Work happiness among teachers: A day reconstruction study on the role of self-concordance[☆]

Maja Tadić [a,*], Arnold B. Bakker [b], Wido G.M. Oerlemans [b]

[a] *Department of Psychology, Institute of Social Sciences Ivo Pilar, Zagreb, Croatia*
[b] *Department of Work & Organizational Psychology, Erasmus University Rotterdam, Rotterdam, The Netherlands*

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ABSTRACT

Self-concordant work motivation arises from one's authentic choices, personal values, and interests. In the present study, we investigated whether self-concordant motivation may fluctuate from one work-related task to the next. On the basis of self-determination theory, we hypothesized that momentary self-concordance buffers the negative impact of momentary work demands on momentary happiness. We developed a modified version of the day reconstruction method to investigate self-concordance, work demands, and happiness during specific work-related tasks on a within-person and within-day level. In total, 132 teachers completed a daily diary on three consecutive work days as well as a background questionnaire. The daily diary resulted in 792 reported work activities and activity-related work demands, self-concordance, and happiness scores. Multilevel analysis showed that—for most work activities—state self-concordant motivation buffered the negative association of work demands with happiness. These findings add to the literature on motivation and well-being by showing that the levels of self-concordance and happiness experienced by employees vary significantly on a within-day level and show a predictable pattern. We discuss theoretical and practical implications of the findings to increase employees' well-being.

1. Introduction

Previous studies have shown positive associations between happiness and various indicators of workplace success. Compared with their less happy peers, happy people tend to earn more money, show superior task performance, and help their colleagues more often (Boehm & Lyubomirsky, 2008; Lyubomirsky, King, & Diener, 2005). In the context of teaching, research has shown that teachers' happiness is predictive of student happiness, and student happiness is predictive of school performance (Bakker, 2005). For example, in their longitudinal study, Duckworth, Quinn, and Seligman (2009) showed that teachers' positivity, namely, grit and life satisfaction predicted pupils' academic achievement. Sutton and Wheatley (2003) argued that the teachers' expression of positive emotions might affect pupils' motivation. Turner et al. (2002) showed that teachers' humor was more likely to be present in low avoidance and high mastery classrooms and absent in high avoidance and low mastery classrooms. In their review of over 180 papers, Jennings and Greenberg (2009) noticed the importance of teachers' socio-emotional competences and well-being in developing and maintaining supportive classroom climate and teacher–student relationships. However, the authors also emphasized that more research is needed in order to examine how teachers' motivation and well-being can potentially present the start of an upward spiral that enhances high quality teaching and, in turn, fosters high levels of students' motivation, well-being, and their academic achievement.

Unfortunately, teachers often encounter high job demands, such as substantial work overload, time pressure (Chan, 1998), pupils' misbehavior, and intense emotional interactions with pupils (Brotheridge & Grandey, 2002; Turk, Meeks, & Turk, 1982). There are also other factors outside the classroom, such as unsupportive colleagues and uncooperative parents (Lasky, 2000), which can result in feelings of anger or frustration (Bullough, Knowles, & Crow, 1991; Sutton & Wheatley, 2003).

These high work demands constitute a risk factor for teachers' well-being by contributing exhaustion, stress, cynical attitudes, and lower job satisfaction (Borg & Riding, 1991; Brackett, Palomera, Mojsa-Kaja, Reyes, & Salovey, 2010; Guglielmi & Tatrow, 1998; Hakanen, Bakker, & Schaufeli, 2006). For instance, previous research revealed that lack of reciprocity in teachers' relationships with pupils predicts burnout (Taris, Van Horn, Schaufeli, & Schreurs, 2004). Similarly, Burke, Greenglass, and Schwarzer (1996) showed that pupils' disruptive behavior had significant relations with teachers' burnout one year later, and that burnout served as a mediator between the job demands and emotional and physical health.

Nevertheless, many teachers still feel satisfied and happy while working (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Borg & Riding, 1991; Grayson & Alvarez, 2008; Hakanen et al., 2006; Jacobsson, Pousette, & Thylefors, 2001). Teachers experience positive emotions when their pupils are responsive and make progress (Hargreaves, 1998, 2000), when they manage to finish their work tasks, and when they can get support from their colleagues (Hatch, 1993; Lasky, 2000). Consequently, we need more insight into the fine-grained relations between high work demands, available resources, and work-related well-being outcomes such as happiness.

Building upon the research within the Job Demands–Resources (JD–R) model (Bakker, Demerouti, de Boer, & Schaufeli, 2003; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) and self-determination theory (SDT; Ryan & Deci, 2000), we propose that teachers' work motivation is a personal resource that facilitates coping with high work demands. Specifically, previous studies have shown that motivation can influence the way people perceive and approach various work tasks (Lazarus, 1993). Also, studies showed that motivation can influence the effort and persistence invested in the task, as well as the emotions felt during the involvement in the task (Gagné & Deci, 2005; Judge, Bono, Erez, & Locke, 2005; Sheldon & Elliot, 1999; Sheldon, Kasser, Smith, & Share, 2002). In that way, work motivation could be seen as a buffering factor that protects teachers from the unfavorable effects of high job demands and helps them maintain happiness with their work context.

Bearing in mind that teachers have different motivation and levels of happiness during different work activities on different working days (Ashkanasy & Daus, 2002; Ilies, Schwind, & Heller, 2007; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000), in this paper, we specifically focused on within-person fluctuations in teachers' motivation, happiness, and work demands. Previous research has demonstrated substantial associations between variations in state happiness and the immediate context and specifics of time use (Krueger & Schkade, 2008; Reis et al., 2000; Stone et al., 2006). For instance, previous studies showed that changing work activities contributes to changes in employees' affective states on a within-day level (Ashkanasy & Ashton-James, 2006; Ilies et al., 2007; Weiss & Cropanzano, 1996). However, previous studies did not address the extent to which variations in teachers' affective states at work are dependent on variations in their motivational states, and we need a better understanding on how momentary motivational states impact affective experiences during work activities among teachers. Therefore, the central goal of the present study was to examine the interrelations between secondary school teachers' momentary motivation, perceived demands, and momentary happiness during the execution of work activities on a within-person and a within-day level. We examined these within-person motivation–demand fluctuations and interaction effects on happiness beyond the baseline happiness during the previous day as well as beyond the baseline of trait work demands and trait self-concordance.

In doing so, we also statistically controlled for several relevant variables in order to address the possibility that additional factors other than the proposed predictors might have had impact on our outcome variable. Specifically, we controlled for age and health as relevant sociodemographic factors for happiness. Previous research indicated significant positive relation between happiness and health, and suggested age shows curvilinear relations with happiness (e.g., Pressman & Cohen, 2005; Veenhoven, 2008). Moreover, we also controlled for job resources, because they have consistently been positively related to indicators of work-related well-being such as happiness at work and work engagement (e.g., Bakker & Bal, 2010; Demerouti & Bakker, 2011; Fernet, Austin, Trépanier, & Dussault, 2012; Hakanen et al., 2006; Schaufeli & Bakker, 2004). Finally, we controlled for the fulfillment of the basic psychological needs (autonomy, relatedness and competence), because previous research has shown that basic psychological needs fulfillment supports autonomous motivation, and fosters positive psychological, developmental, and behavioral outcomes (Ryan & Deci, 2000).

Because diary methodology is highly suitable for examining the interrelations between motivation, demands, and happiness among teachers on a within-person level (Ohly, Sonnentag, Niessen, & Zapf, 2010; Sonnentag & Ilies, 2011), we employed a modified version of the Day Reconstruction Method (DRM; Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004) in this study. The DRM is a diary method in which the participants reconstruct what they did and how they felt during their daily activities in the evening of the same day. Previous research suggests episodic assessments such as DRM generally reduce retrospective biases (Dockray et al., 2010; Kahneman & Krueger, 2006; Miron-Shatz, Stone, & Kahneman, 2009; Oerlemans, Bakker, & Veenhoven, 2011; Stone et al., 2006).

Happiness reports obtained via the DRM show similar patterns compared to happiness reports obtained in real-time, such as those using the Experience Sampling Method (ESM), an assessment method that asks participants to answer questions about their momentary experiences in real time (e.g., emotions felt) at specific times (e.g., several times a day; Dockray et al., 2010; Hektner, Schmidt, & Csikszentmihalyi, 2006; Kahneman et al., 2004; Napa Scollon, Prieto, & Diener, 2009). For instance, a study by Kahneman et al. (2004) of 909 employed women documented a close congruence between the DRM and reports obtained using the ESM (Napa Scollon et al., 2009). Similarly, Dockray et al. (2010) showed that correlations between momentary happiness scores obtained with the DRM and ESM range from .70 to .90. Altogether, the DRM design enabled us to analyze the role of

motivation as a potential protective factor in the relation between high demands and happiness among teachers on the within-teacher activity level. To the best of our knowledge, this study is the first to examine the interaction between teachers' work demands and motivation during work-related activities on different workdays.

1.1. Theoretical background

1.1.1. Happiness

Happiness is typically considered to have two qualitatively distinct aspects: experienced (episodic) and overall (global, trait-level) happiness (Schwarz, Kahneman, & Xu, 2009). Overall, trait-level happiness refers to how people evaluate their lives in general – the degree to which people judge the overall quality of their lives favorably – whereas experienced happiness relates to how people experience their life moment to moment as reflected in emotions that accompany their daily activities (Veenhoven, 2009). Recent research demonstrates that measures of overall happiness often reflect various retrospective biases. However, most studies of happiness have relied on such global reports (e.g., Kahneman et al., 2004). In contrast, episodic measures of happiness (e.g., ESM or DRM) successfully tackle these biases because they are less influenced by cognitive dispositions and processes (Kahneman & Krueger, 2006; Reis et al., 2000; Robinson & Clore, 2002; Stone et al., 2006). Happiness at work has proven to be a crucial indicator of work-related well-being. For example, overall happiness at work has shown positive associations with job satisfaction and performance (Crede, Chernyshenko, Stark, Dalal, & Bashshur, 2007; Fisher, 2010; Judge et al., 2005) and negative associations with burnout (Iverson, Olekalns, & Erwin, 1998) and turnover intentions (Van Katwyk, Fox, Spector, & Kelloway, 2000).

Moreover, experienced (episodic) happiness, as a short term positive emotion, has demonstrated positive associations with longer-term well-being, both at work and in other life domains (Ashkanasy & Ashton-James, 2006; Boehm & Lyubomirsky, 2008; Fredrickson, Mancuso, Branigan, & Tugade, 2000; Lyubomirsky et al., 2005). In order to gain more understanding of the mechanisms related to within-person fluctuations of happiness, especially within the teachers' workplace context, in this study we focused on episodic happiness, as a transient (within-person) pleasant emotional state that teachers may experience in different degrees during work activities (Bakker & Oerlemans, 2011; Fisher, 2010).

1.1.1.1. Self-concordant motivation for work. The motivational literature mentions two different, but related types of self-concordant motivation: identified and integrated motivation. Both identified and integrated types of motivation are self-concordant because they reflect an experience of personal choice rather than external pressure (Roth, Assor, Kanat-Maymon, & Kaplan, 2007; Ryan, Rigby, & King, 1993; Sheldon et al., 2002).

On the one hand, integrated motivation reflects a fully autonomous motivation because it reflects engagement in work for its own sake—that is, out of curiosity and interest (Ryan & Deci, 2000; Vansteenkiste, Sierens, Soenens, Luyckx, & Lens, 2009). For example, when teachers teach with an integrated motivation, they teach with genuine interest and are aware that teaching is their own autonomous choice. On the other hand, identified motivation for a work activity stems from identifying with the importance of that activity for the person (Gagné & Deci, 2005). For example, when teachers organize meetings with parents with an identified motivation, they are not spontaneously drawn to those meetings, but they value them and acknowledge their importance (Roth et al., 2007; Ryan et al., 1993). Research evidence from between-person studies revealed positive associations between self-concordance and concurrent subjective well-being (Sheldon & Kasser, 1995; Sheldon et al., 2002) as well as increases in subjective well-being over time (Sheldon & Elliot, 1999; Sheldon & Houser-Marko, 2001). Yet, teachers' motivational state may vary not only between persons but also within persons (that is, from one work activity to the next).

According to SDT, changes in motivation from either moment-to-moment (within the day) or day-to-day (between days) should impact momentary and daily well-being, respectively. Indeed, research has shown that differences between employees in self-concordant work motivation strongly relate to well-being in the workplace (for an overview, see Gagné & Deci, 2005; Deci & Ryan, 2008). However, only a limited number of studies within the context of schools examined changes in self-concordant motivation and its impact on well being on within-person levels. One exception is the study performed by Reis et al. (2000) that followed a group of 67 students over the course of 14 days. Results showed that higher self-concordance related to higher well-being on both between-person and within-person level. However, the study by Reis et al. (2000) focused on students and did not address the combined influence of work demands and self-concordance of work activities among school teachers.

1.1.1.2. Demanding work activities and self-concordant work motivation. The Job Demands–Resources (JD–R) model (Bakker & Demerouti, 2007; Demerouti et al., 2001) posits two essential processes for work-related well-being: job demands and job resources. First, job demands encompass physical, psychological, social, and organizational aspects of the job that require sustained physical effort, psychological effort (cognitive and emotional), or both types of effort (Demerouti & Bakker, 2011; Demerouti et al., 2001; Fernet et al., 2012). As such, high job demands are at the basis of an energy depletion process and can lead to the exhaustion of employees' energetic resources, burnout, health impairment and lower well-being (Bakker, Demerouti, & Schaufeli, 2003; Demerouti & Bakker, 2011; Hakanen et al., 2006).

Second, the JD–R model distinguishes a motivational process related to job resources. Job resources refer to both organizational and personal aspects of the job that stimulate work engagement, learning and development, realization of work goals, and personal growth (Demerouti & Bakker, 2011; Fernet et al., 2012; Hakanen et al., 2006). In addition to the main effects of demands and resources, the JD–R model also proposes an interaction effect. Job resources can buffer the impact of high job demands because they provide support for realization of highly demanding work activities (Demerouti & Bakker, 2011).

According to Lazarus model of stress, the appraisal of potential threats (i.e., job demands) is a crucial predictor of stress outcomes (Lazarus, 2000). Job resources might be related to this appraisal process, namely, the presence of job resources might reduce the perception of how threatening high demands are because they provide support for dealing with them. In the current study, teacher motivation is studied as a personal resource that can modify the association between job demands and teacher well-being.

Indeed, previous research revealed that organizational job resources reduce the negative effects of job demands on job strain (Bakker, Demerouti, & Euwema, 2005), work engagement (Bakker et al., 2007; Hakanen, Bakker, & Demerouti, 2005), and work enjoyment (Bakker, Van Veldhoven, & Xanthopoulou, 2010). Also, in a diary study on teachers' well-being, Simbula (2010) showed that day-level work engagement mediated the impact of day-level coworkers' support on teachers' day-level job satisfaction and mental health.

However, although the number of diary studies has increased in recent years, there is still limited research on intra-individual variability in teachers' daily work experiences, and only a few studies have examined the role of personal resources in the relation between job demands and work engagement on a within-person level (e.g., Avey, Luthans, Smith, & Palmer, 2010; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). Moreover, to the best of our knowledge, no previous study examined the buffering effect of self-concordant motivation (a fluctuating personal resource) on the relation between job demands and affective experiences of teachers on a within-day, activity level.

1.1.2. Overview of the research aims

The primary goal of the current study was to examine whether self-concordant motivation for work activities enhances teachers' happiness during those activities. We based the first hypothesis on previous studies that revealed positive associations between well-being indicators and self-concordant motivation (e.g., Howell, Chenot, Hill, & Howell, 2011; Reis et al., 2000; Sheldon & Houser-Marko, 2001; Sheldon et al., 2002).

Hypothesis 1. Teachers' experience of momentary self-concordance during specific work-related tasks is positively associated with momentary happiness felt during these tasks. In other words, the more self-concordant a specific work activity is perceived to be, the happier teachers feel while engaging in that activity as measured on a within-day, activity level. Moreover, building upon the JD–R model, we also wanted to investigate the association between perceived demands and happiness during work activities on a within-person level. Bearing in mind previous findings (e.g., Hakanen et al., 2006), we expected that perceived demands have negative associations with happiness on a within-person level. Thus, we formulated the second hypothesis.

Hypothesis 2. The perceived demand level of specific work activities is negatively related to momentary happiness felt during those activities as measured on a within-day, activity level.

Finally, based on the SDT and the JD–R model, we aimed to check whether teachers' self-concordant motivation for specific work-related tasks affects that relation between highly demanding work-related tasks and happiness. We expected that the interaction between teachers' perceptions of the demand level of specific work activities and their motivation for those work activities can predict intra-individual changes in happiness felt while engaging in work activities. Accordingly, we formulated the third and final hypotheses.

Hypothesis 3. Self-concordant motivation for work activities buffers the negative relation between the perceived demand level of specific work activities and state of happiness felt during those activities within a teachers' workday. Teachers who perceive highly demanding work activities (instruction, work-related trainings, meetings, and exams) as highly self-concordant remain happy while engaging in them, whereas those who perceive work activities as low self-concordant will become less happy while engaging in them.

2. Method

2.1. Participants

Among the teachers who received an invitation to join the study, 245 of them filled out the profile page and completed the diary at least once (for a 32% response rate). Among those 245 teachers, 174 filled it out at least two times, 132 filled it out at least three times, 108 filled it out at least four times, and 76 filled it out five times or more. Because this diary study examines within-person processes, we analyzed the data of participants who filled out the diary at least three times ($N = 132$). We justify this approach by providing a dropout analysis.

The results of this dropout analysis, in which we compared the teachers who filled out the diary once with those who filled it out more often, revealed that there are no significant differences regarding background variables, namely age, $M = 45.16$ ($SD = 11.58$) vs. $M = 45.64$ ($SD = 11.32$), $t(1150) = -0.62$, *ns*; health, $M = 7.08$ ($SD = 2.20$) vs. $M = 7.11$ ($SD = 2.16$), $t(1095) = -.20$, *ns*; and gender, a chi-square test of independence indicated that the number of days teachers filled out the diary was not associated with their gender, $\chi^2(1) = 0.01$, *ns*. The teachers who filled out the diary once, and those who filled it out more often also did not differ regarding mean scores over the days on self-concordance, $M = 6.89$ ($SD = 2.59$) vs. $M = 6.86$

($SD = 2.25$), $t(1294) = .19$, *ns*; happiness, $M = 6.58$ ($SD = 2.12$) vs. $M = 6.70$ ($SD = 1.97$), $t(717) = -.98$, *ns*; and demands, $M = 5.52$ ($SD = 2.93$) vs. $M = 5.79$ ($SD = 2.72$), $t(710) = -1.58$, *ns*.

The final sample consisted of 47 men and 85 women. This sample size is an adequate for a diary study (e.g., Dimotakis, Scott, & Koopman, 2011; Ilies et al., 2007; Ohly et al., 2010; Sonnentag & Ilies, 2011) and provides sufficient statistical power to test the hypotheses (cf. Snijders & Bosker, 1999). Participants' age ranged from 22 to 69 years ($M = 45.27$; $SD = 11.57$). Participants' teaching job tenure was 17 years on average ($SD = 11.97$), and they worked 32 h per week on average. There was substantial variation in the hours teachers worked per week ($SD = 12.55$), given that many teachers in the Netherlands work part-time. According to the Centraal Bureau voor de Statistiek (CBS Statistics Netherlands, 2012), Netherlands has the most part-time workers in Europe. Teachers were employed at higher general education secondary schools (58.1%), vocational secondary schools (12.5%), gymnasium (11.0%), or practical secondary schools (5.9%). A small percentage of teachers did not answer the question on the type of school in which they were employed (12.5%).

2.2. Measures

2.2.1. Day-level measures

Day-level measures refer to the measures of happiness, demands, self-concordant motivation related to daily work-related activities that were included in the included in the daily diary questionnaire.

2.2.1.1. Work activities. In the current study, we refer to work-related activities as intentional behavioral practices in which teachers put effort in order to fulfill their work obligations and tasks. The teachers were asked to write down two work-related activities in which they spent most of their time during the preceding day. Bearing in mind the main research goals of the current study, we did not ask teachers to report every work-related activity they engaged in during the preceding day. Rather, we aimed to disentangle some of the within-person processes between motivation, job demands, and happiness among teachers. In order to gain a better understanding of these matters, we wanted to capture the subjective experiences of teachers' most prominent work activities in their daily life. Thus, we asked the teachers to reflect on the two work-related activities they have spent the most time in engaging today. Moreover, we asked them to do this 5 work days in a row (and not just 1 work day), which added to the data richness.

Teachers were able to choose the two activities from a drop-down list of various teacher-specific daily work activities. Teachers also had the option to add other types of activities on their own, all of which were later categorized in the one of the following: administrative activities; commuting; teaching; preparing for the lessons; preparing and correcting tests and exams; meetings with parents, colleagues or supervisors; counseling pupils; attending work-related training or education; and excursions. Only 8% of all the listed activities were added by teachers outside the 11 work activities in the drop-down list, which shows that we adequately captured secondary school teachers' everyday work activities. Although commuting is not a directly work-related activity, we listed it as an option in the drop-down list because it is indirectly related to work. As can be seen in Table 1, many Dutch teachers commute ($M = 180.26$ min per day, $SD = 133.22$ min per day), which implies that commuting is an integral part of work life for many of them.

In this study, we focused on four specific work activities that teachers reported spending most time on: teaching ($M = 201.80$ min per day, $SD = 106.70$ min per day; $N = 501$; which is about 42% of teachers' typical school day work time); attending a work-related training and education ($M = 185.82$ min per day, $SD = 105.62$ min per day, $N = 51$; which is about 38% of teachers' typical school day work time); meetings ($M = 153.67$ min per day, $SD = 130.60$ min per day, $N = 160$; which is about 32% of teachers' typical school day work time); and, finally, tests and exams ($M = 143.57$ min per day, $SD = 81.20$ min per day, $N = 181$, which is about 30% of teachers' typical school day work time). Because teachers' typical working days often encompass these four activities, we argue that by referring to these activities, we were able to capture how happy teachers were during the large majority of the time in their daily work life.

Table 1
Self-concordance, demand level, and happiness means and standard deviations for teachers' daily work activities.

Activity type	N	Teachers' experiences of daily work activities			
		Self-concordance	Demand	Happiness	Duration (in minutes)
		M (SD)	M (SD)	M (SD)	M (SD)
Administrative	146	5.81 (2.30)	5.32 (2.69)	5.59 (2.34)	198.85 (103.72)
Commuting	57	4.37 (3.40)	3.61 (3.00)	6.44 (1.75)	180.26 (133.22)
Teaching	485	7.43 (1.78)	5.93 (2.75)	7.21 (1.67)	201.80 (106.70)
Preparing lessons	145	7.32 (1.80)	5.51 (2.66)	6.63 (1.73)	149.59 (89.41)
Tests/exams	174	5.98 (2.54)	5.56 (2.09)	6.25 (2.64)	143.57 (81.20)
Meetings	152	6.77 (2.62)	6.12 (2.96)	6.64 (2.08)	153.21 (103.50)
Counseling pupils	69	8.46 (1.47)	5.15 (2.98)	7.94 (1.41)	134.79 (91.85)
Work trainings	51	7.00 (2.62)	7.16 (2.12)	6.86 (1.93)	185.82 (105.62)
Excursions	18	7.47 (2.88)	4.06 (2.99)	7.61 (1.72)	141.67 (63.48)

Note. All scores range from 1 to 10.

2.2.1.2. Happiness. Teachers rated how happy they felt during both work-related activities they reported each day, using a one-item scale ranging from 0 (*not happy at all*) to 10 (*very happy*). A single-item measure of happiness has demonstrated evidence of validity, with good temporal stability and highly significant positive correlations between the single item and both the Oxford Happiness Inventory (Argyle, Martin, & Lu, 1995; Hills & Argyle, 2002) and Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Pavot & Diener, 1993). Moreover, the single item has been shown to be highly and positively correlated with optimism, hope, self-esteem, positive affect, extraversion, and self-ratings of both physical and mental health, which demonstrated its convergent validity. In addition, single-item measures of happiness have shown divergent validity with significant and negative correlations with anxiety, pessimism, negative affect, and insomnia (Abdel-Khalek, 2006). Moreover, single-item happiness ratings are commonly used in happiness research (e.g., Lyubomirsky et al., 2005).

2.2.1.3. Self-concordant motivation. Because both identified and integrated motivation types represent self-concordant motivation, we measured self-concordant motivation using identified and integrated reasons for engaging in work activities (Sheldon & Houser-Marko, 2001; Sheldon & Kasser, 1995). Each day, participants rated the extent to which they were engaged in each of the two work-related activities for each of the two presented reasons, using Likert-type items with a response scale ranging from 0 (*not at all for this reason*) to 10 (*completely for this reason*). Item wording for identified motivation was as follows: "I did it because I thought it was an important and valuable thing to do" and item wording for integrated motivation was as follows: "I did it because I really wanted to do it" (see Fig. 1). We obtained a self-concordance score for each of the work-related activities participants listed by averaging the scores reported on measures of identified and integrated motivation. This aggregation of two self-concordant motivation types is typical in the self-concordance literature because both of those motivational types represent self-concordant motivation (Sheldon & Houser-Marko, 2001; Sheldon & Kasser, 1995). Cronbach's alphas for the scale as a whole varied between .73 and .84 ($M = .77$) across five days. The Cronbach's alphas for the specific activities were as follows: teaching $\alpha = .81$; attending a work-related training and education $\alpha = .84$; meetings $\alpha = .89$; and tests and exams $\alpha = .75$. These alpha levels illustrate that the level of self-concordance is dependent on the type of activities pursued rather than that it is only a trait-like characteristic.

2.2.1.4. Job demands. Instead of using predefined categories of what are assumed to be demanding work-related activities for teachers (e.g., dealing with pupils' misbehavior and a high workload), in this study, we measured the perceived demand level for each of the work-related activities teachers engaged in during their working days. Teachers were asked to rate how demanding they had experienced each of the work-related activities they listed each day, using a Likert-type item with a response scale ranging from 0 (*not demanding at all*) to 10 (*extremely demanding*). Cronbach's alphas ranged between .63 and .73 ($M = .69$) per day, across 5 days. Job demands were measured via single item; however, each teacher rated two work activities using this item, 3 to 5 days in a row, which means that each teacher included in the analysis rated job demands at least six times. Hence, each teacher has a mean job demand score, calculated on the basis of those six or more ratings. Cronbach's alpha coefficients were calculated for each teacher using these measures, and the coefficients refer to the average Cronbach's alpha coefficient on the whole sample of teachers.

2.2.2. Control measures

Trait-level measures refer to the background questionnaire, consisting of demographics, and trait-level control variables (age, health, autonomy, competence, and general job resources).

Fig. 1. The self-concordance measure in Dutch: screenshot of the on-line "Happiness Diary".

2.2.2.1. Age. Teachers entered their age in years in the background questionnaire.

2.2.2.2. Satisfaction of basic psychological needs. We measured the satisfaction of autonomy, relatedness, and competence needs with the Basic Psychological Needs Scale (Deci & Ryan, 2000). The Autonomy subscale consisted of seven items (e.g., "I feel like I am free to decide for myself how to live my life", $\alpha = .78$); the Competence subscale consisted of 6 items (e.g., "Most days I feel a sense of accomplishment from what I do", $\alpha = .60$) and the Relatedness subscale consisted of 8 items (e.g., "I really like the people I interact with", $\alpha = .76$). These Cronbach's alpha coefficients are in line with previous studies that reported values of internal consistency ranging from .61 to .81 for the Autonomy subscale, .60 to .86 for the Competence subscale, and .61 to .90 for the Relatedness subscale (Gagné, 2003; Johnston & Finney, 2010; Kashdan, Mishra, Breen, & Froh, 2009; Wei, Philip, Shaffer, Young, & Zakalik, 2005).

2.2.2.3. Satisfaction with health. Teachers rated the extent to which they were satisfied with their overall health, using one item (i.e., "Taking everything together, how satisfied are you with your health?"; Simon, De Boer, Joung, Bosma, & Mackenbach, 2005). The Likert-type response scale ranged from 0 (*not satisfied at all*) to 10 (*completely satisfied*). This one-item measure reflects an overall self-assessment of an individual's overall satisfaction with health. Substantial body of international research demonstrated that this measure is a useful and reliable way of assessing and monitoring health satisfaction. The item was found to be significantly and independently associated with specific health problems, use of health services, changes in functional status, recovery from episodes of ill health, mortality, and sociodemographic characteristics of respondents (e.g., Bowling, 2005; Kinney & Coyle, 1992; Meurer, Layde, & Guse, 2001; Zhang, Rohrer, Borders, & Farrell, 2007). For example, low self-assessed health satisfaction is associated with mortality risk, even when other (even objective) indicators of health status have been controlled for (Idler & Benyamini, 1997).

2.2.2.4. Job resources. We measured job resources with four subscales (Bakker, Demerouti, & Verbeke, 2004), each consisting of three items: social support from colleagues (e.g., "If necessary, can you ask your colleagues for help?", $\alpha = .84$); feedback about performance (e.g., "I receive sufficient information about my work objectives", $\alpha = .91$); supervisor coaching (e.g., "I feel valued by my supervisor", $\alpha = .93$), and opportunities for development (e.g., "In my work, I can develop myself sufficiently", $\alpha = .95$). These subscale provide evidence of construct validity (i.e., that the scale could be considered heterogeneous to some extent). The reliability for the whole scale was $\alpha = .82$. Previous studies demonstrated internal and external validity for this scale showing that job resources are the most important predictors of various indicators of positive work-related outcomes, such as extra role performance (Bakker et al., 2004) and work engagement (e.g., Hakanen et al., 2006).

2.3. Procedure

A sample of secondary school teachers from across Netherlands received an invitation to join the study via official school email contact. Teachers who joined the study received daily reminders via e-mail to fill out the diary. Participation in this research was voluntary, and respondents were ensured anonymity. The study did not involve any form of deception or risk to the participants beyond that encountered in everyday life, and the official ethics committee of our Institute approved it. At the end of the data collection, all the participants who had filled out the diary three times or more entered a lottery, in which we randomly selected five teachers and awarded them with a €100 check each.

The diary filled out by teachers was a structured internet diary application designed specifically for this study—a modified version of the day reconstruction method (DRM; Kahneman et al., 2004). On the first screen, teachers reported the two work-related activities they have spent in most time during the preceding day, by choosing from a drop-down activities list, which included the following activities: teaching, preparing lessons, preparing and correcting exams, meetings with parents, meetings with colleagues, meeting with supervisors, counseling pupils, work-related training, commuting, and excursions. The teachers also reported the duration for each of the work activities they listed. On the next screen, teachers rated the reasons for engaging in each of the two activities they listed, using two items representing self-concordance (see Fig. 1). On the third screen, teachers rated how demanding each of the two work activities were for them. Finally, on the fourth screen, teachers rated how happy they felt during the two work activities.

2.4. Analysis

The dataset has a three-level hierarchical structure with work activities (Level 1) nested within days (Level 2), and days nested within teachers (Level 3). Therefore, we used hierarchical linear modeling to analyze the data. In this way, we accounted for the dependencies between the work activities reports from the same teacher (Snijders & Bosker, 1999). We centered the person-level variables (i.e. age, health, autonomy, competence and job resources) at the grand mean. Furthermore, we centered the within-person variables (i.e., self-concordance, demands and happiness) at the respective person mean. This centering strategy is typical with multilevel models (e.g., Heck, Thomas, & Tabata, 2010; Peugh, 2010; Peugh & Enders, 2005; Snijders & Bosker, 1999). We used the SPSS program for multilevel modeling (Heck et al., 2010).

Hierarchical linear modeling is particularly suitable for longitudinal data analysis, where missing data occurs relatively often, because of its capacity of the typical estimation procedure used with this model that makes use of all available data in the estimation of model parameters (Kwok et al., 2008). Maximum likelihood (ML) estimation employs both the complete and

incomplete data to estimate the parameter values that have the highest probability of producing the sample data (Baraldi & Enders, 2010). These values for missing data are only used during the ML method for obtaining final estimates and are not imputed within a data set (Jeličić, Phelps, & Lerner, 2009). As such, ML is considered to be one of the "state of the art" missing data techniques (Baraldi & Enders, 2010; Jeličić et al., 2009).

2.4.1. Hypothesis testing

A three-level hierarchical model assessed the effects of the perceived demand level and self-concordance of teachers' work activities on happiness felt during those activities while controlling for age, health, general autonomy and competence, and general job resources. It was predicted that self-concordance would buffer the negative effect of demand on happiness on a within-day activity level (Hypothesis 1) and that demand level would be negatively related to happiness on a within-day activity level (Hypothesis 2). Finally, it was also predicted that the self-concordance would buffer the negative effect of the demand on happiness (Hypothesis 3).

In order to test our hypotheses, we used a staged approach. We started with a Null model without predictors. Hence, before testing our hypotheses, we examined the decomposition of total state happiness variance across the three levels (teachers, days, and activities). For our three-level model, the proportion of variability or the intraclass correlation (ICC) in state happiness variance at Level 3 (between teachers) was 0.16 (0.63 / [0.63 + 0.47 + 2.96]); for Level 2 (within-teachers day level), the ICC was 0.12 (0.47 / [0.63 + 0.47 + 2.96]); and for Level 1 (within teachers activity level) the ICC was 0.73 (2.96 / [0.63 + 0.47 + 2.96]). These results suggest that there is adequate variability at each level to conduct a multilevel analysis (Heck et al., 2010; Snijders & Bosker, 1999).

Next, in Model 1, we entered age, health, autonomy, competence, and job resources as between-person trait-level (level 3) control variables:

$$\beta_{00k} = \gamma_{000} + \gamma_{001}(AG)_k + \gamma_{002}(H)_k + \gamma_{003}(AU)_k + \gamma_{004}(CO)_k + \gamma_{005}(RE)_k + \gamma_{001}(JR)_k + u_{00k}, \tag{1}$$

where γ_{000} represents the intercept, $(AG)_k$ is age, $(H)_k$ is health, $(AU)_k$ is autonomy, $(CO)_k$ is competence, $(RE)_k$ is relatedness, and $(JR)_k$ is job resources for teacher k, γ_{001} to γ_{006} are the corresponding Level 3 predictors' coefficients, and u_{00k} represents the Level 3 random effect.

In Model 1, we also assessed lagged effects of previous days' happiness on next days' state happiness during work activities because we wanted to predict changes in happiness during activities due to the interaction between the demand and self-concordance level experienced during work-related activities, beyond the previous day's happiness. Thus, we added day of the week as well as the lagged effect of happiness during the previous day as within-person (level 2) day-level control variables:

$$\pi_{0jk} = \beta_{00k} + \beta_{01k}(DAY)_{jk} + \beta_{02k}(HPD)_{jk} + r_{0jk}, \tag{2}$$

where β_{00k} is the intercept for a teacher k in modeling the day j effects. Moreover, $(DAY)_{jk}$ is day, and $(HPD)_{jk}$ is happiness felt during the previous day for day j (Level 2 predictors), with β_{01k} and β_{02k} as the corresponding Level 2 predictors' coefficients, and r_{0jk} represents the Level 2 random effects.

In Model 2, we added the perceived demand level and self-concordance during each of the four work activity types that teachers spent most time in-teaching, work-related training, meetings, and exams (level 1). We proposed that, for an activity *i* of a teacher *k*, performed during the day *j*, the perceived demand level and self-concordance affect happiness felt during that activity:

$$Y_{ijk} = \pi_{0jk} + \pi_{1jk}(DL)_{ijk} + \pi_{2jk}(SC)_{ijk} + \varepsilon_{ijk}, \tag{3}$$

where π_{0jk} presents the intercept, $(DL)_{ijk}$ presents the demand level and $(SC)_{ijk}$ represents self-concordance (Level 1 predictors) for an activity *i* during the day *j* of a teacher *k*, π_{1jk} and π_{2jk} are the corresponding Level 1 predictors' coefficients, and ε_{ijk} is the Level 1 random effect.

Finally, in Model 3, we entered the interaction terms between the perceived demand level and self-concordance experienced during teaching, work-related training and education, meetings and exams:

$$Y_{ijk} = \pi_{0jk} + \pi_{1jk}(DL)_{ijk} + \pi_{2jk}(SC)_{ijk} + \pi_{3jk}(DL)_{ijk}(SC)_{ijk} + \varepsilon_{ijk}. \tag{4}$$

In order to examine which model provided the best fit, we compared the deviance values of the models (Snijders & Bosker, 1999). We tested the improvement of each model over the previous one by computing the differences of the respective log likelihood statistic -2^*log and submitting this difference to a χ^2-test. Each nested model showed an improved model fit. Model 1 was compared to the null (intercept only) model ($\Delta - 2 \times log = 2222.54, \Delta df = 12, p < .001$); Model 2 was compared to Model 1 ($\Delta - 2 \times log = 160.26, \Delta df = 8, p < .001$); and Model 3 was compared to Model 2 ($\Delta - 2 \times log = 37.81, \Delta df = 4, p < .001$).

3. Results

3.1. Descriptive analyses

Table 1 presents the descriptive information for the work activities, namely, the self-concordance, demand level, and happiness means and standard deviations per activity type. Table 2 illustrates the nature of our teachers' reports; that is, it presents the overall means, standard deviations, and zero-order correlations between variables included in the study. The measures of self-concordance demand level and happiness of each participant were averaged across work activities for these descriptive and correlational analyses.

3.2. Multilevel analysis results

The results of multilevel modeling analyses with subsequent models are shown in Table 3.

3.2.1. Model 1
Results from Model 1 indicated that age, satisfaction with health, and autonomy were not significantly related to state happiness during work activities (see Table 3). Competence, $t(126.82) = 2.37$, $p = 0.02$, and job resources, $t(131.89) = 2.35$, $p = 0.02$, related positively to state happiness. Moreover, whereas day of the week was not significantly related to state happiness during work activities, happiness felt during the previous day (a lagged effect) was significantly and positively related to state happiness during work activities, $t(733.52) = 5.96$, $p < .001$.

3.2.2. Model 2
The first hypothesis stated that self-concordance during specific work activities would be positively related to the happiness felt during those activities. In line with this hypothesis, the more teachers experienced their work activities as self-concordant, the significantly happier they felt during those activities (see Model 2 in Table 3). The teachers' four most prominent work activities showed this pattern: teaching, $t(765.28) = 3.92$, $p < .001$; work-related trainings, $t(755.97) = 2.65$, $p < .001$; meetings, $t(770.41) = 6.93$, $p < .001$; and exams, $t(754.97) = 7.55$, $p < .001$.

In Hypothesis 2, we stated that the perceived demand level of specific work activities would be negatively related to momentary happiness felt during those activities on a within-day activity-level. In line with this hypothesis, the more demanding work activities were perceived to be, the less happy teachers felt while engaging in those activities (see Model 2 in Table 3). Again, the four most prominent work activities showed this pattern: teaching, $t(759.98) = -4.44$, $p < .001$; work-related trainings, $t(756.46) = -2.76$, $p < .001$; meetings, $t(770.70) = -6.96$, $p < .001$; and exams, $t(754.97) = -7.37$, $p < .001$.

3.2.3. Model 3
Hypothesis 3 stated that self-concordant motivation during activities would moderate the relation between the perceived demand level and state happiness felt during work-related activities (teaching, work-related trainings, meetings, and exams). To test this hypothesis, in Model 3 we added four interaction terms in Model 3 at the lowest level (Level 1), namely, the interaction of the perceived demand level and the experienced self-concordance during the four work activities: teaching, work-related trainings, meetings, and exams.

The results, presented in Table 3, Model 3, indicated that the interaction effects between the perceived demand level and self-concordance of teaching, $t(756.82) = 4.17$, $p < .001$; exams, $t(765.22) = -2.81$, $p < .001$; and meetings, $t(782.34) = -2.98$, $p < .001$, were statistically significant. However, the interaction term for the work-related trainings demand level and self-concordance of was not statistically significant, $t(744.44) = -1.50$, $p = .14$. Hence, our Hypothesis 3 is partially supported. To examine the interaction patterns in more detail, we ran simple slope tests as suggested by Preacher, Curran, and Bauer (2006). The interaction patterns are graphically displayed in Figs. 2 through 4.

Table 2
Means, standard deviations, and person-level correlations for the study variables.

Variable	M (SD)	1.	2.	3.	4.	5.	6.	7.	8.
1. Self-concordance	6.87 (2.36)	–	.68**	−.09**					
2. Happiness	6.67 (2.01)	.68**	–	−.30**					
3. Demand level	5.71 (2.79)	−.06*	−.27**	–					
4. Age	45.33 (11.43)	.09**	.08**	−.03	–				
5. Health	7.10 (2.16)	.04	.06	−.05	−.16**	–			
6. Autonomy	6.79 (1.45)	.14**	.20**	−.20**	.11**	.15**	–		
7. Relatedness	7.40 (1.21)	.03	.06*	.03	−.03	.08**	.52**	–	
8. Competence	7.22 (1.23)	.19**	.21**	−.09**	.07*	.15**	.67**	.62**	–
9. Job resources	6.66 (1.69)	.23**	.18**	−.03	.04	.02	.25**	.15**	.30**

Note. $N = 132$. Correlations below the diagonal are person-level correlations, and correlations above the diagonal are within-person correlations.
 * $p < .05$.
 ** $p < .01$.

Table 3
Fixed effects estimates (top) and variance-covariance estimates (bottom) for models predicting activity-level.

Parameter	Null-model	Model 1	Model 2	Model 3
Fixed effects				
Level 3 (teacher)				
Intercept	6.67 (0.08)***	5.07 (0.39)***	5.25 (0.62)***	0.21 (1.88)
Age		0.11 (0.08)	0.10 (0.07)	0.11 (0.08)
Health		0.03 (0.08)	0.04 (0.08)	0.03 (0.08)
Autonomy		0.23 (0.11)*	0.06 (0.10)	0.04 (0.10)
Competence		0.29 (0.12)*	0.35 (0.11)**	0.29 (0.1)**
Relatedness		0.28 (0.10)*	0.24 (0.09)*	0.20 (0.09)*
Job resources		0.20 (0.09)*	0.19 (0.07)*	0.19 (0.08)*
Level 2 (day)				
Day		−0.09 (0.06)	−0.06 (0.06)	−0.07 (0.06)
Happiness previous day		0.28 (0.05)***	0.23 (0.04)***	0.22 (0.04)***
Level 1 (work activity)				
Teaching demand			−0.04 (0.001)***	−0.21 (0.04)***
Exams demand			−0.35 (0.05)***	−0.23 (0.06)***
Meetings demand			−0.31 (0.04)***	−0.15 (0.07)*
Training/studying demand			−0.21 (0.07)**	−0.04 (0.14)
Teaching SC			0.04 (0.009)***	0.02 (0.01)
Exams SC			0.36 (0.05)***	0.53 (0.08)***
Meetings SC			0.31 (0.04)***	0.53 (0.08)***
Training/studying SC			0.20 (0.07)**	0.37 (0.12)**
Teaching demand by SC				0.02 (0.001)***
Exams demand by SC				−0.03 (0.001)**
Meetings demand by SC				−0.03 (0.001)**
Training demand by SC				−0.03 (0.02)
Variance–covariance estimates				
Level 3 variance	0.63 (0.13)***	0.27 (0.10)**	0.20 (0.09)*	0.23 (0.08)**
Level 2 variance	0.47 (0.15)**	0.23 (0.17)*	0.24 (0.15)*	0.18 (0.14)
Level 1 variance	2.96 (0.16)***	2.94 (0.20)***	2.36 (0.17)***	2.29 (0.17)***
−2 log likelihood	5420.625	3198.09	3037.83	3000.02
Diff-2 log		2222.54***	160.26***	37.81***
df		12	8	4

Note. SC = self-concordance.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

Figs. 2 through 4 show that self-concordant motivation for work activities does indeed buffer the effects of high job demands on state happiness. More concretely, Fig. 2 shows that a high demand level of teaching (1 standard deviation above the mean) combined with low self-concordant motivation for teaching (1 standard deviation below the mean, $\gamma = -0.10$, $SE = 0.04$, $z = -2.16$, $p = .04$) related significantly and negatively to state happiness during teaching activities. However, when pursued with high self-concordant motivation (1 standard deviation above the mean), the demand level of teaching did not relate significantly to happiness ($\gamma = -0.03$, $SE = 0.05$, $z = -0.57$, $p = .09$). In other words, under conditions of highly demanding teaching, high self-concordance (1 standard deviation above the mean) buffered the otherwise negative relation between high job demands and happiness, thus supporting our Hypothesis 3 for teaching.

Fig. 3 demonstrated that highly demanding exams (1 standard deviation above the mean) did relate significantly negatively with happiness. However, the negative relation of high demands on state happiness during exams was weaker under conditions of high self-concordance (1 standard deviation above the mean, $\gamma = -0.49$, $SE = 0.75$, $z = -0.65$, $p = .07$), as compared to
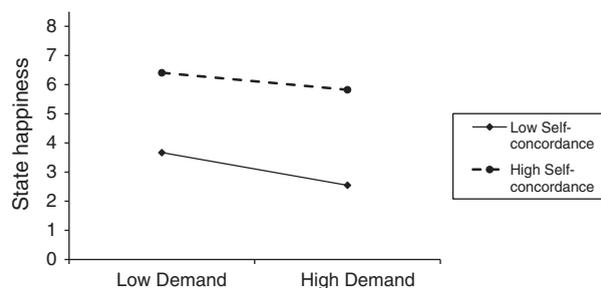

Fig. 2. Interaction effect of teaching demands by self-concordance on state happiness. Low = 1 standard deviation below the mean. High = 1 standard deviation above the mean.
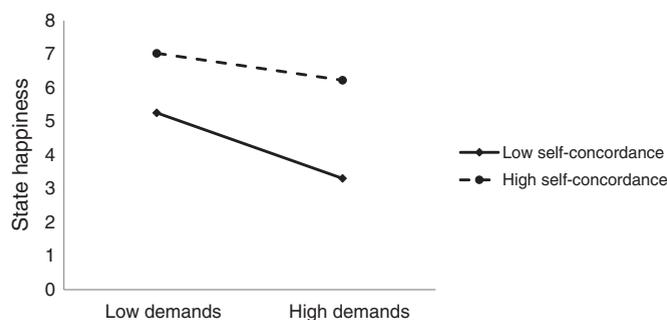
Fig. 3. Interaction effect of exams demands by self-concordance on state happiness. Low = 1 standard deviation below the mean. High = 1 standard deviation above the mean.

low self-concordance (1 standard deviation below the mean, $\gamma = -0.33$, $SE = 0.24$, $z = -1.37$, $p = .02$), which provides evidence supporting Hypothesis 3 for this activity.

Furthermore, Fig. 4 demonstrated that high demands during meetings with parents, colleagues, or supervisors (1 standard deviation above the mean) related significantly and negatively to state happiness during meeting activities. However, the negative effects of high demands on state happiness during meetings with parents, colleagues or supervisors were weaker under conditions of high self-concordance (1 standard deviation above the mean, $\gamma = -0.20$, $SE = 0.05$, $z = -3.91$, $p < .001$) as compared to low self-concordance (1 standard deviation below the mean, $\gamma = -0.18$, $SE = 0.04$, $z = -4.23$, $p < .001$), which also provides evidence supporting Hypothesis 3 for this activity.

As recommended by Peugh (2010), we used the proportional reduction in variance statistic as one of the effect size estimates that are generally accepted in MLM analyses. We calculated the proportional reduction in Level-3 residual variance that resulted from adding activity-level self-concordance and demands from the Level-1 residual variance estimates in the model with control variables ($\sigma^2 = 2.94$) and the model that includes activities' self-concordance and demands ($\sigma^2 = 2.36$). Substituting these values into the proportional reduction in variance equation (Peugh, 2010) showed that Level-1 residual variance decreased by 20% (i.e., [2.94 − 2.36] / 2.94 = .20) after adding activities' self-concordance and demands.

We also examined the effect size of adding the interaction between the activities' self-concordance and demands. Hence, we incorporated the Level-1 residual variance estimates from the model that includes control variables and activities' self-concordance and demands ($\sigma^2 = 2.36$) and the model that includes the interaction between activities' self-concordance and demands ($\sigma^2 = 2.29$) values into the proportional reduction in the variance equation (Peugh, 2010). The results showed that Level-1 residual variance decreased by 3% (i.e., [2.36 − 2.29] / 2.36 = .03) after adding activities' self-concordance and demands.

4. Discussion

The central aim of the study was to examine the role of self-concordant work motivation in the relation between demanding work activities and happiness of teachers, using an innovative diary methodology that measures the relevant constructs on an activity level. Building upon previous research within the domains of work stress (e.g., Bakker et al., 2005; Scheck, Kinicki, & Davy, 1997), happiness (e.g., Howell et al., 2011; Reis et al., 2000), and the self-concordance model of motivation (Gagné & Deci, 2005), this study provides a deeper insight into the associations between activity-related demands and happiness among secondary school teachers.
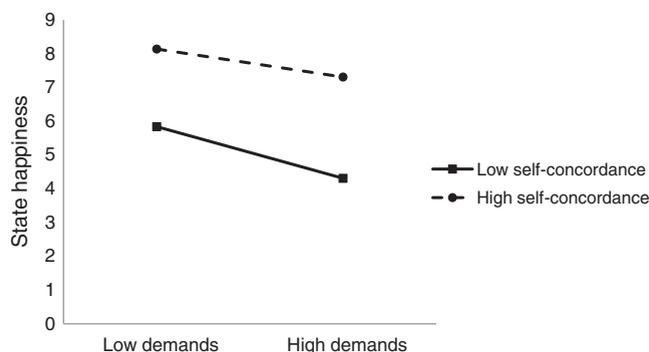

Fig. 4. Interaction effect of meetings demands by self-concordance on state happiness. Low = 1 standard deviation below the mean. High = 1 standard deviation above the mean.

Altogether, the analyses mainly provide confirmation for the proposed model: Teachers' self-concordant motivation for specific work activities buffers the negative impact of high work demands on happiness on a within-person level, for teaching, exams, and meetings; however, the effect was not evident for work-related trainings. In other words, self-concordant motivation for work has an important role in reducing the negative effects of high demands during specific activities and making secondary school teachers happy in their everyday work life.

4.1. Theoretical contributions

The current study makes several important contributions to the existing literature. First, it emphasizes the intraindividual changes in work-related happiness, motivation, and work demands among teachers. In this study, we controlled for several relevant trait-level variables. We also controlled for the lagged effects of previous days' happiness on next days' state happiness because we wanted to predict changes in happiness during activities due to the interaction between the activities' demands and self-concordance, beyond the previous day's happiness. Thus, we think it is justified to imply that, although some teachers might be generally happier at work than others, our study nevertheless shows that happiness at work is largely dependent on the teachers' subjective experience of their moment-to-moment work activities.

Second, our study has shown that different teachers perceive the demand levels of work activities differently on different work days. Similarly, teachers' motivation for putting effort in these activities varied on a within-person level. Moreover, these fluctuations in the perceived activities' demand level and motivation were associated with changes in teachers' momentary happiness during the engagement in those activities (Ashkanasy & Ashton-James, 2006; Ilies et al., 2007; Weiss & Cropanzano, 1996). Using the DRM approach, the present study revealed that both motivation and demand levels of work activities have a strong association with state happiness at the work-activity level. No less than 75% of happiness during work activities actually resided on the activity level, and it depended on specific perceptions of the demand level and self-concordance of work activities. Thus, teachers' happiness fluctuates not only on a day level, but also depending on the perception of those work activities as either demanding or self-concordant in nature. These results are valuable because previous studies mostly conceptualized happiness at work at the person level (Fisher, 2010). In that way, the current study expands the existing literature by providing novel information on how the demand level and the self-concordance of specific work activities relate to state happiness beyond the baseline level of the previous day happiness. These findings also support the view that work activities have immediate affective consequences (Ilies et al., 2007; Weiss & Cropanzano, 1996).

Third, our findings demonstrate that variations in work happiness can be predicted by the interaction between the demands level and the self-concordant motivation for engagement in those activities. The results showed that, when teachers perceive highly demanding work activities as intrinsically valuable or interesting (i.e., self-concordant), that perception influences how they emotionally respond to those activities. It helps teachers to interpret complex, highly demanding work activities that require a lot of effort as important, meaningful and/or interesting tasks.

Teachers who experience their everyday work life activities as highly self-concordant (i.e. consistent with their own interests and values) remain happier when working compared to teachers who experience their work activities as low self-concordant, even when those activities require high effort and result in increased workload and responsibilities. In that way, self-concordant motivation can be seen as a personal resource that reduces the psychological costs related to highly demanding work activities. These findings are highly consistent with the Lazarus (2000) stress appraisal conceptualization, namely, self-concordant motivation helps teachers to cope with high demands in a more effective way. More concretely, pursuing highly demanding work activities with self-concordant motivation enables teachers to reappraise a potential threat (i.e., high work demands) in nonthreatening terms (e.g., highly demanding work activities seen as valuable, interesting or meaningful work that requires a lot of effort and complexity), which can remove the cognitive basis of the stress reaction.

Fourth, our study provides additional support for the job demand–resources model by showing that the higher the demands level of work activity is, the lower the happiness felt during that activity. Previous between-person survey studies had already shown that high work demands have negative effects when they are related to prolonged high effort, work overload, insecurity, or heighted responsibility from which teachers do not recover adequately (Bakker et al., 2010; Demerouti & Bakker, 2011; Hakanen et al., 2006; Jamal, 1999; Meijman & Mulder, 1998; Scheck et al., 1997). Although there is some support for the importance of self-concordance in within-person happiness fluctuations (e.g., Howell et al., 2011; Reis et al., 2000; Sheldon & Houser-Marko, 2001), to date, few studies have directly used within-day measures of self-concordance, happiness, and demands among teachers on the work activity level. Also, most happiness at work studies used generic measures to assess the predictors and effects of happiness, and, as such, they have somewhat neglected the complexity and variation of subjective experiences of specific teachers' work activities (Fernet et al., 2012). Hence, the novelty of our study is the use of a diary methodology—the modified version of the DRM—which enabled us to capture fine grained within-person processes regarding the demand level of work activities, motivation for engaging in those activities. and happiness felt during those activities.

Our measurement approach is somewhat similar to the episodic process model of affective influences on performance (Beal, Weiss, Barros, & MacDermid, 2005). Beal et al. (2005) focused on the performance episodes, which they described as thematically organized behaviors directed toward relevant goals. However, while Beal et al. emphasized the role of cognitive resources and allocation for performance efficiency in work activities, we expand their approach by showing the importance of motivation for the immediate affect related to the specific work activities.

Altogether, our findings go beyond previous studies by suggesting that the psychological meaning of each specific daily work activity matters for teachers' happiness at work. As Sheldon and Kasser (1995) have noted, when daily activities are perceived as

congruent with one's basic needs and values, happiness is likely to be fostered. Thus, it seems that happiness at work involves more than avoiding high demands and having good resources at hand; happiness also depends on an interpretation made by an individual teacher and by existing personal interest and value found in everyday work activities as reflected in self-concordant motivation (Reis et al., 2000).

In summary, our results can partially explain the contradictory findings in research on teachers' stress levels and happiness. They provide an explanation as to why teachers remain happy and satisfied in their work even though they also report high levels of stress. Our findings reveal that it can, at least partly, be attributed to their motivation. These findings have theoretical implications for motivational theory as they show that motivation for work can be seen as a specific personal resource for dealing with highly demanding work tasks.

4.2. Limitations

It should be noted that this approach has some limitations. First, the participants were a relatively homogenous sample of secondary school teachers; hence, in order to generalize the present findings, it is necessary to replicate them in different types of schools (e.g., primary schools, or universities). Second, we refer to the episodic assessments of happiness as experienced happiness, whereas in fact, they are retrospective reports of very recent episodes. This notion leads to question whether a teacher's perception of motivation and demands would be any different if measured just before or during the actual work activity rather than after the teacher has had some distance from the event. The DRM is susceptible to recall bias, as it uses chronological reconstruction to recall into memory the momentary happiness during activities that occurred during the previous day. However, a recent study indicated that happiness ratings as collected with the DRM converge well with concurrent reports of happiness as collected with experience sampling methods (Dockray et al., 2010). Nevertheless, we do not yet have ESM data on resources and demands. Thus, it would be useful to use ESM in future studies in order to gain more insight into the concordance of DRM and ESM reports of resources and demands.

Third, a possible limitation might be related to the order in which the teachers completed the diaries. Specifically, teachers first selected the activities, and then rated them in terms of self-concordance ratings, perceived demands and happiness. This ordering did not change; hence, there is a potential risk that some ordering effects might be embedded in the data. Whereas in traditional cross-sectional study design question ordering effects have been studied extensively (Rasinski, Lee, & Parvati, 2012), relatively little is known about the effects of diary completion itself on participants' responses (Bolger, Davis, & Rafaeli, 2003; Laurencau & Bolger, 2005). However, the DRM is a repeated measures design that allows for examination of processes in their natural context. In that way, DRM reduces the likelihood of retrospection by minimizing the amount of time between the actual experience and the assessment of the experience (Bolger et al., 2003; Kahneman et al., 2004; Stone, Schiffman, DeVries, & Frijters, 1999) because participants "relive" a particular moment and questions about demands and motivation could actually help respondents to accurately recall their emotional state. In that way, the DRM requires minimal cognitive processing before indicating the responses (Kahneman et al., 2004). Thus, we think that ordering did not have substantial effects in the present study.

Finally, the present study did not model processes; it was based on the analysis of associations. Nevertheless, it provides an opportunity for future work to build off this study, namely, future studies could orient more on modeling the dynamic causal processes between motivation, job demands, and happiness in teaching.

4.3. Practical implications and conclusions of the study

The results of this study showed that, after adding activities' self-concordance and demands, an extra 3% of happiness variance was explained, which is relatively small but nevertheless substantial because it is an important qualification of the main effects. Furthermore, the deviance test (producing the log likelihood statistic $-2 * \log$) showed a better model fit when including the interaction effects as opposed to the model where only main effects were reported. Also, effect sizes of the significant relations between work activity-level happiness, self-concordance, and perceived demands were moderate to large, all of which suggests that the present study is meaningful not only in theory but also in a practical way.

More concretely, work motivation and the perception of work demands seem to be the essential determinants of momentary work-related well-being. In that way, our findings can provide a base for intervention strategies for enhancing teachers' work-related well-being and stress management. Because motivation has proven to be highly relevant in the appraisal of job demands—potential work stressors—it seems beneficial to help teachers become aware of and, if possible, manage their motivation for work activities.

On the one hand, teachers can be encouraged to get back in contact with their self-concordance (e.g., to get back in contact with why they wanted to be teachers in the first place). On the other hand, if a teacher continuously experiences a low level of self-concordance during work, and, in turn, feels unhappy at work most of the time that could be a signal to change one's job or to craft the job so that it better fits with personal needs and abilities and is more self-concordant with personal interests (Tims & Bakker, 2010).

Altogether, the current study is the first exploration on the within-person and within-day interplay between motivation, perceived demands, and happiness among secondary school teachers. It shows substantial within-person variability in motivation, job demands, and happiness as well as that motivation for work activities can have a positive effect on work-related state happiness. Our findings indicate that, when confronted with highly demanding work activities, teachers appraise their meaning and significance, and self-concordant work motivation seems to be beneficial during this appraisal process. Specifically,

teachers' engagement in highly demanding activities with self-concordant motivation seems to reduce the negative impact related to those high demands. Teachers perceive those high demands more as a challenge than as a threat.

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