of personality type membership on teachers' emotion regulation and moods (Hypotheses 6 and 6a).

4. Results

Table 1 shows the means, standard deviations, and range of study variables.

According to Table 1, teachers in the sample have an extremely high tendency for

conscientiousness (*M*= 5.95, *SD* = 1.02), followed by tendencies for agreeableness (*M*

= 5.05, *SD* = 1.15) and extraversion (*M* = 4.97, *SD* = 1.12). Teachers had low level of

neuroticism (*M* = 3.14, *SD* = 1.24). Between the two emotion regulation patterns,

teachers were found to favour reappraisal (*M* = 5.16, *SD* = .91) more than suppression

(*M* = 3.24, *SD* = 1.31). Teachers also reported that they experienced positive moods

more frequently (*M* = 3.97, *SD* = .55) than negative moods (*M* = 2.47, *SD* = .76).

Table 1. Means, standard deviations, and range of study variables.

	M	*SD*	Possible range	Observed range
Agreeableness	5.05	1.15	1-7	2-7
Conscientiousness	5.95	1.02	1-7	3-7
Extraversion	4.97	1.12	1-7	2-7
Neuroticism	3.14	1.24	1-7	1-6.5
Openness	4.62	1.18	1-7	1.5-7
Reappraisal	5.16	.91	1-7	1.5-6.5
Suppression	3.24	1.31	1-7	1-6.25
Positive mood	3.97	.55	1-5	2.4-5
Negative mood	2.47	.76	1-5	1.2-4.7
Gender (1 = male, 2 = female)	1.87	.33	--	--
Teaching seniority (years)	15.93	15.93	--	1-35

Table 2 shows the correlations between the study variables, which were weak to moderate, suggesting relative distinctiveness among the constructs measured.[1]

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[1] The strength of the correlations between teachers' personality traits and moods in our sample resembled those previously reported in Mediterranean populations between teachers' personality traits and affective outcomes (i.e., burnout, satisfaction, strain). For example, Kokkinos's (2007) study regarding teachers in Cyprus reported significant correlations ranging in absolute value between .16 to .50 (*M*absolute value= 28), and Benoliel and Somech (2010), in a study of Israeli teachers, reported significant correlations, ranging in absolute value between .17 to .51 (*M*absolute value= 30.3).

Table 2. Correlations matrix.

	1	2	3	4	5	6	7	8	9	10	11
1. Agreeableness	1										
2. Conscientiousness	.163	1									
3. Extraversion	.266**	.242*	1								
4. Neuroticism	-.413**	-.209*	-.044	1							
5. Openness	.329**	.334**	.219*	-.302**	1						
6. Reappraisal	.125	.201*	-.018	-.235*	.035	1					
7. Suppression	-.090	-.322**	-.435**	-.134	-.117	.237*	1				
8. Positive mood	.272**	.196*	.329**	-.389**	.433**	.252*	-.055	1			
9. Negative mood	-.349**	-.290**	-.326**	.369**	-.345**	-.024	.244*	-.439**	1		
10. Gender (1 = male, 2 = female)	.037	.285**	.158	.006	-.033	-.008	-.294**	-.028	.057	1	
11. Teaching seniority (years)	-.126	.188	-.112	-.195*	.122	.130	-.040	.068	-.002	-.013	1

The initial model accounted for all possible paths between the five teachers'

personality dimensions (independent variables) on one hand, and the two teachers'

emotion regulation patterns (mediators) and two types of moods (dependent variables)

on the other, as well as for all possible paths between the two mediators and the two

outcomes. The model showed poor fit to the data (χ^2/df = 3.21, GFI = .94, CFI = .86,

TLI = .46, RMSEA = .14). Following Hox and Bechger's (1998) recommendation to

switch to model specification by deleting non-significant paths and incorporating

modification suggestions by the software to correlate errors, the authors made changes

in the initial model. The second model showed excellent fit to the data (χ^2/df = 1.22,

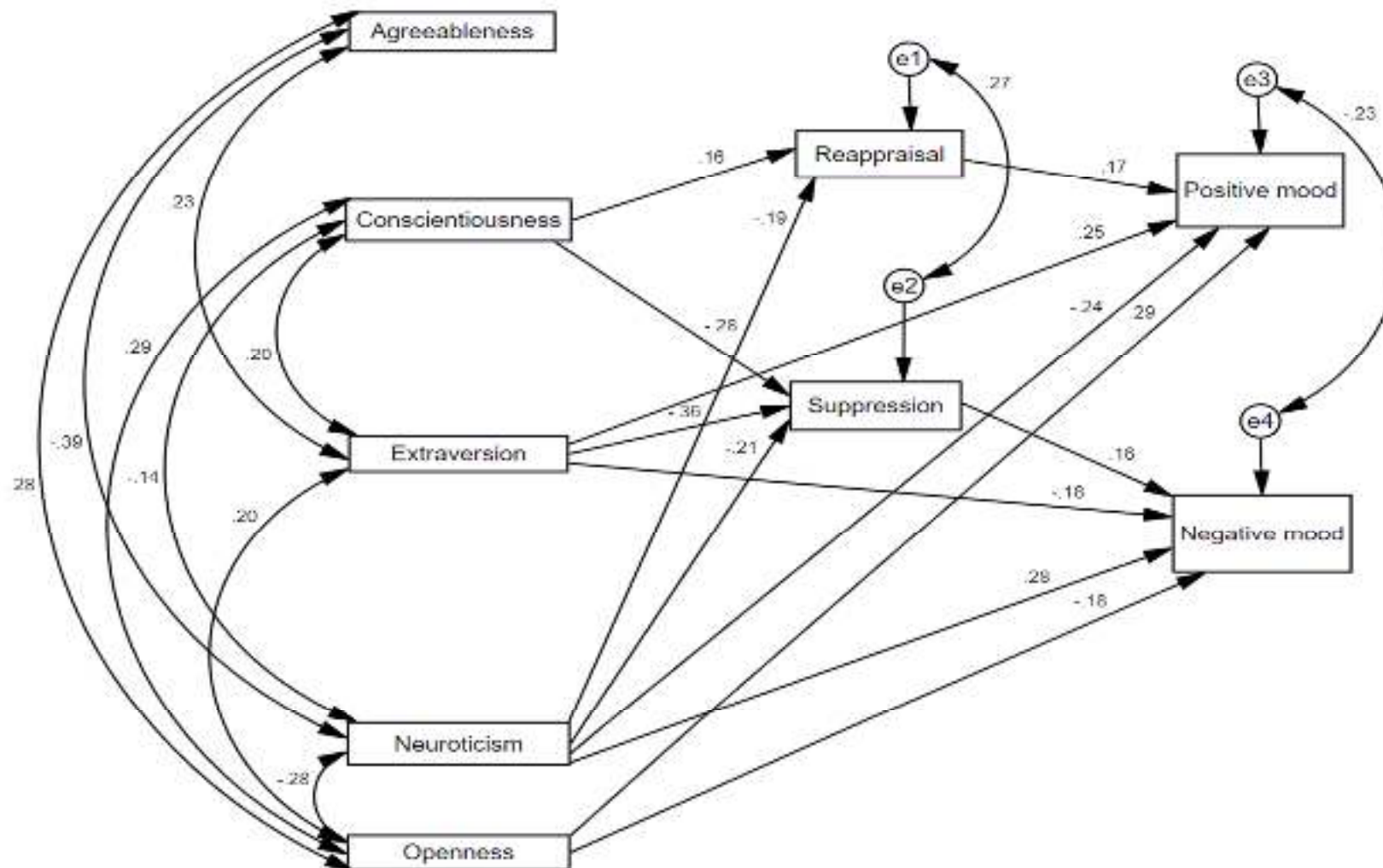GFI = .96, CFI = .97, TLI = .95, RMSEA = .04) (Figure 2).

Figure 2. The final mediation model. Standardised parameter estimates are shown. All estimates shown are significant. Control variables were omitted to ease presentation.

First, as shown in Figure 2, several significant paths emerged between teachers' personality and their emotion regulation patterns: reappraisal was positively predicted by conscientiousness ($\beta = .16$, $p < .05$), and negatively predicted by neuroticism ($\beta = -.19$, $p < .05$). Three personality traits, conscientiousness ($\beta = -.28$, p < .01), extraversion ($\beta = -.36$, $p < .05$), and neuroticism ($\beta = -.21$, $p < .05$), emerged as negative predicators of suppression. There were no significant associations between teachers' agreeableness and openness, and the two emotion regulation mediators. Thus, in general, Hypothesis 2 was supported. Second, as shown in the final model, reappraisal positively and significantly predicated teachers' positive mood ($\beta = .17$, $p < .05$), and suppression positively and significantly predicated teachers' negative mood ($\beta = .16$, $p < .05$). Therefore, Hypotheses 3a and 3b were supported. Third, according to the model shown in Figure 2, three teachers' personality dimensions had a direct effect on teachers' moods: extroversion positively predicted positive mood and negatively predicted negative mood ($\beta = .25$, $p < .01$ and $\beta = -.18$, $p < .05$, respectively), whereas the reverse effects emerged in the associations with teachers' neuroticism and moods ($\beta = -.24$, $p < .01$ and $\beta = .28$, $p < .01$, respectively). Teachers' openness significantly and positively predicted positive mood ($\beta = .29$, $p < .05$), and significantly and negatively predicted negative mood ($\beta = -.18$, $p < .05$), despite showing no relations with the two mediators. Hence, Hypotheses 1, 1a and 1b were supported. Mediation of indirect effects was calculated using the bootstrapping procedure of 1,000 re-samples. The bootstrapping results indicated an indirect effect of -.13 for the suppression mediator and of -.03 for the reappraisal mediator. Thus, suppression appears to fully mediate the effect of conscientiousness on teachers' negative mood and to partially mediate that effects of extraversion and neuroticism on teachers' negative mood. Reappraisal fully mediates the effect of conscientiousness on

teachers' positive mood. The model's total explained variance of teachers' positive

mood was .33 and of teachers' negative mood, .23, lending support to the mediating

hypothesis (i.e., Hypothesis 4).

To explore Hypothesis 5, we conducted a *k*-mean analysis. The results are

presented in Table 3, which shows the descriptive statistics for each personality traits

by type.

Table 3. Means and standard deviations of personality traits for each type.

Personality traits	Undercontroller		Resilient		Overcontroller	
	M	*SD*	*M*	*SD*	*M*	*SD*
Agreeableness	4.46	0.93	5.74	0.88	4.32	1.06
Conscientiousness	4.85	1.04	6.41	0.68	6.07	0.84
Extraversion	3.75	0.83	5.36	0.97	5.32	0.83
Neuroticism	3.21	1.03	2.49	0.97	4.30	1.03
Openness	4.06	0.84	5.35	1.00	3.78	0.93

The personality types identified in the *k*-mean analysis appear to match the

types identified by previous studies in the personality literature. Therefore, we also

termed them undercontroller, resilient, and overcontroller. Figure 3 shows the three

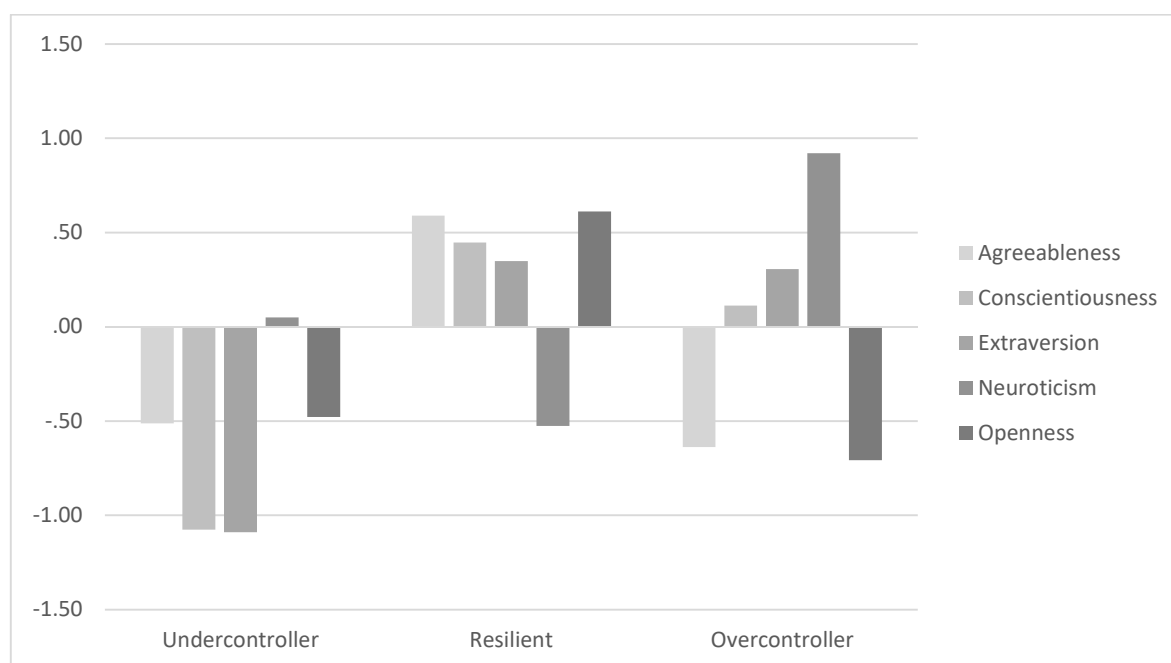types using standardised scores for easy interpretation.

Figure 3. Characteristics of the types. Standardised scores are shown.

As seen in Figure 3, the most widespread personality type was characterised by relatively low neuroticism and high levels of other traits (resilient: 48.7% of the sample). The two less frequent types of personality in the sample were the undercontrollers (27.4%) and overcontrollers (23.9%). Undercontrollers were characterised by relatively low levels of most personality traits, and overcontrollers were characterised by relatively high level of neuroticism and low levels of agreeableness and openness. Thus, Hypothesis 5 was supported. After classifying teachers into three personality types, it was possible to explore the associations of these personality types with the teachers' emotion regulation and moods (i.e., Hypothesis 6) using one-way ANOVAs.

The one-way ANOVAs indicated significant differences between teachers' personality types with regard to their reappraisal ($F(2,113)=3.13$, $p<.05$) and suppression tendencies ($F(2,113)=7.09$, $p<.01$). The ANOVAs also indicated significant differences between the teachers' personality types with regard to their

positive ($F(2,113)=9.02$, $p<.001$) and negative moods ($F(2,113)=8.20$, $p<.01$). Means

and *post hoc* comparisons are described in Table 4. The analyses revealed that

personality types are associated with teachers' emotion regulation and moods.

Resilient teachers emerged as using relatively more reappraisal and experiencing

more positive moods and less negative moods than did other personality types.

Undercontroller teachers emerged as using more suppression and experiencing more

negative moods than do resilient teachers, and overcontroller teachers emerged as

experiencing more negative moods than do resilient teachers. Therefore, Hypotheses 6

and 6a were supported.

Table 4. Means associated with teachers' personality types.

Type	Reappraisal	Suppression	Positive moods	Negative moods
1. Undercontroller	4.89	4.04	3.79	2.78
2. Resilient	5.39	2.95	4.18	2.16
3. Overcontroller	5.01	3.07	3.73	2.75
Post hoc comparisons	2>1	1>2,3	2>1,3	1,3>2

Post hoc comparisons indicate which type of means differ significantly at *p*<.05.

5. Discussion

The present study sought to explore the connection between teachers' Big Five

personality traits and their emotion regulation patterns and moods. The study was

conducted in the Israeli public education system at a time of transition from bureaucratic to neo-liberal governance (Berkovich 2014). The educational literature suggests that in periods of transition to neo-liberal governance, emotional turmoil surfaces among educators in schools (Blackmore 1996). As the new social fabric between stakeholders becomes less bureaucratic, interactions become more central in educators' work (Bush 2014). Therefore, our findings have particular relevance to educational contexts undergoing similar changes. The results of the study point to several topics deserving of further discussion.

First, the findings suggest that teachers' personality dimensions affect their emotion regulation. Specifically, higher conscientiousness and lower neuroticism predicted greater use of reappraisal, whereas lower conscientiousness, and lower extroversion and neuroticism predicted greater use of suppression. Several instructive conclusions follow from these results. Conscientiousness emerged as distinct trait, differentiating between teachers' use of emotion regulation strategies. Teachers with high conscientiousness tended to use more reappraisal, which has been shown to be more adaptive and effective in producing the desired cognitive, social, and wellbeing outcomes (Gross 2002). By contrast, teachers with low conscientiousness tended to use more suppression, which has been shown to be less adaptive and less effective than reappraisal (Gross 2002). In line of the high ranking of teachers on this trait, being the highest of all Big Five traits the significance of conscientiousness for teaching stands out. This is consistent with Benoliel and Somech's (2010) Israeli study and Kokkinos's (2007) study conducted in Cyprus, which also suggest that among all personality traits measured, level of conscientiousness was highest in the samples of public school teachers. This indicates the centrality of the conscientiousness trait in teachers, specifically in Mediterranean populations. Because

Mediterranean populations emphasise family and kinship structures (Micheli 2000),

children's development is likely to have special social value. The finding concerning

the importance of conscientiousness for teachers' self-emotion management is

consistent with prior works suggesting that, contrary to common views in

organisational literature whereby employees regulate their emotion under external

coercion (i.e., emotional labour), teachers perceive affective elements to be linked

with their role as discretionary and voluntary agents (Oplatka 2007). The case of

teaching is different from those documented in other occupations. For example, a

previous study conducted among US medical students indicated that only the traits of

agreeableness, extroversion, and neuroticism explained their depression and positive

wellbeing, and that conscientiousness and openness were not significantly related to

either mood (Bughi et al. 2014). At the same time, teachers' neuroticism emerged as a

universal factor undermining both types of emotion regulation. Being an anxious and

insecure teacher (McCrae and Costa 2003) not only harms one's social and

organisational functioning (Benoliel and Somech 2014), but even more so one's basic,

intrinsic functioning on which one's self-control is based.

Second, the findings suggest that teachers' emotion regulation affects their

moods. In particular, greater use of reappraisal by teachers predicted positive mood,

whereas greater use of suppression predicted negative mood. These results expand

what is known in educational research as teachers' emotion regulation. Previous works

have focused mainly on teachers' negative mood regulation expectancies (Kim, Lee,

and Kim 2009; Mearns and Cain 2003); in contrast, the present study demonstrated

that teachers' emotional state is affected not only by their beliefs about the effect of

emotion regulation , but also by their actual emotion regulation patterns. The study

also addressed positive emotion regulation and its outcome. The above results expand

the knowledge in the psychological literature on the two of the most explored emotion

regulation strategies (Sheppes and Gross 2011), which are often assessed in the

context of episodic use, ignoring the possibility of their use over time and the

formation of patterns (John and Gross 2004). In general, the predictions derived from

the present findings are consistent with research on emotional labour in organisations,

which indicates that workers' effort to change their internal feelings fosters positive

affectivity, and that emotional dissonance between experience and expression leads to

negative affectivity (Brotheridge and Grandey 2002; Rafaeli and Sutton 1987).

Third, the research findings showed both the indirect and direct effects of

teachers' personality dimensions on teachers' moods. Several significant mediation

effects emerged in the analysis: (a) teachers' use of reappraisal fully mediated the

effect of teachers' conscientiousness on positive mood; (b) teachers' use of

suppression fully mediated the effect of teachers' conscientiousness on negative

mood; and (c) teachers' use of suppression partially mediated the effects of teachers'

extroversion and neuroticism on negative mood. The last mediation effect noted

above, involving extroversion and neuroticism, can be better explained when

accounting for the two direct effects of personality traits on negative mood. The direct

effect of teachers' extroversion (β = -.19) and its indirect effect by way of suppression

(τ = -.056) lower teachers' negative mood, whereas the direct effect of teachers'

neuroticism elevates teachers' negative mood (β = .29), and its indirect effect by way

of suppression lowers teachers' negative mood (τ = -.032). This complex configuration

suggests that although individuals characterised by high neuroticism have a negativity

bias that causes them to experience negative events more frequently and more

negatively than do other individuals (Magnus, Diener, Fujita and Pavot 1993; McCrae

and Costa 2003), their neurotic tendency denies them the option of less adaptive,

successful suppression at work, and supports their authentic emotional expression of feelings of worry and anxiety. At the same time, teachers characterised by high extroversion emerged as being best in maintaining their affective hemostasis, which promotes positive moods and hinders negative ones. These findings support prior psychological works indicating the centrality of extroverted and neurotic personality traits in affective processes (Francis and Lankshear 2018; Rustling and Larsen 1997), an issue that is infrequently discussed in education, with few works addressing the associations between teachers' personality and their mood. The study also indicated that teachers' openness predicted both types of mood, but the reliability of the openness sub-scale was poor, and caution is advised in interpretation. Future research would benefit from further exploration of these links of teachers' openness with mood, using a different personality measure.

Fourth, to the best of our knowledge this is the only study that has used typological investigation of teachers' personality traits, and as such, it expands the educational literature on teaching. Our findings support in general the three personality types and their features that emerged in psychological research (e.g., Asendorpf and Aken 1999; Bohane, Maguire, and Richardson 2017; Robins et al. 1996). Resilients replicated fully the relatively low levels of neuroticism and above-average levels of other traits. Nevertheless, some distinction in trait composition emerged that was not evident in previous reports (Herzberg and Roth, 2006; Bohane, Maguire, and Richardson 2017). Overcontrollers showed relatively high levels of neuroticism, but not a low level of extraversion, and undercontrollers showed not only relatively low levels of conscientiousness and agreeableness, but also of extroversion and openness. These differences might be related to the nature of teaching. For example, frontal teaching is likely to attract more extroverted individuals to the

profession. The study also suggested more nuanced insights than classic dimensional approaches did to the exploration of the link between personality and affect. For example, although being high on neuroticism is likely to be associated with negative moods, it does not necessarily involve less adaptive regulation. This situation emerged in individuals with classic Type A personality, such as the overcontroller type.

5.1 Practical implications

The findings of the present study have several implications for the practice of teaching and for teacher development. First, the focus on personality suggests an application for diagnosis and intervention. Personality traits are viewed as relatively stable, and therefore can be used to identify segments of the population that are at risk. This population can be the target of prevention and early intervention initiatives. Specifically, highly neurotic teachers seem to be in the greatest need of support. For example, Chen and Chen (2013) recommended listening to neurotic employees' difficulties and responding to their needs, to provide them with a sense of hope, and to offer a vision that they could embrace with enthusiasm. Although neurotic employees might be more difficult to persuade to make changes (Chen and Chen 2013), they can be a valuable resource in organizational learning processes because they are more likely to express doubts and raise questions that challenge and refine school work (Benoliel and Schechter 2018). New teachers are considered more susceptible to negative emotional and psychological processes and outcomes as a result of school work, which is partly associated with the high ratio of new teachers leaving the profession in the first years (Mearns and Cain 2003). Future research could attempt to

identify new teachers with personality traits such as neuroticism, which places them at risk of emotional stress.

That said, personality trait theory was developed in English-speaking individualist cultures (McCrae and Costa 1997), and it is therefore not surprising that some studies have failed to find the openness personality trait in non-Anglo cultures (Heaven, Connors, and Stones 1994; Heuchert et al. 2000). The literature also suggests that there are national profiles of personality traits. For example, South American and European countries were found to be positioned at the top of the openness ranking, and East Asian cultures at the bottom of it (Schmitt et al. 2007). It is therefore ill-advised to use personality traits as recruitment or retention criteria because it might lead to biases and discrimination against minorities and marginalised groups.

Second, when accounting for the different effects of the two emotion regulation strategies on teachers' mood, note that reappraisal better promotes teachers' affective wellbeing than does suppression. As the psychological literature suggests, a variety of ways are open to individuals for coping with stressors and affective events (Gross 2002), but over time, adults develop rigid patterns of use (John and Gross 2004). Nevertheless, scholars have suggested that adults' emotion regulation preferences can change over time owing to structural factors (e.g., work norms, life experience) (John and Gross 2004). Counseling as well as training and development programs have been suggested to enhance teachers' mood regulation (Kim, Lee, and Kim 2009). The literature also recommends mentoring as a setting that can help not only new teachers who have difficulties coping, but experienced ones as well (Flesch 2005). Unlike personality, emotion regulation patterns can change relatively more easily, with intensive support. Prior studies suggest that other actors in schools can

influence teachers' affect and often act as co-regulators that enhance their use of reappraisal (Berkovich and Eyal 2015 2017). On the face of it, undercontroller teachers could benefit more from guidance on emotion regulation because they not only experience negative moods but also apply less effective emotion regulation (e.g., suppression), whereas overcontroller teachers could benefit more from guidance on how to diffuse negative moods when experiencing them.

5.2 Limitations and future research

The present study has several limitations that should be addressed in future research. First, the short personality measure used in this study showed low reliability in some of the scales. This is not a unique feature of 2-item trait scales, and it characterises personality research in general. For example, Benoliel and Somech's (2010) study of Israeli teachers used a longer measure, containing 12 items for each trait, and still reported an alpha of .61 for agreeableness. Despite the differences in measures, our study produced a ranking of dominant personality traits similar to the one that emerged in Benoliel and Somech's study (2010) (conscientiousness=38.2 > agreeableness=32.7 > extroversion=31.8 > openness=24.8 > neuroticism=19.5). Nevertheless, replication with other personality measure is recommended. Second, the present study did not account for the historical, sociological, and political aspects of the teachers' work. In recent years, teachers in Israel have been experiencing frequent reforms, which has had a negative influence on their affect (Eyal and Berkovich 2011; Avgar, Berkovich, and Shalev-Vigiser 2012). Some teachers may be less influenced by reform pressures, therefore reforms and their pressures may serve as a valuable contextual factor in future research. The literature suggests the existence of an

interactionist model in which the work situation (e.g., the structured nature of job) moderates the effects of personality on performance in work settings (Judge and Zapata 2015). Additional research is needed on the moderating role of school conditions, professional norms, and job requirements on the connection between teachers' personality and their mood. Third, the gender distribution of the sample was skewed, with a feminine majority. This accurately reflects the Israeli system, but other education systems may have a different gender composition with a higher percentage of male teachers, where the associations revealed here cannot be replicated. For example, prior research suggests that females report higher extraversion, agreeableness, and neuroticism (Weisberg, DeYoung, and Hirsh 2011), whereas males suppress negative emotions more than females do (Gross and John 2003). Therefore, further studies are recommended. Fourth, the cross-sectional nature of the data collection limits the ability to establish causality, and theoretically alternative directions of the relations are also possible. Future works can address this issue by adopting a longitudinal design.

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