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What makes teachers enthusiastic: The interplay of positive affect, self-efficacy and job satisfaction

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HIGHLIGHTS

- Teacher enthusiasm (TE) is a key factor of effective teaching.
- This study examined the interplay of three teachers' personal factors favouring TE.
- Positive affect (PA), self-efficacy, job satisfaction related over time and with TE.
- PA related with TE directly and indirectly via self-efficacy and job satisfaction.

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ABSTRACT

Teacher enthusiasm is a key factor of effective teaching, favouring teachers' well-being and instructional behaviour, and students' cognitive, emotional, and motivational outcomes. Research has largely examined its positive effects, while neglecting the interplay of factors shaping teacher enthusiasm. This study aimed at examining the interrelations of motivational (teacher self-efficacy), affective (positive emotions), and well-being factors (job satisfaction) in shaping teachers' experienced enthusiasm. A sample of 536 high school teachers participated in a follow-up study with a time lag of approximately six months. Results confirmed that positive affect was related to enthusiasm both directly and indirectly via self-efficacy and job satisfaction.

1. Introduction

Teacher Enthusiasm (TE) has been defined as "the degree of enjoyment, excitement, and pleasure that teachers typically experience in their professional activities" (Kunter et al., 2008, p. 470) (i.e., experienced enthusiasm), and also as a set of excited instructional behaviours (i.e., displayed enthusiasm) that may frequently co-occur (Keller, Becker, Frenzel, & Taxer, 2018; Keller, Hoy, Goetz, & Frenzel, 2016). TE is a key feature of effective, high-quality teaching (Kunter et al., 2013) and is reflected in teachers' competence and motivation – the more teachers are motivated to teach and strive for raising student motivation and achievement, the higher is their tendency to feel enthusiastic and behave enthusiastically (Kunter & Holzberger, 2014; Sutton, 2004).

TE has been found to favour a range of student outcomes, such as enjoyment (Frenzel, Goetz, Lüdtke, Pekrun, & Sutton, 2009), interest (Kim & Schallert, 2014), on-task behaviour (Brigham, Scruggs, & Mastropieri, 1992), intrinsic motivation (Burić, 2019; Patrick, Hisley, & Kempler, 2000), recall Moè (2016), and learning (Burić, 2019; Keller, Neumann, & Fisher, 2013). Enthusiastic teachers are rated by their students as more effective (Feldman, 1977) and are recalled better and for a longer period of time (Mowrer-Reynolds, 2008). Since their pre-service years, teachers believe that being enthusiastic is one of the most important characteristics of effective teaching (Minor, Onwuegbuzie, Witcher, & James, 2002). Lastly, TE is beneficial for teachers themselves since it is related to a range of occupational well-being factors such as self-efficacy, job satisfaction, and reduced signs of burnout (e.g., Kunter, Frenzel, Nagy, Baumert, & Pekrun, 2011).

While most of the existing studies focused on the effects of experienced or displayed TE on teaching quality and students' outcomes, less is known about the factors that can shape TE. In their

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review, Keller et al. (2016) stated that teacher enthusiasm "seems to be set within a larger frame of cognitive (beliefs), motivational (self-efficacy), and affective and health-related (emotional exhaustion, job satisfaction) teacher factors" (p. 25). Moreover, they pointed at the reciprocity and interdependency between these factors which, to date, have been largely unexplored. Therefore, in the present study we will focus on three teachers' individual factors which may shape experienced TE, that is, positive affective experiences at work (i.e., affective factor), self-efficacy beliefs (i.e., motivational factor), and job satisfaction (i.e., well-being factor) while taking their reciprocal relationships into consideration as well.

1.1. Teacher enthusiasm

According to contemporary view, TE is a construct constituted of two facets - positive affective experiences that accompany teaching (e.g., enjoyment or excitement) and behavioural expressions that include verbal and nonverbal behaviours such as facial expressions, gestures, varied voice intonation etc. (Keller et al., 2016). The first facet can be considered as 'experienced enthusiasm' while the latter is best viewed as 'displayed enthusiasm' since it is reflected in an enthusiastic instructional behaviour (also called teacher expressiveness). Even though related, these two facets do not always co-occur in an individual (Keller et al., 2016).

Experienced enthusiasm encompasses positive feelings and excitement toward teaching and interacting with students and has been often counterbalanced to teaching-related enjoyment (Frenzel, Becker-Kurz, Pekrun, Goetz, & Lüdtke, 2018; Frenzel et al., 2009; Keller et al., 2016). However, although enthusiasm implies enjoyment, it is more than simply enjoying teaching. For instance, while enthusiasm and enjoyment are perceived as quite similar as emotional terms (Shaver, Schwartz, Kirson, & O'Connor, 1987) and are frequently experienced in educational contexts (Rowe, Fitness, & Wood, 2014), enthusiasm has a higher activation level than enjoyment (Shaver, Schwartz, Kirson, & O'connor, 1987), and includes other aspects such as involvement and pleasure (Kunter et al., 2011).

Next, TE can be conceptualized as a "trait-like, habitual, recurring emotion" (Kunter et al., 2008, p. 470) implying that it is a tendency to experience positive affect during teaching. Moreover, there is empirical support of a conceptualization of TE as a dispositional construct which integrates notions of TE as positive affective experience and as nonverbal expressiveness during teaching, and which explains individual differences in experienced enjoyment and positive emotional expressivity during teaching (Keller, Goetz, Becker, Morger, & Hensley, 2014). Indeed, as shown by Keller et al. (2018), most teachers tend to display their (lack of) enthusiasm consistently across different lessons, which is observable by their students, suggesting stability and a trait-like character of the displayed enthusiasm as well.

When experienced and displayed enthusiasm co-occur within a teacher, (s)he is experiencing an 'authentic enthusiasm' (Keller et al., 2018; Taxer & Frenzel, 2018), which is characterized by both experienced enjoyment, pleasure, and passion and by observable behaviours such as vigour, involvement, and high expressiveness. This kind of authentic enthusiasm has been shown to favour students' interest (Keller et al., 2014) and emotional experiences by triggering higher enjoyment and lower boredom (Keller et al., 2018). Moreover, it also fosters teacher well-being, since it is related to higher levels of job satisfaction and self-efficacy as well as to reduced anger, anxiety, and emotional exhaustion (Taxer & Frenzel, 2018). However, teachers sometimes express inauthentic enthusiasm (i.e., display enthusiasm without actually experiencing enjoyment) as well by amplifying or faking enthusiastic behaviour (Taxer & Frenzel, 2015) in order to increase their teaching effectiveness (e.g., Sutton, Mudrey-Camino, & Knight, 2009). Expressing enthusiasm without actually experiencing it creates emotional dissonance, which is considered to be a source of strain (Grandey, 2000; Morris & Feldman, 1986), and which proved to be related to teacher poorer occupational well-being (i.e., lower levels of job satisfaction and self-efficacy as well as higher levels of anger, anxiety, and exhaustion; Taxer & Frenzel, 2018). Regardless its authenticity, individual factors that shape TE have been rather unexplored area so far. Since the present study is aimed at investigating individual factors that shape TE, we focused on experienced TE rather than on displayed enthusiasm.

1.2. Teacher self-efficacy and job satisfaction: the role of positive affect

Self-efficacy is a belief in one's capabilities to be able to tackle tasks successfully (Bandura, 1977; 1986). Rooted in the concept of human agency (Bandura, 2001), it refers to perceptions of having the power to obtain the desired effects through personal actions and efforts. Hence, teacher self-efficacy is perceived ability to succeed in engaging students, favouring their learning and motivation, and managing the classroom, even when a task is made difficult (for instance, while working with disruptive, unmotivated, or disengaged students; Tschannen-Moran & Hoy, 2001). Teacher self-efficacy is beneficial for both teacher and student outcomes. For instance, it has been shown that teacher self-efficacy is related to behavioural, emotional, and cognitive students' engagement (van Uden, Ritzen, & Pieters, 2014), to teachers' reduced job stress and increased job satisfaction (Troesch & Bauer, 2017), as well as reduced quitting intentions (Wang, Hall, & Rahimi, 2015).

According to Bandura (1982), self-efficacy beliefs are acquired through enactive attainment, vicarious experience, verbal persuasion, and physiological and emotional states. Therefore, affective experiences may serve as a source of information about one's performance and consequently shape one's self-efficacy beliefs (Bandura, 1982). More precisely, feelings of anxiety or tension while performing a certain task can be viewed by an individual as a sign of lack of capability and control in a given situation which may result in lower self-efficacy beliefs. On contrary, positive affective experiences may favour the perception of being capable to successfully manage the situation, thus enhancing higher self-efficacy beliefs (Bandura, 2009). In other words, emotions and other affective experiences can serve as a filter that determines which efficacy information is seen as salient and how is it interpreted, therefore shaping self-efficacy beliefs by making mood-congruent thoughts more available (Kavanagh & Bower, 1985). Indeed, there is empirical evidence showing that experimental induction of positive/negative emotional states increases/decreases the levels of academic self-efficacy in college students (Medrano, Flores-Kanter, Moretti, & Pereno, 2016) which suggests that affective experiences can be considered as an antecedent of self-efficacy.

However, self-efficacy beliefs can also influence affect – high self-efficacy beliefs can increase positive affective experiences through the perception of being capable to manage the challenging situations while low self-efficacy may lead an individual to perceive goals as less attainable which could increase negative affective experiences (Pajares, 1996). Previous research clearly points to the tight relationship between self-efficacy (or similar self-concept constructs) and emotions, confirming the positive association of self-efficacy with positive emotions and negative association of self-efficacy with negative emotions (e.g., Moè, 2016; Burić, Slišković, & Macuka, 2018; Burić & Frenzel, 2019; Brígido, Borrachero, Bermejo, & Mellado, 2013; Lohbeck, Hagenauer, &

Frenzel, 2018). However, to date, the underlying causal mechanisms of these relationships have largely remained an unexplored issue [see also Kleinsasser (2014) for a reflection on studies on the growing field of teacher self-efficacy].

Affective experiences are related to job satisfaction (Klassen & Chiu, 2010). Defined as the extent to which the actual job is perceived close to the ideal one (Pavot & Diener, 1993), job satisfaction is a very important factor in promoting overall teachers' well-being and preventing burnout (Skaalvik & Skaalvik, 2017). Affective experiences have been acknowledged as important factor in determining job-related attitudes such as job satisfaction (Ashforth & Humphrey, 1995; Weiss & Cropanzano, 1996). According to the affective-events theory (Weiss & Cropanzano, 1996), certain work events, depending on the work environment and the affective dispositions of an individual, lead to specific emotions, which, accumulated over time, shape job attitudes and behaviour. Indeed, the contribution of positive and negative affect in favouring job perceptions and attitudes has been empirically confirmed in many studies. For example, previous studies found that affective experiences at work are positively related to job satisfaction both in non-teaching occupations (e.g., Grandey, Tam, & Brauburger, 2002; Thoresen, Kaplan, Barsky, Warren, & de Charmont, 2003) and among teachers as well (e.g., Moè, Pazzaglia, & Ronconi, 2010; Burić et al., 2018; Brackett, Palomera, Mojsa-Kaja, Reyes, & Salovey, 2010; Lavy & Eshet, 2018).

1.3. Teacher enthusiasm: the interplay of self-efficacy, positive affect, and job satisfaction

Following the propositions of the broaden-and-build theory (Fredrickson, 2001; 2004), positive emotional experiences broaden person's momentary thought-action repertories and build enduring personal resources which in turn enhances well-being, adaptive functioning and future positive emotional experiences. More precisely, experience of positive emotions promotes novel and creative actions and ideas, which enhances the development of physical, intellectual, social, and psychological resources that may improve the odds of successful coping and survival. Therefore, it can be expected that teachers who frequently experience positive emotions and other affective experiences at work have greater opportunities for building their personal resources (such as self-efficacy or positive job-related attitudes) by becoming more creative, knowledgeable, and resilient, which is, then, reflected in their elevated levels of enthusiasm. More specifically, teachers with greater personal resources (i.e., teachers who have higher self-efficacy beliefs and have more positive attitudes towards their job), would be more likely to experience and behave enthusiastically.

Indeed, studies found that job satisfaction relates to experienced teaching enthusiasm (e.g. Dotters-Katz, Hargett, Zaas, & Criscione-Schreiber, 2016; Richter et al., 2013; Taxer & Frenzel, 2018), enthusiasm for the subject (Kunter et al., 2011), as well as to displayed enthusiasm (Taxer & Frenzel, 2018). In addition, there is empirical evidence supporting the positive association between TE and self-efficacy beliefs (e.g., Decker, Kunter, & Voss, 2015; Kunter et al., 2011; Salanova, Llorens, & Scahufeli, 2011; Taxer & Frenzel, 2018), while other studies found no such association (e.g., Lazarides, Buchholz, & Rubach, 2018; Praetorius et al., 2017). In conclusion, the theoretical considerations outlined above, as well as available research findings, suggest that teachers' affective, motivational, and well-being factors might be involved in a complex interplay while shaping TE. In other words, teachers' positive affective experiences seem not only to directly relate to TE, but also indirectly by favouring their self-efficacy and job satisfaction levels.

1.4. The present study

The aim of this study is to explore the interplay of teachers' positive affective experiences, self-efficacy beliefs, and job satisfaction in explaining experienced TE. Most of the previous research has considered these three predictors of experienced TE separately and based on cross-sectional designs. Here, for the first time, they are being considered for their inter-relationships in a study based on a longitudinal design with two measurement occasions involving a sample of Croatian high school teachers. Compared to their colleagues from other countries, Croatian teachers have higher levels of education (i.e., 92% of teachers hold a university degree), but share similar levels of job satisfaction, self-efficacy, and opportunities for professional training and development (Markočić Dekanić, Markuš Sandrić, & Gregurović, 2019). However, most Croatian teachers feel that their profession is underpaid and undervalued in today's society (Slišković, Burić, & Macuka, 2017; Markočić Dekanić et al., 2019) which may be reflected in their job satisfaction and enthusiasm.

In addition, in this study, we focus on teachers' affective experiences (i.e., positive affect), instead of specific emotions. Affect can be considered as the superordinate category which involves relatively quick good-bad discriminations and encompasses different states such as stress responses, emotions, moods, and impulses (Gross & Thompson, 2007; Scherer, 1984). On contrary, emotion is best conceptualized as multi-component response tendencies (e.g., subjective experience, facial expressions, physiological changes, etc.) that begin with an individual's appraisal of the personal meaning of some antecedent event (Scherer, 2005). Nonetheless, positive emotions share the function of internal signals to approach or continue with other positive affective states (Fredrickson, 2001), implying that the effects of positive emotions (as proposed by the broaden-and-build theory and previous research on teachers' emotions) and more general positive affective experiences (as assessed in this study) may be quite similar in relation to teachers' self-efficacy, job satisfaction, and enthusiasm.

Based on the literature review and theoretical propositions outlined in the introduction, we hypothesized that:

H1. The higher the teachers' positive affect the higher their levels of self-efficacy and job satisfaction at subsequent assessment;

H2. Teachers' positive affect, self-efficacy, and satisfaction are positively related to experienced TE;

H3. Teachers' positive affect is related to experienced TE both directly and indirectly by shaping self-efficacy and job satisfaction levels.

2. Method

2.1. Participants

A total of 536 (402 female) Croatian high-school teachers, employed in 43 state schools, participated in a follow-up study with a time lag of approximately six months. At the first measurement point, teachers were on average 42.61 years old ($SD = 10.37$) and had 15.25 years ($SD = 10.20$) of teaching experience. Teachers taught a whole range of school subjects (e.g. Croatian language, foreign languages, mathematics, physics, chemistry, history, geography, etc.). Approximately half of them (i.e., 49%) were employed in high-schools offering vocational programs, and the other half (i.e., 51%) in high-schools offering grammar programs. At the second measurement point, there were 191 (143 female) teachers left with a mean age of 42.98 years ($SD = 10.01$) and

with an average of 16.14 years of in-service teaching experience ($SD = 9.86$).

2.2. Measures

2.2.1. Positive affect

Teachers' positive affect experienced at work was measured with the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). PANAS measures both positive and negative affect. The Positive Affect scale contains 10 adjectives describing positive affective states ("enthusiastic", "interested", "determined", "excited", "inspired", "alert", "active", "strong", "proud", "attentive"), while the Negative Affect scale contains 10 adjectives that pertain to negative affective states ("scared", "afraid", "upset", distressed", "jittery", "nervous", "ashamed", "guilty", "irritable", "hostile"). Teachers were instructed to rate the extent to which they felt in a described way at their work, during the past week, on a 5-point scale ranging from 1 (very slightly or not at all) to 5 (extremely). For the purposes of the present study, only data on teachers' positive affect was used.

2.2.2. Self-efficacy

Teachers' self-efficacy beliefs were assessed by Teacher Self-Efficacy Scale (TSES; Schwarzer, Schmitz, & Daytner, 1999) which contains 10 items aimed to measure teachers' self-efficacy in various domains of teachers' job (e.g., job accomplishment, skill development, interactions with students, parents, and colleagues, and coping with job stress). Teachers rated their level of agreement with each item on a 4-point scale ranging from 1 (not at all true) to 4 (exactly true). An example item is: "I am convinced that I am able to successfully teach all relevant subject content to even the most difficult students".

2.2.3. Job satisfaction

To measure teachers' satisfaction with their job, the Job Satisfaction Scale (Judge, Thoresen, Bono, & Patton, 2001) was used. This scale contains 5 items that assesses an overall satisfaction with one's job. Teachers rated their level of agreement on a 7-point scale ranging from 1 (completely disagree) to 7 (completely agree). An example item is: "I feel fairly satisfied with my present job".

2.2.4. Experienced teacher enthusiasm

To measure experienced enthusiasm while teaching, 5 items from the Teacher Enthusiasm Scale (Kunter et al., 2011) were used. Teachers were instructed to rate each item on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). An example item is: "I teach with great enthusiasm."

Cronbach alpha coefficients of all scales administered at each measurement point are displayed in Table 1.

2.3. Procedure

The present study was a part of a larger research project on teachers' emotions and emotion regulation and was approved by the Ethical Committee at the university of the first author. The study was conducted after the informed consents of the participant teachers, as well as the school principals, were obtained. Participation in the study was voluntarily and anonymous and responses of teachers collected at two time points were paired based on a specially created codes known only to the teachers. Teachers did not receive any kind of monetary compensation for the participation.

At both time points, the paper-and-pencil questionnaires were sent to schools via postal service. School psychologists, who were engaged in the study as assistants of the research team, received a small monetary compensation for their efforts. They introduced the aim of the study to the teachers and distributed the questionnaires to all teachers working in their school. Teachers were allowed to fill in the questionnaires at school or at home within a single week period. After completion, teachers returned the questionnaires, each in its own closed envelope, to school psychologists, who then sent them back to the research team again via postal service. In total, 920 questionnaires were distributed to teachers at the first measurement occasion, thus making a response rate close to 58% (i.e., 536 teachers who returned the filled in questionnaires). At the first time point (Spring 2016), positive affect, self-efficacy, and job satisfaction were measured. At the second time point (Autumn 2016), experienced enthusiasm was additionally assessed.

Table 1
Descriptive statistics and correlation coefficients between study variables.

	1.	2.	3.	4.	5.	6.	7.
1. Positive affect T1	–	.48	.58	.68	.49	.58	.59
2. Self-efficacy T1		–	.46	.32	.65	.28	.40
3. Job satisfaction T1			–	.44	.36	.72	.60
4. Positive affect T2				–	.54	.61	.65
5. Self-efficacy T2					–	.44	.59
6. Job satisfaction T2						–	.62
7. Experienced enthusiasm T2							–
M	3.66	3.35	3.97	3.81	3.32	3.99	4.18
Range	1–5	1–4	1–7	1–5	1–4	1–7	1–5
SD	.64	.40	.63	.62	.42	.64	.59
Cronbach α	.88	.84	.84	.89	.87	.85	.89

Note. All correlations were statistically significant at $p < .001$. T1 = Time 1; T2 = Time 2: after 6 months.

Due to a relatively high drop-out rate at the second assessment point (i.e., 64%), a non-response analysis was conducted. Teachers who participated in the study at both time points and those who dropped out, were compared on variables assessed at the first measurement occasion (i.e., years of teaching experience, positive emotions, self-efficacy, and job satisfaction) by a series of t-tests. The results showed that teachers who participated in the study at both time points, experienced higher levels of positive affect at work, $t(534) = 2.05$, $p = .04$. However, this effect was the only one that reached statistical significance and was quite small (Cohen $d = 0.17$), and, thus, unlikely to bias the main results. Thus, it was decided to handle the missing data from the second assessment point by the full information maximum likelihood procedure (FIML; Enders, 2010) by specifying the variances of exogenous variables in the model in order to make their distributional assumptions (Muthén & Muthén, 2012). FIML is considered to be an appropriate method to manage missing data in longitudinal studies (Jeličič, Phelps, & Lerner, 2009) even with moderate amount of missing data (Schlomer, Baumen, & Card, 2010).

2.4. Data analyses

As a preliminary step, Pearson correlation coefficients were calculated between teachers' sex, age, years of teaching experience, and the main study variables. Second, to establish the associations from positive affect to self-efficacy and job satisfaction, as well as from positive affect, self-efficacy, and job satisfaction to TE, a cross-lagged analysis was employed. A series of four models (see Fig. 1) were hypothesized and tested: 1) a stability model (implies only autoregressive effects); 2) a causal model (in addition to autoregressive effects, it contains cross-lagged effects of positive affect on self-efficacy and job satisfaction); 3) a reverse causal model (in addition to autoregressive effects, implies cross-lagged effects of self-efficacy and job satisfaction on positive affect); and 4) a reciprocal model (represents a combination of models 2 and 3).

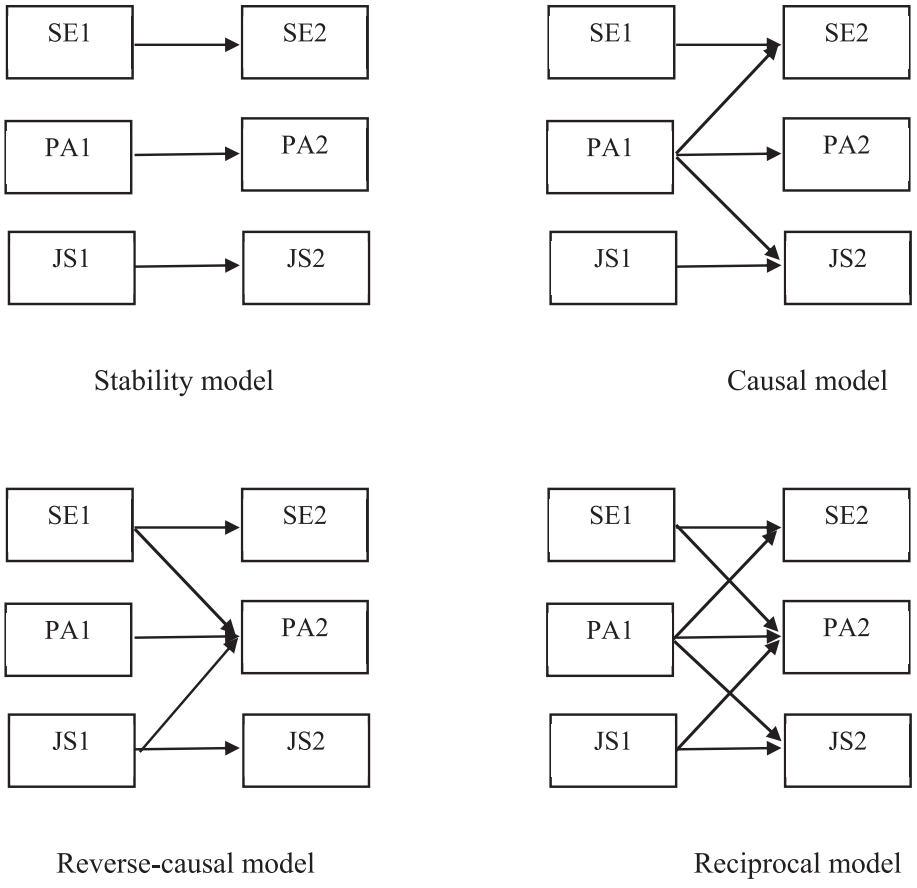

Fig. 1. Tested cross-lagged models (PA = positive affect, SE = self-efficacy, JS = job satisfaction).

Finally, to examine the explanatory power of teachers' positive affect, self-efficacy, and job satisfaction in relation to TE, an additional model in which TE assessed at Time 2 was regressed on positive affect, self-efficacy, and job satisfaction measured at both occasions, was tested. Positive affect, self-efficacy, and job satisfaction were hypothesized to correlate within the same time point in all models.

Third, to test the mediating role of teachers' self-efficacy and job satisfaction in explaining the relationship between positive affect and enthusiasm (i.e., to calculate indirect effects of positive affect on enthusiasm via self-efficacy and job satisfaction), a path analysis was conducted. More precisely, two competing models were specified and tested: 1) a full mediation model (i.e., TE at Time 2 was regressed on self-efficacy and job satisfaction also at Time 2, which were, in turn, regressed on teachers' positive affect at Time 1), and 2) a partial mediation model which, besides the paths specified in the full mediation model, additionally contains a direct path from positive affect at Time 1 to TE at Time 2. Lastly, to test for statistical significance of indirect effects of positive affect on TE via self-efficacy and job satisfaction, a bootstrap option was utilized ($n = 2000$) and bias-corrected confidence intervals were calculated (Hayes, 2009).

All analyses were conducted with Mplus 8 software (Muthén & Muthén, 2012). The parameters in the models were estimated by maximum likelihood (ML) algorithm, while missing data, as already mentioned, were compensated by the full information maximum likelihood (FIML) procedure (Enders, 2010). To evaluate the model fit in the cross-lagged analysis, the following indices were used: comparative fit index (CFI), Tucker-Lewis index (TLI), root-mean-square error of approximation (RMSEA), and standardized root-mean-square-residual (SRMR). CFI and TLI equal or higher than 0.95, RMSEA equal or lower than 0.06, and SRMR equal or lower than 0.08 indicate an excellent fit of the model (Hu & Bentler, 1998). To choose the best fitting model, ΔCFI was calculated. If ΔCFI calculated for two competing models exceeds the value of 0.01, the model with the higher CFI is preferred (Chen, 2007). For the comparison of full and partial mediation model, Akaike information criteria (AIC) and Bayesian information criteria (BIC) were used – the smaller the AIC and BIC values, the better the fit.

3. Results

3.1. Preliminary analyses

The correlation matrix of all assessed variables is presented in Table 1. Since teachers' sex, age, and years of teaching experience were unrelated to the main study variables ($p > .05$), these correlation coefficients were omitted from Table 1. It could be observed that the correlations between teachers' positive affect, self-efficacy, job satisfaction, and TE were positive in direction and moderate to high in size (Cohen, 1988). The higher the teachers' positive affect, the higher their self-efficacy beliefs, job satisfaction, and experienced enthusiasm. This pattern of associations was consistent within each time point of data collection, as well as across time.

3.2. Comparison among the cross-lagged models

The results of the test of specified cross-lagged models are shown in Table 2. Compared to the stability model, both the causal and reciprocal models showed superior fit to the data (ΔCFI = 0.043

Table 2
Fit of the tested cross-lagged models.

Model	χ^2 (df)	CFI	TLI	RMSEA (90% C.I.)	SRMR
Stability	31.54(6)**	.946	.892	.089 (.060, .121)	.110
Causal	9.04(4)	.989	.968	.048 (.000, .091)	.040
Reverse causal	26.45(4)**	.952	.857	.102 (.067, .141)	.091
Reciprocal	6.54(2)*	.990	.942	.065 (.013, .124)	.050
Causal + TE	9.2(4)	.991	.960	.049 (.000, .092)	.035

Note. *$p < .05$, **$p < .01$ TE = Teacher enthusiasm.

and ΔCFI = 0.044, respectively). However, the same claim does not hold for the reverse causal model (ΔCFI = 0.006). In addition, a comparison of the two best fitting models (i.e., causal and reciprocal), resulted in a non-significant difference in data fit (ΔCFI = 0.001), implying that the more parsimonious model, that is, the causal model, should be preferred. Moreover, the paths from self-efficacy and job satisfaction to positive affect specified in the reciprocal model, failed to reach statistical significance. To conclude, the current data showed that teachers' positive affect precedes self-efficacy and job satisfaction in time. At last, introducing TE assessed at Time 2 in the causal model resulted in an excellent fit too (see last line in Table 2).

Fig. 2 depicts the final cross-lagged model. As can be seen, teachers' positive affect measured at Time 1 was positively related to teachers' self-efficacy and job satisfaction measured at Time 2 ($\beta = 0.21$, $p < .001$ and $\beta = 0.23$, $p < .001$, respectively). Furthermore, self-efficacy and positive affect were positively related to TE only when measured at the same time point (i.e., the second) ($\beta = 0.33$, $p < .001$ and $\beta = 0.28$, $p < .001$, respectively). On contrary, job satisfaction was not related to TE when measured at the same time point. Teacher job satisfaction reported at Time 1 was positively related to the TE reported six months later ($\beta = 0.32$, $p < .001$).

3.3. The mediating role of self-efficacy and job satisfaction

Comparison of the full and partial mediation models revealed the lower AIC and BIC values (5803.225 and 5862.806, respectively) of the partial mediation model when contrasted to the same values obtained in the test of full mediation model (AIC = 5810.209 and BIC = 5865.534). These results imply the greater suitability of the partial mediation hypothesis.

As can be seen in Fig. 3, positive affect was positively related to self-efficacy ($\beta = 0.51$, $p < .001$) and job satisfaction ($\beta = 0.55$, $p < .001$), which were, in turn, positively related to the TE ($\beta = 0.30$, $p < .001$ and $\beta = 0.38$, $p < .001$, respectively). However, positive affect was also directly related to the TE ($\beta = 0.24$, $p < .001$). Both

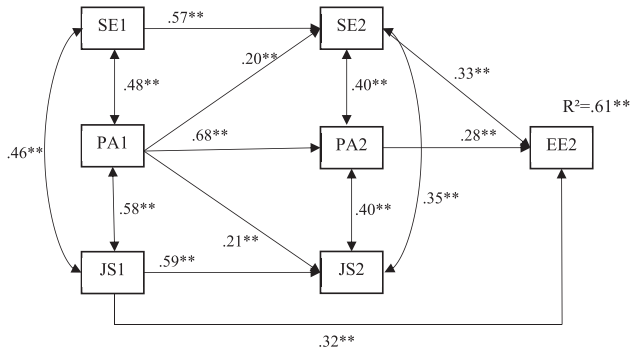

Fig. 2. Final model (PA = positive affect, SE = self-efficacy, JS = job satisfaction, EE = experienced enthusiasm; T1 = Time 1; T2 = Time 2: after 6 months; *$p < .05$, ***$p < .001$).

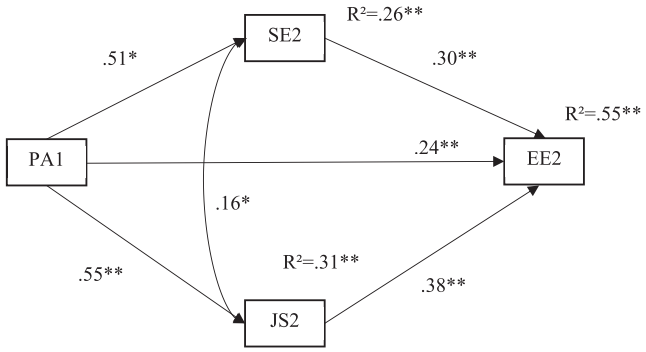

Fig. 3. Full mediation model (PA = positive affect, SE = self-efficacy, JS = job satisfaction, EE = experienced enthusiasm; T1 = Time 1; T2 = Time 2: after 6 months; *$p < .05$, ***$p < .001$).

Table 3
Test of indirect relationships. TE = Teacher enthusiasm.

	Unstandardized estimate	95% C.I.	99% C.I.
Total	.166	.110, .229	.095, .247
Positive affect to TE via self-efficacy	.070	.035, .116	.025, .135
Positive affect to TE via job satisfaction	.096	.051, .149	.033, .164

indirect effects were statistically significant as can be seen in Table 3. In conclusion, current results indicate that the relationship between teacher positive affect and TE is partially mediated by their self-efficacy and job satisfaction levels.

4. Discussion

Teacher enthusiasm is a key feature of effective teaching (Keller et al., 2016). Research has confirmed the benefits of enthusiastic way of delivering information both for students (e.g., Brigham et al., 1992; Frenzel et al., 2009; Patrick et al., 2000) and teachers themselves (e.g., Kunter et al., 2011). TE can be seen as a way through which teachers show their motivation to teach and their desire for students' learning, but also their enjoyment and passion for teaching (Moè, 2016). However, in spite of recognized significance of TE for both teachers themselves and their students, the existing research has focused much less on how various affective, motivational, and well-being factors stimulate teachers to feel and behave enthusiastically.

To deepen our knowledge on the interplay of factors that are important for shaping TE, this study examined the reciprocal relations among teachers' positive affect, self-efficacy, and job satisfaction in shaping experienced TE. The first goal was to examine the role of teachers' positive affect, which is expected to positively predict both self-efficacy and job satisfaction. Secondly, we hypothesized that higher levels of positive affect, self-efficacy, and job satisfaction will contribute to higher levels of experienced TE. In addition, we expected that positive affect will be positively related to experienced TE also by enhancing teachers' self-efficacy beliefs and job satisfaction.

Following the propositions of social-cognitive theory (Bandura, 1997; 2001; 2009), positive affective experiences, which accompany successful mastering of a certain situation or a task, promote the perceptions of capability and self-efficacy by filtering and interpreting mood-congruent information (Kavanagh & Bower, 1985). Indeed, the results of our study suggest that positive affect

experienced at work is an antecedent of teachers' self-efficacy rather than its consequence, which is in line with previous research showing that experimental induction of emotional states may change the levels of self-efficacy (Medrano et al., 2016). Regardless the possible underlying causal mechanism, this study once again confirmed the close relationship between teachers' self-efficacy and affective experiences found in previous cross-sectional studies (e.g., Burić et al., 2018; Burić & Frenzel, 2019; Frenzel et al., 2016). Next, the affective events theory (Weiss & Beal, 2005; Weiss & Cropanzano, 1996) suggests that social environment generates events that lead to affective reactions among organizational members. These reactions in turn shape the members' and the organizational' attitudes such as job satisfaction (Weiss & Cropanzano, 1996). Our results revealed that teachers' positive affect positively predicted job satisfaction over time, thus supporting both the theoretical propositions and previous research (e.g., Burić et al., 2018; Lavy & Eshet, 2018).

As expected, positive affective experiences were positively related to experienced TE. In recent conceptualizations and empirical tests of TE and its associations, the experienced component of this affective-motivational construct was considered as teaching-related enjoyment (e.g., Frenzel et al., 2009; Frenzel et al., 2018). However, some authors suggest that experienced TE is more than enjoyment since it is usually followed by higher activation levels (Shaver et al., 1987) and includes other affective aspects such as pleasure and involvement (Kunter et al., 2011). Due to conceptual similarity between experienced TE and positive affect as assessed in this study, positive relationship between these two constructs is not surprising. In addition, our results confirmed the expectation regarding the positive relationship of teachers' self-efficacy and job satisfaction with experienced TE, which is in line with previous research. For instance, Taxer and Frenzel (2018) found that authentically enthusiastic teachers (i.e., those who experience positive emotions during teaching and also show an enthusiastic behaviour) have higher levels of teaching self-efficacy and job satisfaction as well as lower levels of negative emotions than inauthentic ones, even more in high school than in primary school.

Lastly, findings from this research emphasized the crucial role of teachers' positive affective experiences in promoting experienced TE, which can unfold both directly and indirectly by shaping their self-efficacy and job satisfaction levels. Teachers who experience more positive affect at work also report higher levels of experienced enthusiasm, self-efficacy, and job satisfaction. In turn, perceiving to be able to successfully manage the challenging situations and feeling satisfied with the teaching job are factors that may promote experienced TE. As suggested by the broaden-and-build theory (Frederickson, 2001), positive affective experiences broaden personal thought-action repertories and build enduring personal resources, which in turn promotes adaptive functioning and future emotional experiences. Therefore, positive affect experienced at work helps teachers to build their sense of efficacy and to develop positive work-related attitudes (i.e., their personal enduring resources), which in turn are related to higher likelihood of experiencing and displaying enthusiasm while teaching.

The results of our study once again emphasized the importance of recognizing the role of teachers' affect in understanding experienced TE. As already said, teachers are sometimes confronted with difficulties while attempting to maintain their enthusiasm even when facing setbacks or dealing with disengaged students. In such circumstances, teachers need to invest substantial amount of effort to upregulate their positive affect, which can be costly and lead to the depletion of personal resources or even to burnout (Grandey, 2000; Hargreaves, 1998). However, if teachers have more opportunities for positive affective experiences, it is less likely that their resources would be jeopardized and more likely that their enthusiasm would be preserved.

4.1. Educational implications

This study showed that experienced TE is shaped by the interplay of positive affective experiences, job satisfaction, and self-efficacy and that positive affect is related to experienced TE both directly and indirectly through self-efficacy and job satisfaction. Hence, these results suggest that in order to favour TE, the best strategy might be to act mainly by favouring positive affect which will positively reflect not only on TE, but also on teachers' self-efficacy and job satisfaction levels. Moreover, efforts should be made to promote authentic enthusiasm since, this way, enjoyment, pleasure, and excitement can be naturally projected into the enthusiastic teaching behaviour (e.g., Frenzel et al., 2009). Therefore, interventions for in-service teachers and pre-service teacher trainings should include strategies to favour their positive affective experiences.

There are several ways to reach this goal in teacher education programs and among in-service teachers. First, basic teachers' psychological needs for competence, autonomy, and relatedness (Ryan & Deci, 2017) should be nurtured through ensuring environments characterized by low levels of perceived external control (e.g. time pressure, deadlines, lack of choices or meaning in tasks that need to be done), clear expectations, and supportive relationships. Second, teachers could be trained to implement emotion regulation strategies that could sustain their positive emotional experiences. For instance, there is empirical evidence showing that teachers' positive emotions are positively related to reappraisal and active situation modification (Burić, Penezić, & Sorić, 2017; Burić, Slišković, & Penezić, 2019), the two emotion regulation strategies that could have beneficial effects on teachers' emotional well-being.

Promoting adaptive emotion regulation among teachers could be done in many ways such as: (a) by fostering incremental beliefs on malleable character of emotion (e.g., previous research found that people endorsing incremental beliefs succeed better in regulating their emotions; Tamir, John, Srivastava, & Gross, 2007); b) through self-compassion trainings in which teachers' self-acceptance and non-judgemental attitudes are being promoted, thus favouring emotion regulation (Jazaieri et al., 2014); or c) through devising a specific emotion regulation training. The most common emotion regulation training is the Affect Regulation Training (ART; Berking & Withley, 2014) which is a transdiagnostic intervention that includes behavioural, self-compassion, and mindfulness-based interventions, as well as problem-solving and emotion-focused therapies, aimed at enhancing emotion regulation skills. A typical training begins with an outline of mechanisms, functions, and origins of emotional reactions and with informing clients about 'vicious cycles' and ways to interrupt them, through relaxation, acceptance of emotion, non-judgmental attitudes, identification of causes for the emotions felt, and active modification. The effectiveness of these techniques was confirmed in a range of contexts and with different populations including teachers (for reviews see Fried, 2011; Sutton et al., 2009).

Third, self-efficacy beliefs could be favoured in order to positively affect TE. This could be done by ensuring opportunities for success in different classroom and teaching situations (Bandura, 2001). In sum, creating a socially supportive and well-functioning work community, which will favour positive teachers' affective experiences, as well as higher levels of self-efficacy beliefs and job satisfaction, is advisable in order to promote TE.

4.2. Limitations

To the best of our knowledge, this is the first time that the interplay of three factors (i.e., positive affect, self-efficacy, and job satisfaction) is studied jointly for its relations with experienced TE and in a follow-up study. However, some limitations must be acknowledged. First, even though positive affect, self-efficacy, and job satisfaction were measured at both time points, which enabled us to test the possible temporal ordering of these constructs, data on TE was available only at the second time point. Future studies should be based on a full panel design with at least three time points in order to provide deeper insight into possible underlying causal mechanisms of the interrelationships between teachers' affective, motivational, and well-being factors in shaping TE.

Second, our data was based exclusively on self-report method. Even though this is an effective way to assess experienced TE on large samples of teachers (Keller et al., 2016, for a review), the self-report method is often burdened with social desirability or a tendency to link the responses to recalled experiences rather than to *in situ* experiences (i.e., recalling a lesson can be different than actually delivering it). Future studies should ensure asking teachers to report their enthusiasm, sense of efficacy, and job satisfaction right after or right before the lessons in order to raise the accuracy of teachers' reports. In addition, future studies should include responses from students to acknowledge their own behaviour in classroom as well as their perceptions of teacher behaviour.

Third, participants answered to the questionnaires on a voluntary basis. Therefore, it is possible that less enthusiastic and less satisfied teachers or teachers with lower levels of self-efficacy and positive affect chose not to enrol in the study at all, which could lead to a range restrictions and biased estimates. Next, even though the dropout rate from first to second measurement point was pretty high (i.e. 64%), it seems unlikely that it could seriously confound the validity of the obtained results considering the results of the non-response analysis and the estimation abilities of Mplus in handling the missing data. Nonetheless, future studies could improve the methodology of data collection by gathering them during collective sessions and staff meetings and directly by researchers (instead of school psychologists) in order to raise an overall response rate. In addition, different measurement occasions could be allocated within the same school year to minimize the occurrence of events related to summer break (e.g., moving to another school before next school year) or heightened levels of enthusiasm and positive attitudes at the beginning of a school year, which may had influenced the results.

Furthermore, we explored the interplay of the three factors, namely positive affect, self-efficacy, and job satisfaction, but other aspects could shape these relations too and favour TE. For instance, support received from colleagues or the school principal, as well as family-school relationships could matter. Good relationships should favour job satisfaction, positive affect, and the impression of being capable, that is, self-efficacy, which should in turn promote enthusiasm. Lastly, since this study was conducted on a convenience sample of Croatian high school teachers whose working conditions and experiences may differ from those of teachers from other cultures and contexts, additional research involving samples that are more diverse is needed to obtain conclusions that are more generalizable. Future studies should include teachers who teach at different educational levels (e.g., primary school or middle-school) and with different levels of teaching experience in order to confirm the robustness of the present findings. For instance, expert teachers could have higher levels of self-efficacy, which may result in higher job satisfaction and more positive affect. On opposite, novices could be more enthusiastic but also have inferior levels of self-efficacy due to their lack of experience. In other words, self-efficacy could be differently linked with TE in novices when compared to experts.

5. Conclusions

This study showed that teachers' positive affect predicts teachers' self-efficacy and job satisfaction, which, in turn, and in addition to positive affect, shape experienced TE. First, these results add to the literature some important inputs about factors shaping experienced TE, considering not only a single factor at a time (e.g., only positive affect or self-efficacy *per se*), but also their interrelationships. Secondly, they emphasize the importance of promoting teachers' positive affective experiences at work due to its wide range of relationships with other important outcomes. The current study clearly shows that positive affect not only shapes enthusiasm, but also raises important occupational aspects such as self-efficacy and job satisfaction. Future studies could test the effectiveness of interventions focused on enhancing teachers' positive affect in order to raise their self-efficacy, job satisfaction, and experienced enthusiasm.

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Declaration of competing interest

The authors declare that they have no conflict of interest.

CRediT authorship contribution statement

Irena Burić: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing - original draft, Writing - review & editing. **Angelica Moè:** Writing - original draft, Writing - review & editing.

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