



Fostering teachers' resilience and well-being through professional learning: effects from a training programme

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Received: 29 January 2019 / Accepted: 22 July 2019 / Published online: 6 August 2019
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Abstract

Resilience can be fostered amongst teachers in order to sustain their well-being and commitment to quality education. This study examined the effects of a training programme focused on resilience and well-being, targeting in-service Portuguese teachers. This paper reports a study using a quasi-experimental design involving 59 teachers (35 in two experimental groups and 24 in a control group). The effects of the professional learning programme were assessed using the following measures: motivation, global resilience, commitment to the profession, self-efficacy, school support, positive and negative experiences, work well-being, and work meaning. The experimental group participated in an 18-hour professional learning programme. Results showed the effects of the professional learning programme over all the variables, with the exception of Teacher Commitment to the Profession and School Support. These findings contribute to the growing body of research conceptualising teacher resilience as a multidimensional construct and have implications for teacher professional learning programmes.

Keywords Resilience · Teacher professional learning · Teacher well-being · Resilience programme

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Introduction

In recent years, scholars and researchers in the field of education have conceptualised resilience from a social ecological view. In this approach, resilience is described as a dynamic interaction between teachers' internal assets (inner calling, efficacy and commitment) and the external contexts in which they work and live (Gu 2014), where a combination of cognitive and emotional capacities and contextual factors interact over time (Day et al. 2007; Gu 2014; Hong 2012; Mansfield et al. 2016). As a corollary, resilience is conceived as the capacity of teachers to be resilient over a career, in different contexts and in times of change. Resilience is also conceptualised as a process (Mansfield et al. 2016) in the sense that it can be fostered amongst teachers in order to sustain their well-being and commitment to quality education (Day et al. 2007). Moreover, it can be nurtured through initial and in-service professional learning. Thirdly, resilience is an outcome of successful adaptation to adversity that manifests itself through professional growth, commitment, enthusiasm, satisfaction and well-being (Beltman 2015; Zautra et al. 2009). In summary, resilience can be understood as a multidimensional psychological construct, which is socially constructed. It refers to an adaptive functioning (Bowles et al. 2016; Hong 2012) and development in situations where challenge and adversity are present, entailing purpose and meaningful actions (Gu and Day 2007). The most common formal processes that have been found to foster teacher resilience include professional learning workshops and mentoring by more experienced teachers (Richter et al. 2013; Smith and Ingersoll 2004).

Providing a contribution to the existing literature on teacher's professional development and learning, this article reports the effects of a learning training programme on teachers' resilience and well-being.

Resilience, well-being, commitment and self-efficacy

The literature suggests that commitment, resilience and efficacy are associated with continuity in the profession, and that the support provided by the school (colleagues, leadership) is a key factor for quality retention (Arnup and Bowles 2016; Day and Gu 2009; Gu 2018) and for sustaining on-going commitment to the profession (Beltman et al. 2018; Day et al. 2007; Day and Gu 2014; Flores 2018; Gu 2017; Peixoto et al. 2018). Resilience is a predictor of job satisfaction and well-being amongst teachers, and can act as a protective factor for negative costs of the teaching profession (Pretsch et al. 2012). A number of studies have shown that resilience correlates positively with teachers' well-being and the well-being indicators have a direct and strong correlation with the indicators of resilience (Brouskeli et al. 2018; Pretsch et al. 2012; Svence and Majors 2015).

Self-efficacy has an important effect on teachers' motivation and commitment (Bandura 1997) and we can find a close relationship between resilience and self-efficacy concepts (Benard 2004). Research has shown that higher levels of personal and professional efficacy are related to resilience and teachers' self-efficacy

beliefs influence their enthusiasm and commitment to teaching (Tschannen-Moran and Woolfolk Hoy 2001). Higher levels of resilience empower teachers to overcome stressful working conditions and can help teachers to avoid negative consequences associated with workplace stressors (Gu and Day 2007; Richards et al. 2016).

According to Luthar (2006), 'Resilience rests, fundamentally, on relationships' (p. 780). The role that sustainable and mutually rewarding relationships play in the development of teachers' resilience has been addressed by several studies (Greenfield 2015; Gu and Day 2013; Le Cornu 2013; Mansfield et al. 2014). Jordan's (2006) model of relational resilience suggests that resilience resides not in the individual but in the capacity for establishing work-based relationships with leaders, colleagues and students, and through this empowering them to build and develop their capacities to be resilient.

A sense of belonging to a collegial staff community and the existence of a supportive and collaborative culture in sustaining teachers' commitment is well documented (Flores and Day 2006; Peters and Pearce 2012). Studies identified a range of factors that can foster teacher resilience. These include school leadership support (Peters and Pearce 2012), staff collegiality, positive and supportive good relationships (Day 2008; Day et al. 2007) and collaborative networks (Fantilli and McDougall 2009; Flores and Day 2006).

Fostering teachers' resilience through professional learning

Resilience is seen as a construct that can be nurtured and developed (e.g. Beltman et al. 2018; Mansfield et al. 2016; Yonezawa et al. 2011). To foster teachers' resilience, Benard (2003) suggests that they need professional development opportunities, resources and materials, caring collegial relationships, high expectations on the part of school leaders, and opportunities for shared decision-making and planning. Teachers' resilience should be nurtured and supported within the school and the school board plays an important role in building and sustaining resilience (e.g. Day and Hong 2016; Leroux 2018). Many studies suggest that teacher education programmes have a key role to play in preparing teachers for the challenges they face, for example, by developing their skills in collaboration, problem-solving and managing stress (Mansfield et al. 2014; Silva et al. 2018). Developing a broader range of skills and strategies, along with curriculum and pedagogical knowledge, enables teachers to feel better equipped to 'meet the challenges' of their work. Opportunities for professional development (Greenfield 2015) can be both formal (i.e. training workshops) and informal (i.e. seeking advice from a more experienced colleague). The relevance of the professional learning and the existence of communities of practice are emphasised in some studies highlighting their contribution for teachers' resilience and well-being (Clarà 2017; Raider-Roth et al. 2012).

Purpose of the study and rationale of the professional learning programme

The professional learning programme called "Positive Education" is adapted from the European programme ENTREE (ENhancing Teachers RESilience in

Europe—<http://entree-project.eu/en/>; Silva et al. 2018) and aimed to foster resilience and well-being amongst school teachers. It comprises six training modules adapted from the ENTREE programme: 1—Resilience; 2—Building Relationships; 3—Emotional Well-Being; 4—Stress Management; 5—Effective Teaching; 6—Classroom Management, and a new module was added named “Education for well-being”. One of the researchers, who is a teacher and has experience in teacher training, was responsible for training the teachers who participated in the study. Whilst conceptualising the training programme, the school, the teacher and peer learning activities were taken into account, attending to the reciprocal influences of these three systems into the professional learning of each trainee. Teachers brought their experiences and beliefs into their teaching and learning. This systemic approach is also linked, in a way:

- To the ecological view of promoting resilience in teachers, a construct developed throughout all the modules of the programme, since it served as the guiding principle of all of them, but especially in the specific module entitled “Resilience”;
- As well as in the “well-being” of the teacher construct, especially developed in the nuclear module “Education for well-being”.

The methodology followed sought to take into account the characteristics of a good teacher training programme (e.g. Darling-Hammond 2006; Korthagen 2011), namely:

- *Coherence* between theory, practice and strategies presented;
- *Grounded curriculum* the training was structured in a dynamic modular organisation, in which the nuclear module (Education for well-being) was the framework of all the others and with which all interrelated;
- *Extension of the practical experiences* the programme was based and adjusted to the real experiences and needs of the trainees, through interactive dynamics;
- *Training approach based on case studies* teachers were encouraged to work and discuss their own cases, in a logic of overcoming challenges, through an individual or joint reflection, contextualised to their practices and beliefs;
- *Partnerships between Universities and schools* the training came from the partnership between University and the school where the training took place (middle and secondary school), but attended by teachers from various schools of the municipality and of various levels of education.

The study presented here has two main goals: first to analyse the effects of the professional learning programme “Positive Education” on variables related to resilience and well-being and, second, to analyse if the time when the training occurs has impact on teachers’ outcomes. It is expected that variables related to resilience (e.g. resilience, self-efficacy, motivation) and well-being (e.g. well-being, emotions/feelings, work meaning) would increase for teachers who participated in the programme, because the modules directly or indirectly targeted those constructs. Taking into account that the professional learning programme was realised in two different time periods (first and third term) of the school year, we can hypothesise that

Table 1 Frequencies and mean values for each group on gender, cycle of studies taught, age and years of teaching

	Gender		Cycle of studies taught			School far from home	Age	Years of teaching
	Female	Male	1st cycle	2nd 3rd cycle	Secondary			
EG1	13	4	5	5	7	3	53.9	28.6
EG2	15	3	8	3	7	2	48.4	24.3
CG	18	6	9	7	8	3	51.5	26.9

Note: *EG1* experimental group 1, *EG2* experimental group 2, *CG* control group

the effects would be stronger for those who participated in the programme in the first term, because the third term is usually a time period with higher workload and more stressful for teachers.

Method

Participants

The study used a quasi-experimental design, with pre- and post-test and a control group. Participants were 59 Portuguese teachers (35 in two experimental groups: EG1 = 17, EG2 = 18; and 24 in the control group—CG) from primary (22), 2nd and/or 3rd Cycle (15), and Secondary Education¹ (22). From those, 46 were females, age ranged from 36 to 63 years old ($M = 51.3$, $SD = 7.7$), and years of teaching ranged from 6 to 40 years ($M = 26.6$, $SD = 8.7$). Almost all teachers taught in schools close to their residence (86.4%). The distribution of these variables by the three groups (Table 1) is not significantly different, Gender: $\chi^2(2) = .447$, $p = .800$, Cycle of Studies taught: $\chi^2(4) = 1.494$, $p = .828$, School far from Home: $\chi^2(2) = .357$, $p = .836$, Age: $F(2,56) = 136.2$, $p = .102$, Years of Teaching: $F(2,54) = 82.4$, $p = .339$.

Measures

The effects of the professional learning programme were assessed using the following measures: Motivation, Resilience, Self-Efficacy, Commitment to the Profession, School Support, Positive and Negative Experiences (SPANE), Work Meaning and Well-being (UWES).

¹ In the Portuguese School System, Basic Education comprises three cycles of studies: the First Cycle or Primary School includes the first four grades, the 2nd Cycle comprises the 5th and 6th grades, and the 3rd Cycle covers from 7th to 9th grade. Secondary Education comprises three school years, from 10th to 12th grade. In the Portuguese Education System in Primary School, one teacher is assigned to each class teaching all subjects, whereas from 2nd Cycle students have one teacher for each school subject

Resilience

Teachers' resilience was assessed through the scale proposed by Morgan (2011), comprising nine items assessing how teachers deal with obstacles in school (e.g. "Feeling certain that things will come right even if there are serious problems in school"). Cronbach's alpha were .90 and .93, respectively, for pre- and post-test.

Motivation

To assess motivation, we used the items of the motivational dimension from the Multidimensional Teachers Resilience Scale (Peixoto et al. 2019). This is an eight-item measure assessing the level of teachers' motivation (e.g. "I like challenges in my work"). Cronbach's alpha was .68 in the pre-test and .83 in the post-test.

Self-efficacy

Teachers' self-efficacy was assessed using the measure proposed by Morgan (2011), which comprises eight items grouped in two dimensions: Teaching Self-Efficacy (TSE, five items, e.g. "How confident you feel: Explaining difficult material in ways that the children will understand it") and Behaviour Management Self-Efficacy (BMSE, three items, e.g. "How confident you feel: Helping children focus on learning tasks and avoid distractions"). Cronbach's alpha of .79 in pre-test and .89 in post-test for TSE, .83 and .89 for BMSE, and .86 and .93 for the global score.

Teacher commitment to the profession (TCP)

TCP was assessed by the three-item measure proposed by Skaalvik and Skaalvik (2011), (e.g. "If I could choose a job now I would not choose to be a teacher"). All the items were recoded in order that higher scores mean higher levels of commitment. This measure showed very good reliability both in pre- and post-test ($\alpha = .91$ and $\alpha = .90$).

School support (SS)

SS is a four-item measure adapted from Morgan (2011) assessing teachers' perception about the support that they feel from colleagues at school (e.g. "When something goes wrong, I can talk to some of the other teachers"). Reliability was very good both in pre- ($\alpha = .90$) and post-test ($\alpha = .92$).

Scale of positive and negative experience (SPANE)

SPANE is a 12-item questionnaire (Diener et al. 2010) assessing the positive and negative (6 items each) affects experienced in the last 2–3 weeks (e.g. "In the last 2 or 3 weeks I felt happy", "In the last 2 or 3 weeks I was sad"). Cronbach's alpha was .95 in pre-test and .94 in post-test for the positive feelings and .87 and .88 for negative feelings.

Work meaning (WM)

WM was assessed through 3 items from the meaning/calling scale of the spiritual leadership inquiry (Fry et al. 2005). The items ask about the sense that one's work is meaningful and makes a difference in people's life (e.g. "The work I do is meaningful to me"). In pre-test, Cronbach's alpha was .75 and, in post-test, .83.

Well-being

To assess well-being at work, we used the 9-item version of the *Utrecht Work Engagement Scale* (UWES-9; Schaufeli et al. 2006). The items ask participants about the vigour, dedication and absorption that they feel at work (e.g. "At my work, I feel bursting with energy", "My job inspires me", "I am immersed in my work"). Cronbach's alpha was .90 and .93, respectively, in pre- and post-test.

All measures were answered on a five-point Likert scale from "Strongly Disagree" to "Strongly Agree", excepting for Resilience and Self-Efficacy (from "Not confident at all" to "Absolutely confident") and Affect and Well-being (from "Never" to "Very Frequently").

Procedure

Teachers were enrolled in the programme through a presentation session of the programme to the teachers' community of schools in one municipality of the Lisbon region. At the end of this session, teachers who were interested in attending the training programme filled a form and were contacted to participate in the programme being included in the EG1. Teachers from the CG were contacted by email in order to fill the questionnaires and were offered the possibility to participate in the programme after the end of the EG1 sessions. Some of the participants in the control group were then enrolled in the EG2. The experimental groups participated in the 18-h professional learning programme, distributed by nine sessions of 2 h each, once a week. The participants in EG1 and EG2 filled the questionnaires before the starting of the programme and in the week after the end of the sessions. The CG participants filled the questionnaires at the same time as the participants in the EG1. All the participants filled the questionnaires online.

Data analysis

Data were analysed carrying out repeated measures ANOVAs or MANOVAs on the mean values of the measures used and on the relative gains in each measure. Effect sizes were assessed using partial Eta squared. Relative gains were computed using the following formula:

$$(\text{Post-Test Ratio} - \text{Pre-Test Ratio}) / (1 - \text{Pre-Test Ratio}).$$

Table 2 Variables means and standard deviations for each group in pre- and post-test

	Pre-test			Post-test		
	EG1	EG2	CG	EG1	EG2	CG
	<i>M</i> (SD)	<i>M</i> (SD)	<i>M</i> (SD)	<i>M</i> (SD)	<i>M</i> (SD)	<i>M</i> (SD)
Resilience	3.54 (.427)	3.62 (.502)	3.51 (.693)	4.24 (.356)	3.93 (.317)	3.48 (.604)
Motivation	4.15 (.370)	4.22 (.355)	4.18 (.334)	4.49 (.368)	4.43 (.359)	4.00 (.312)
TSE global	3.81 (.453)	3.94 (.466)	3.79 (.473)	4.39 (.502)	4.24 (.438)	3.71 (.587)
TSE teaching	3.84 (.393)	4.06 (.514)	4.03 (.538)	4.37 (.512)	4.33 (.443)	3.90 (.641)
TSE behaviour management	3.74 (.622)	3.79 (.589)	3.59 (.584)	4.38 (.567)	4.15 (.563)	3.58 (.633)
School support	3.97 (.579)	4.00 (.569)	3.50 (.638)	4.27 (.589)	4.32 (.534)	3.51 (.640)
Commitment	3.71 (1.301)	3.44 (.878)	3.64 (1.191)	4.02 (.845)	3.74 (.719)	3.57 (1.169)
Work well-being	3.82 (.700)	3.72 (.612)	3.63 (.600)	4.31 (.445)	4.14 (.442)	3.51 (.667)
Positive experiences	3.84 (.847)	3.55 (.596)	3.71 (.913)	4.33 (.604)	4.09 (.409)	3.47 (.889)
Negative experiences	2.28 (.825)	1.93 (.698)	1.94 (.929)	1.17 (.204)	1.61 (.439)	2.01 (.891)
Work meaning	4.14 (.624)	4.02 (.588)	4.15 (.840)	4.57 (.575)	4.43 (.534)	3.99 (.837)

Note: *TSE* teacher self-efficacy, *EG1* experimental group 1, *EG2* experimental group 2, *CG* control group

The Pre- and Post-Test Ratios were computed dividing each individual score by the maximum score possible in the measure considered (e.g. the maximum possible for the Resilience measure was 5).

Results

Table 2 presents the scores of each group in the pre-test and the post-test.

Repeated measures ANOVA analysis on resilience showed a main effect of time, $F(1,56)=23.7$, $p<.001$, $\eta_p^2=.297$, and an interaction effect between time and group, $F(2,56)=10.3$, $p<.001$, $\eta_p^2=.269$. The interaction effect between time and group is due to an increase in resilience levels by the two experimental groups between pre- and post-test, which does not happen for the CG (Fig. 1A).

In relation to motivation, the repeated measures ANOVA showed the same main effect of time, $F(1,56)=6.159$, $p=.016$, $\eta_p^2=.099$, and the interaction effect between time and group, $F(2,56)=10.9$, $p<.001$, $\eta_p^2=.281$. As in the case of resilience, both experimental groups increased the motivational levels from pre- to post-test, whereas teachers from the CG showed a slightly decrease (Fig. 1B).

For self-efficacy, the same effects of time and the interaction between time and group were registered both for the global measure, $F(1,56)=20.96$, $p<.001$, $\eta_p^2=.272$ for time, $F(2,56)=11.199$, $p<.001$, $\eta_p^2=.286$ for the interaction effect, and for the two dimensions: Teacher Self-efficacy $F(1,56)=11.721$, $p=.001$, $\eta_p^2=.173$, for time, $F(2,56)=8.799$, $p<.001$, $\eta_p^2=.239$, for the interaction effect, and Behaviour Management Self-Efficacy, $F(1,56)=23.865$, $p<.001$, $\eta_p^2=.299$, for time, $F(1,56)=20.96$, $p<.001$, $\eta_p^2=.272$. Both the two experimental groups

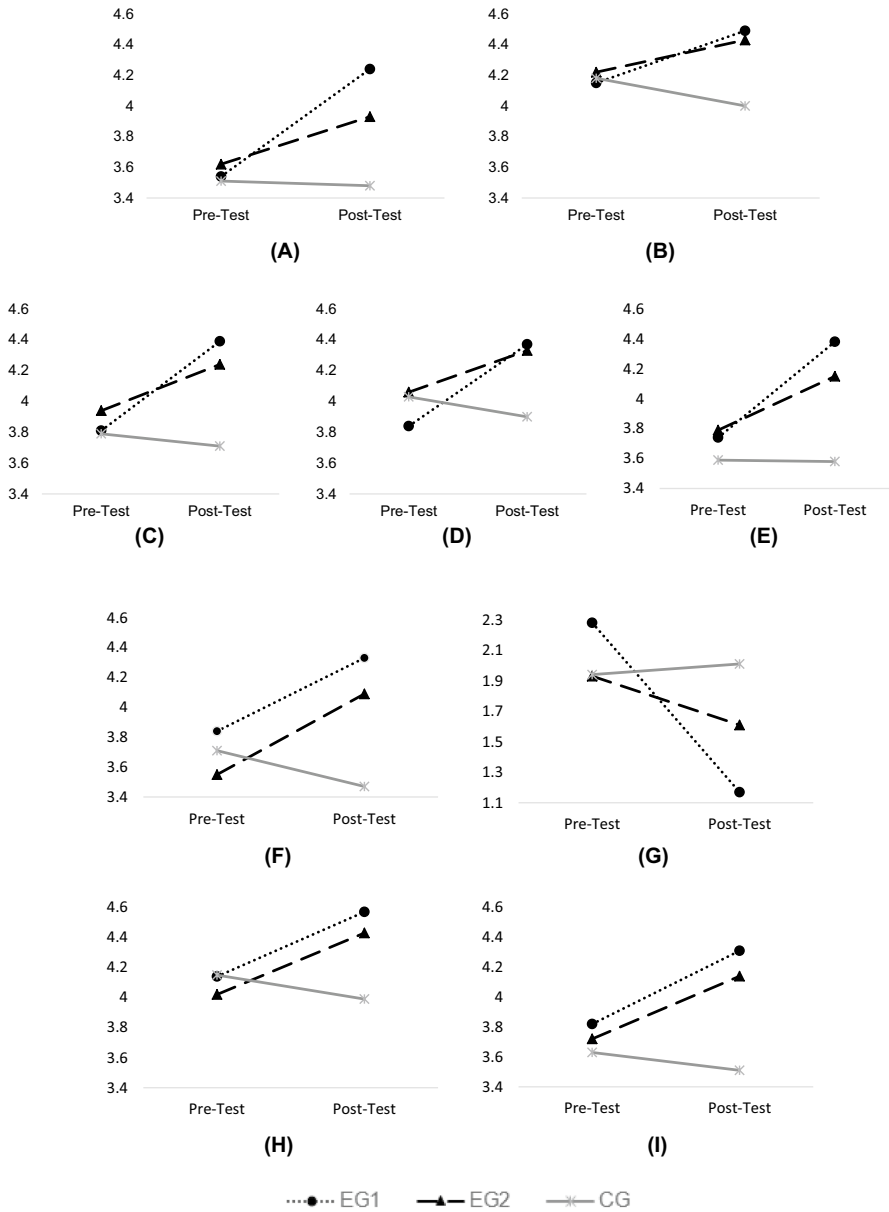


Fig. 1 Interaction effects Time x Group. *EG1* experimental group 1, *EG2* experimental group 2, *CG* control group. **A** Resilience, **B** Motivation, **C** Self-Efficacy Global, **D** Self-Efficacy Teaching, **E** Self-Efficacy Behaviour Management, **F** Positive Feelings, **G** Negative Feelings, **H** Work Meaning, **I** Work Well-Being

showed an increase in self-efficacy from pre- to post-test (Fig. 1C, D, E). Despite the slightly higher values presented by both the two experimental groups in the pre-test for Behaviour Management Self-Efficacy (Table 2, Fig. 1E), the difference between them and the CG is not significantly different, $F(1,56)=1.396$, $p=.256$, $\eta_p^2=.047$, HSD $p=.349$.

Teacher Commitment to the Profession and School Support seem not be affected by the training programme, $F(1,56)=3.95$, $p=.052$, $\eta_p^2=.066$ for time and $F(2, 56)=2.11$, $p=.131$, $\eta_p^2=.070$ for the interaction effect for Teacher Commitment to the Profession, $F(2, 56)=1.89$, $p=.161$, $\eta_p^2=.063$ for the interaction effect in School Support. Nevertheless, School Support showed an effect of time, $F(1,56)=7.48$, $p=.008$, $\eta_p^2=.118$ which can be attributed to the slight increase of the two experimental groups, taking into account that the control group showed identical values in pre- and post-test assessments as regards to School Support perception. Moreover, in the pre-test the two experimental groups showed higher levels of School Support perception than the CG, $F(2,56)=1.68$, $p=.013$, $\eta_p^2=.143$, HSD $p=.043$ for the comparison between CG and EG1, HSD $p=.027$ for the comparison between CG and EG2.

The training programme seems to affect the experience of positive and negative feelings. The MANOVA analysis showed effects of time, $F(2,55)=8.03$, $p=.001$, $\eta_p^2=.226$, and an interaction effect between time and group, $F(4, 112)=7.11$, $p<.001$, $\eta_p^2=.202$. The univariate analyses showed effects of time for both the positive, $F(1,56)=7.49$, $p=.008$, $\eta_p^2=.118$, and negative feelings, $F(1,56)=15.9$, $p<.001$, $\eta_p^2=.221$. As well the interaction effect also affects the positive, $F(2,56)=7.7$, $p=.001$, $\eta_p^2=.216$, and the negative feelings, $F(2,56)=9.44$, $p<.001$, $\eta_p^2=.252$. For the positive feelings both the two experimental groups showed an increase between the pre- and the post-test (Fig. 1F), whereas the negative feelings decreased between the two assessment points for both groups (Fig. 1G).

With regard to Work Meaning, again the ANOVA analysis showed an effect of time, $F(1,56)=9.56$, $p=.003$, $\eta_p^2=.146$, and the interaction effect between time and group, $F(2,56)=8.07$, $p=.001$, $\eta_p^2=.224$. The interaction effect shows that EG1 and EG2 increased the scores of Work Meaning, whereas the CG decreased (Fig. 1, H).

The ANOVA analysis on Work Well-Being showed, again, an effect of time, $F(1,56)=13.9$, $p<.001$, $\eta_p^2=.199$, and an interaction effect between time and group, $F(2,56)=8.28$, $p=.001$, $\eta_p^2=.228$. As for the previous variables, the two experimental groups increased their levels of well-being between the pre- and the post-test, which did not happen for the CG (Fig. 1I).

Regarding the second goal of the study we carried out ANOVAs or MANOVAs on the relative gains for each measure, considering only the two experimental groups. The results of these analyses showed differences in the relative gains, between the two experimental groups, for Resilience, $F(1,33)=5.43$, $p=.026$, $\eta_p^2=.141$, and for the feelings experienced, $F(1,33)=7.21$, $p=.011$, $\eta_p^2=.179$. The univariate tests on the feelings experienced showed that the difference appears in the negative feelings, $F(1,33)=8.30$, $p=.007$, $\eta_p^2=.201$. We can also take into account marginally significant effects on the global measure of Self-Efficacy, $F(1,33)=3.22$, $p=.082$, $\eta_p^2=.089$, and on Teaching Self-Efficacy, $F(1,33)=3.05$, $p=.090$, $\eta_p^2=.085$. In all these variables the EG1 showed higher relative gains than EG2 (Fig. 2). Because the

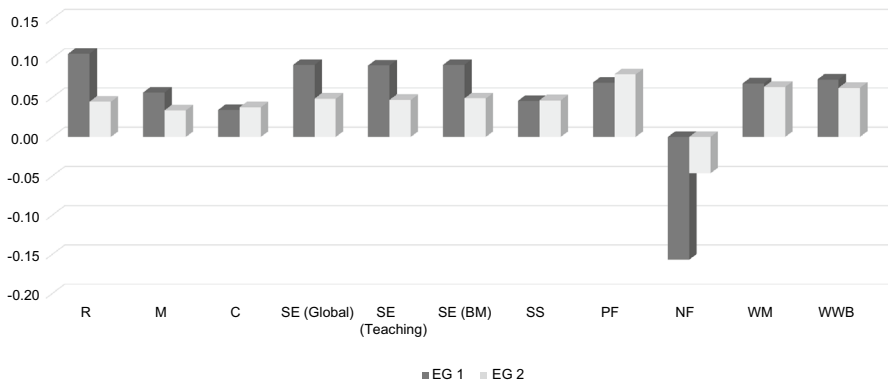


Fig. 2 Relative gains for EG1 and EG2. *EG1* experimental group 1, *EG2* experimental group 2. *R* resilience, *M* motivation, *C* commitment, *SE* self-efficacy, *BM* behaviour management, *SS* school support, *PF* positive feelings, *NF* negative feelings, *WM* work meaning, *WWB* work well-being

attendance rate can impact on the results, we compared the attendance rate between the experimental groups. Differences between them were not significant, $M_{EG1} = .78$, $SD_{EG1} = .16$, $M_{EG2} = .85$, $SD_{EG2} = .14$, $F(1,33) = 2.14$, $p = .153$, $\eta_p^2 = .061$.

Discussion

Literature and empirical data point out that professional competences are an important personal protective factor enhancing teacher resilience (e.g. Leroux and Théorêt 2014). The present study sought to contribute to a growing body of research implicating the importance of teacher resilience and well-being by evaluating the efficacy of a theoretically based training fostering teacher professional development. The main findings showed the effects of the professional learning programme over all the variables, with the exception of Teacher Commitment to the Profession and the perception of School Support.

Regarding resilience and motivation, both experimental groups showed increased resilience and motivational levels at the end of the training programme. As stated previously, higher levels of resilience empower teachers to overcome stressful working conditions (Gu and Day 2007) and resilience can help teachers to avoid negative consequences associated with workplace stressors.

The increase in self-efficacy from pre- to post-test for both experimental groups, in particular on teacher's self-efficacy beliefs about behaviour management, is in line with literature that suggests a close relationship between resilience and self-efficacy (Benard 2004; Peixoto et al. 2018). Furthermore, this increase in self-efficacy beliefs about behaviour management is an interesting and promising finding taking into account that some research pointed to self-beliefs about classroom management as a potential risk factor for teachers (Beltman et al. 2011; Gu and Day 2013). Moreover, self-efficacy is shown to have an important effect on teachers' motivation (Bandura 1997; Corkin et al. 2018). These results bring evidence about the connection

between resilience, self-efficacy and motivation, as well as highlight the importance of motivation as a personal resource that feeds resilience (Flores and Day 2006; Gu and Day 2007; Mansfield et al. 2016).

Research on resilience calls attention to the internal resources (motivational and affective) that people can mobilise when facing stressful events (Schwarze and Wosnitza 2018). Evidence from empirical data shows that experiencing and expressing positive emotions is related to well-being, quality of life, altruism, having more effective conflict resolution skills, greater resistance to adversity and coping (Burns et al. 2008; Cohen et al. 2006; Fredrickson et al. 2003; Lyubomirsky et al. 2005). Moreover, research shows that resilience as a dispositional tendency to experience positive emotions could act as a counterpart to negative emotional experiences (Pretsch et al. 2012) and that individuals with high emotional competence effectively manage their feelings, handle stress, confront failure with optimism and persist in the face of difficulty (Tait 2008). Thus, the positive effect of the programme in the affective experiences of the participants with an increase of positive experiences and a significant decrease of negative feelings is an important outcome of the programme.

Whilst these personal assets (self-efficacy, motivation, positive experiences) are necessary, they are not sufficient. To be resilient also requires combinations of individual and collective support from school leadership, colleagues, friends and families (Day et al. 2007; Flores and Day 2006; Peters and Pearce 2012). However, our findings showed that School Support seems not be affected by the training programme. As argued, at pre-test the two experimental groups showed higher levels of School Support, which might explain this pattern of results. Despite having a module directed to the construction of positive relationships, the effects will take some time to be observable. Furthermore, literature suggests that organisational features like school leadership play a central role by creating a supportive environment for individuals' professional learning and development and fostering a collective sense of efficacy and resilience (Gu and Day 2013). In this sense, and as it has already been stressed, resilience is not only a matter of individual assets but also depends on the contextual factors surrounding the person and the interplay between personal resources and contextual factors (Day et al. 2007; Gu 2014; Hong 2012; Mansfield et al. 2016; Peixoto et al. 2018).

Greenfield (2015) argues that actions such as problem-solving, reflection and reframing are the key to sustain teachers' commitment, and experienced teachers can enhance this process through modelling and training. However, results showed that commitment to the profession did not improved significantly in the teachers who attended the learning programme. Notwithstanding its contradiction with some research suggesting resilience as a quality that enables teachers to maintain their commitment to teaching (Brunetti 2006), or as an outcome of resilience (Mansfield et al. 2016), this finding is in line with previous research showing that the factors related to resilience and commitment are different (Peixoto et al. 2017). Furthermore, as for school support, commitment initial levels were high, which could also explain the lack of programme effects.

Several studies have shown that resilience correlates positively with teachers' well-being and the well-being indicators have a direct and strong correlation with the

indicators of resilience (Brouskeli et al. 2018; Flook et al. 2013; Svence and Majors 2015). Measures used to assess effects on well-being variables showed that the two experimental groups increased well-being levels between pre- and post-test, and this result validates data from previous studies (e.g. Ebersöhn et al. 2015). Despite the positive impact of the intervention regardless of the time period of the school year (first and third term), the results also suggest the negative consequences of the third term on teacher's well-being given the difference between the two experimental groups on negative emotions and resilience. The programme was not enough to compensate for the possible work burden increase of that period. A special consideration to contextual cues must then be present in the future to adjust the intervention. One such adjustment can be the reinforcement of the education for well-being module in periods of increased work stress. Short positive activities such as the ones involved in the education for well-being module can alleviate negative emotions and reinforce resilience in teachers by increasing subjective and psychological well-being and reducing depressive symptoms (Bolier et al. 2013). Furthermore, motivation and effort or personal preferences about the specific activities adopted can also moderate the effect of positive interventions (Proyer et al. 2015) and can explain the differences between the two groups.

Limitations

Despite the positive results of the professional learning programme “Positive Education”, some limitations should be acknowledged. The study used a quasi-experimental design with teachers participating on a voluntary basis. This could introduce some bias in the results due to the difference in teachers' motivation in the experimental and control groups. Nevertheless, as we showed, experimental groups did not differ significantly from the control group in socio-demographic and background variables and present identical levels, in the pre-test, on the variables assessed to evaluate the effects of the programme. A limitation to the effects of the programme was the fact that this was a “one-size fits all” intervention and that could have limited the strength of the intervention. It has been suggested that personalisation and tailoring interventions to individual needs could enhance their effectiveness, since different people do have specific preferences for different strategies and exercises (Proyer et al. 2015).

Implications

Findings from this research may have important implications for teacher professional learning, namely the call for a reconceptualisation that seeks to both improve positive indicators of teacher functioning (e.g. self-efficacy) whilst mitigating the well-known threats to well-being (i.e. stress) (Cook et al. 2017) and the need to see resilience as a personal resource that buffers the effects of the challenges of the teaching profession (Pretsch et al. 2012).

This study supports and strengthens the importance of professional learning programmes as a strategy for teachers' development and learning and the use of active methodologies as facilitators of the trainees' participation (Avalos 2011; Ping et al. 2018). The successful implementation of "Positive Education" as a training programme to foster teacher's resilience can be justified by the use of strategies seeking to achieve professional learning through the development of questioning and critical skills, using interactive, reflexive and collaborative learning strategies.

These findings have several implications. Firstly, they contribute to the growing body of research that conceptualises teacher resilience as a multidimensional construct and reinforces the socio-ecological perspective of resilience (Mansfield et al. 2014; Rutter 2006). Despite the predominance of individual factors as programme effects, the results of this training programme emphasise the contribution of motivation, self-efficacy and resilience to teacher development and well-being. Secondly, this study also has implications for teacher professional learning, as teachers can be empowered by this programme, enabling them to re-frame their practices in order to continue to teach effectively. In a context of greater accountability and performativity and the current crisis, both nationally and internationally, in relation to teacher recruitment and retention (e.g. Gu and Day, 2007; Peters and Pearce 2012), this study draws attention to the importance of including the multidimensional perspective of resilience on teacher initial training, as well as to a school-based policy via training programmes that capacitate the personal resilience of teachers and help them to adapt to adversity. Research suggests that resilience building may play an integral part in keeping teachers in the profession (Gu and Day 2013). Initial and in-service teacher education programmes may consider including these modules and strategies as a process of protecting and promoting teacher resilience and through these contribute to well-being and 'quality retention' of teachers (Day et al. 2007).

Future research is needed to address other factors (e.g. context) fostering teachers' resilience and well-being through professional learning. The importance of factors associated with context (Ainsworth and Oldfield 2019) rather than individual characteristics (self-efficacy, motivation, positive experiences) when predicting adaptation in teachers should be addressed in future research as a way to avoid the tendency towards the "hyper-individualisation" view of resilience (Johnson and Down 2013). Partnerships between researchers, teachers and school leaders can be useful platforms for collaborative design of school-based interventions for supporting teacher resilience (Ebersöhn et al. 2015). Pathways to foster resilience amongst in-service teachers will require a commitment from teacher education schools to develop research that influences teacher and school leaderships (Theron 2018) to recognise that resilience leads to positive adaptation in the form of higher levels of well-being and lower levels of burnout (Beltman 2015).

Acknowledgements This work is funded by CIE – ISPA, Research Centre on Education - ISPA projects UID/CED/04853/2013 and UID/CED/04853/2016, through national funds of Fundação para a Ciência e Tecnologia (FCT/MCES-PT). The authors would like to thank Professor Susan Beltman for her helpful comments on an earlier version of this paper.

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