Check for updates

Received: 7 January 2024 | Accepted: 26 March 2024

DOI: 10.1111/aphw.12544

ORIGINAL ARTICLE

The effectiveness of a positive psychological intervention for promoting preschool teachers' well-being and professional competence: EASP intervention program

Alfred S. Y. Lee[1,2] | **Wing Kai Fung**[3] | **Derwin K. C. Chan**[2,4] | **Kevin Kien Hoa Chung**[2,4]

[1]Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, Hong Kong

[2]Centre for Child and Family Science, The Education University of Hong Kong, Hong Kong

[3]Early Childhood, School of Education, Liverpool Hope University, Liverpool, UK

[4]Department of Early Childhood Education, The Education University of Hong Kong, Hong Kong

Correspondence
Wing Kai Fung, Early Childhood, School of Education, Liverpool Hope University, Liverpool, UK.
Email: fungw@hope.ac.uk

Funding information
The work is supported by the Faculty of Education and Human Development, The Education University of Hong Kong, under the Strategic Area 7: Positive Education in Early Childhood Grant [1-F241-S9–02337] awarded to Kevin Kien Hoa Chung, Department of Early Childhood Education, The Education University of Hong Kong.

Abstract

The present study investigated the effectiveness of the Early Advancement in Social–Emotional Health and Positivity (EASP) program, a positive psychological intervention promoting preschool teachers' well-being and the motivational aspect of professional competence. Participants were 273 in-service preschool teachers ($M_{age} = 34.56$ years, $SD = 9.52$, range = 22–58; female = 98.90%) who participated in a 2-month randomized controlled trial. Participants were randomly assigned to the intervention group ($n = 143$) receiving 1) four online workshops, 2) a smartphone app, and 3) an online activity, or to the wait-list control group ($n = 130$), which received the intervention materials after all the data collection. Participants reported their well-being dimensions, teaching self-efficacy, and autonomous motivation for teaching before and after the intervention. Results from a path analytic model exhibited excellent fit with the data, $\chi2 = 37.62$, $df = 33$, CFI = .99, TLI = .98, RMSEA = .02 [90% CI = 0.00, 0.05], SRMR = .02. The intervention had direct effects on changes in well-being dimensions,

This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.
© 2024 The Authors. Applied Psychology: Health and Well-Being published by John Wiley & Sons Ltd on behalf of International Association of Applied Psychology.

including positivity, outcome, strength, engagement, and resilience ($\beta = .14$ to .26, $ps = .00$ to .04), and indirect intervention effects on changes in teaching self-efficacy and autonomous motivation for teaching ($\beta = .14$ to .15, $ps = .00$ to .01). These findings highlighted the potential value of implementing positive psychological interventions in educational settings to promote the well-being and professional competence among preschool teachers.

KEYWORDS

autonomous motivation for teaching, professional competence, PROSPER, randomized controlled trial, teaching self-efficacy, well-being

INTRODUCTION

Exploring opportunities to strengthen teachers' well-being while improving the overall quality of education has increasingly received attention. One significant challenge to quality education is the high turnover rate among teachers, which can be attributed, in part, to long working hours, heavy workloads, insufficient support, and poor well-being (Grant et al., 2019). The turnover rate is particularly alarming among preschool teachers, reaching as high as 40% (Totenhagen et al., 2016). Cultivating teachers' well-being could be an effective approach to increasing teacher retention (Grant et al., 2019). Alternatively, promoting teachers' professional competence, defined as "what teachers actually need to act successfully during their professional life" (Blömeke et al., 2008, p. 720), can also enhance teaching quality (Kunter et al., 2013). Professional competence encompasses various factors, including general pedagogical content knowledge, constructivist beliefs, and motivational orientations (Kunter et al., 2013). Within the realm of motivational orientations, teaching self-efficacy and autonomous motivation for teaching are considered vital aspects of teachers' professional competence in predicting teachers' supportive teaching style, students' well-being, and overall quality of education (Kunter et al., 2013; Tschannen-Moran & Hoy, 2001). Yet, research on interventions focusing on teachers' well-being has seldom explored how teachers' well-being impacts their professional competence (Datu et al., 2023; Lee et al., 2023). Therefore, the present study examined the effectiveness of the Early Advancement in Social–Emotional Health and Positivity (EASP) program, a positive psychological intervention promoting preschool teachers' well-being and their motivational aspects of professional competence in Hong Kong, China.

EASP PROGRAM

The EASP program, developed based on the PROSPER framework (Noble & McGrath, 2015), is a locally derived positive psychology intervention aimed at enhancing the well-being of teachers and parents in early childhood education settings in Hong Kong. PROSPER stands for

17508054, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

positivity, relationships, outcome, strength, purpose, engagement, and resilience. These seven constructs are the core elements of PROSPER well-being. Positivity refers to positive emotions and mindsets. Relationships pertain to positive interpersonal connections. Outcome encompasses one's sense of accomplishment. Strength involves leveraging character strength to promote well-being. Purpose relates to an individual's desire to contribute to initiatives beyond oneself. Engagement entails deep absorption or immersion in specific activities. Resilience refers to the ability to bounce back from adversities. The EASP intervention provided a range of positive psychological theories and skills specifically targeting the PROSPER well-being dimensions, including self-compassion (Neff, 2003), hope theory (Snyder, 2002), flow state (Csikszentmihalyi, 2020), and positive reappraisal (Riepenhausen et al., 2022).

Compared to previous well-being interventions for teachers (Taylor et al., 2021; Witvliet et al., 2019) that focused on a limited number of dimensions (e.g., self-compassion, gratitude, and mindfulness), the present study opted for the EASP program, which takes a comprehensive approach to promoting a wide range of well-being dimensions. This program was selected considering the potential limitations of single-component interventions in cultivating protective psychological resources and facilitating self-growth (Datu et al., 2022). Notably, there has been a dearth of well-being intervention studies specifically targeting preschool teachers in Hong Kong, apart from the EASP program. The EASP intervention has been implemented and evaluated in different cohorts of teachers and parents in Hong Kong, for example, pre-service preschool teachers (Datu et al., 2023), in-service preschool teachers, international preschool teachers (Lee et al., 2023), and parents (Lee et al., 2024). The EASP program has consistently enhanced teachers' and parents' PROSPER well-being. For example, a study by Datu et al. (2022) demonstrated the positive impact of the EASP program on preschool teachers' positivity, strength, purpose, and resilience. Therefore, the EASP program possesses distinct advantages over other programs in terms of comprehensiveness, contextual relevance (preschool teachers), and cultural setting (Hong Kong), as well as its proven effectiveness in promoting the well-being of preschool teachers in Hong Kong. Previous research has indicated that positive well-being among teachers is associated with other crucial aspects of professional functioning, such as teaching self-efficacy (Zee & Koomen, 2016), motivation, and commitment (Grant et al., 2019). Building on the work from previous PROSPER-based interventions (Datu et al., 2022; Datu et al., 2023; Lee et al., 2023), the present study extended the intervention by investigating the indirect effects of the intervention on positivity, relationships, outcome, strength, purpose, engagement, and resilience that could improve teachers' professional competence.

PRESCHOOL TEACHERS' PROFESSIONAL COMPETENCE

Teachers' professional competence is a multidimensional construct that includes cognitive aspects such as professional knowledge and dynamic-affective aspects such as professional beliefs and motivational orientations (Kunter et al., 2013). Teaching self-efficacy and autonomous motivation for teaching are recognized as significant factors in the motivational dimension of teachers' professional competence (Kunter et al., 2013). Teaching self-efficacy reflects the "judgment of teachers' capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated" (Tschannen-Moran & Hoy, 2001, p. 783). Teaching self-efficacy comprises three sub-domains: student engagement (e.g., motivating students to learn), instructional strategies (e.g., implementing different assessment strategies), and classroom management (e.g., controlling disruptive behavior

17508054, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

in a classroom). According to Bandura's Self-Efficacy Theory (Bandura, 1986), there are four antecedents contributing to one's self-efficacy: mastery experience (i.e., personal experience of success), vicarious experience (i.e., seeing someone succeed), social persuasion (i.e., encouragement), and physiological arousal (i.e., positive affective and emotional states). Empirical evidence suggests that teaching self-efficacy is a fundamental factor in effective teaching and has far-reaching implications for both teachers and students (Zee & Koomen, 2016). Specifically, teaching self-efficacy is positively related to classroom processes, students' academic adjustment, and teachers' performance, professional development, and well-being (Zee & Koomen, 2016).

Motivation for teaching refers to the internal drive and commitment that inspires educators to engage in the teaching profession, deliver effective instruction, and positively impact students' learning and development (Roth et al., 2007; Ryan & Deci, 2020). The self-determination theory (SDT; Ryan & Deci, 2020) is one of the most extensively applied theories to investigate the motivation for teaching (Abós et al., 2018; Roth et al., 2007). Central to the SDT is the fundamental distinction between autonomous motivation (i.e., driven by intrinsic interests and personal value) and controlled motivation (i.e., driven by external pressures and obligations). Autonomous motivation consists of three forms of motivation: intrinsic (e.g., performing activities out of interest and enjoyment), integrated (e.g., performing activities that represent one's true sense of self), and identified regulation (e.g., performing activities for value or importance attached to its outcome). Understanding the importance of motivational aspects in the educational context, autonomous motivation for teaching generally includes intrinsic and identified regulation because the distinction between integrated and identified regulation is ambiguous, especially in self-reported scales (Abós et al., 2018; Roth et al., 2007). Meanwhile, controlled motivation is encompassed by introjected (e.g., performing activities to promote ego or avoid shame) and external regulation (e.g., performing activities to avoid punishment). Research has consistently reported the positive effects of autonomous motivation for teaching on teachers' outcomes, such as increased engagement, reduced burnout, enhanced teaching self-efficacy, and the promotion of students' autonomous motivation in learning, well-being, and academic performance (Roth et al., 2007; Ryan & Deci, 2020). According to the SDT (Ryan & Deci, 2000, 2020), autonomous motivation can be facilitated by satisfying the three basic psychological needs: autonomy (i.e., a sense of initiative and ownership in one's actions), competence (i.e., a sense that one can succeed and grow), and relatedness (i.e., a sense of belonging and connection). In the present study, we investigated the spillover effects of the PROSPER-based positive psychological intervention on professional competence. We suggest the antecedents of teaching self-efficacy and autonomous motivation for teaching competence align with the PROSPER well-being dimensions. The relationships between teachers' well-being, teaching self-efficacy, and autonomous motivation are highlighted below.

LINKS BETWEEN TEACHERS' WELL-BEING AND PROFESSIONAL COMPETENCE

According to the heuristic model from a meta-analytical study (Zee & Koomen, 2016) and the system of triadic reciprocal causality (Bandura, 1986), teachers' self-efficacy, well-being (personal factors), quality of classroom processes (behavioral and environmental factors), and students' academic adjustment (environmental factors) were suggested to be mutually influencing each other. The PROSPER well-being dimensions have included theoretical connections with

17508054, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

self-efficacy antecedents. For example, an individual's mastery experience shares common elements with outcome and engagement (Lee et al., 2023), while positive collegial relationships could facilitate the vicarious experience and social persuasion. Additionally, positivity contributes to physiological arousal (Burić & Moe, 2020; Zee & Koomen, 2016). Burić and Moe (2020)'s study also examined the reciprocal relationships between positive affect and teaching self-efficacy. They discovered teachers' positive affect at baseline predicts their prospective teaching self-efficacy after six months. However, teaching self-efficacy at baseline did not show an association with future positive effects. Similarly, Lee et al. (2023) investigated the reciprocal relations between well-being and teaching self-efficacy among preschool teachers. Their findings indicated that teaching self-efficacy at baseline positively impacted future well-being, including positive emotions, relationships, meaning, and accomplishment. Notably, only accomplishments were found to predict prospective teaching self-efficacy in the study. These findings pointed to the potential effects of teachers' well-being on teaching self-efficacy.

Teachers' autonomous motivation may equally benefit from improved well-being. Conventionally, motivation has been viewed as an inherent and proximal construct that facilitates individuals' goal-directed behaviors, and satisfying basic psychological needs may lead to higher levels of autonomous motivation and well-being (Ryan & Deci, 2000). However, recent studies have found that positivity and autonomous motivation are reciprocally related (Su et al., 2021). Studies have also revealed that personality traits, such as hope (PROSPER's strength), are determinants of individuals' autonomous motivation (Chan & Hagger, 2012). It is postulated in the job demands-resources model (Bakker & Demerouti, 2007) that job resources, including social support (PROSPER's relationship), skill variety, recognition (PROSPER's outcome), and psychological capital (PROSPER's strength and resilience), are important for the development of job motivation. Furthermore, the PROSPER dimensions exhibit theoretical overlap with the three basic psychological needs (i.e., autonomy, competence, and relatedness) in SDT. For example, PROSPER's purpose and engagement share similar characteristics (e.g., engaging in personally meaningful activities) with SDT's autonomy need (Ryan & Deci, 2020). PROSPER's outcome and resilience are proposed to be linked to SDT's competence need (e.g., experiencing mastery and thriving in the face of adversity; Ryan & Deci, 2020), whereas the PROSPER dimension of relationship directly corresponds to the SDT's relatedness need. Empirical evidence showing these conceptual links supports the probable impacts of teachers' well-being on autonomous motivation (Su et al., 2021). Together, this study explored the effects of a well-being intervention on the motivational aspects of professional competence (i.e., teaching self-efficacy and autonomous motivation) among Hong Kong preschool teachers.

THE PRESENT STUDY

The present study examined the effectiveness of the EASP program on fostering preschool teachers' PROSPER well-being dimensions directly and professional competence indirectly. Based on the previous PROSPER-based interventions (Datu et al., 2022; Datu et al., 2023; Lee et al., 2023), we first hypothesized that the intervention would have positive and significant effects on participants' PROSPER well-being dimensions. Secondly, drawing on the support of previous literature (Burić & Moe, 2020; Lee et al., 2023; Zee & Koomen, 2016), we hypothesized that the intervention would also promote teachers' professional competencies in teaching self-efficacy and autonomous motivation for teaching practices mediating through the enhancement of teachers' well-being.

17508054, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

METHOD

Participants

Participants were recruited via social media advertisements (i.e., Facebook and Instagram). Teachers were eligible for inclusion in the present study if they were (1) in-service preschool teachers in Hong Kong and (2) regular smartphone users. A power analysis was conducted using the root mean square error of approximation (RMSEA) approach to determine the necessary sample size for the structural equation modeling (SEM). With a power of 80% ($\beta = .80$; $\alpha = .05$), RMSEA smaller than .08, and a degree of freedom ranging from 30 to 50, a minimum sample size of 229 was determined. Accounting for an estimated attrition rate of 10%, a total of 255 participants were required to meet the minimum sample size for the present study. Finally, 273 in-service preschool teachers ($M_{age} = 34.56$ years, $SD = 9.52$, range = 22–58; female = 98.90%) signed the informed consent and participated in the present study. On average, the participants had 12.56 years ($SD = 9.51$) of teaching experience. Ethical approval was obtained from the Human Research Ethics Committee in the third author's institution [approval number = 2019-2020-0407].

Procedure

The present study was a two-month randomized controlled trial with two waves of data collection, namely the baseline and post-test survey. Eligible participants were invited to complete the baseline questionnaire. Then, participants were randomly assigned to the intervention ($n = 143$) or wait-list control ($n = 130$) group. The participants from the intervention group received four online workshops (2.5 hours long for each workshop) over two months. At the end of the second workshop, the research team briefly introduced the smartphone app "EASP" and invited the participants to use the app. A follow-up email containing information and a manual for the smartphone app, such as download links, login information, password, and app features, was sent to the intervention group. In the fourth week, participants from the intervention group were invited to complete an online activity to consolidate their knowledge and skills in positive psychology. After completing the fourth workshop, participants were invited to fill out the post-test questionnaire. The waitlist control group received the intervention materials (i.e., workshops, online activity, and smartphone app) after the post-test questionnaire. The participants' flow diagram is presented in Appendix A. Two strategies were implemented to enhance participant retention in the present study. Firstly, participants who completed both the baseline and post-test questionnaires and attended at least three workshops were rewarded with a supermarket coupon worth HKD100 (approximately USD12) and a certificate of attendance as a gesture of gratitude. Additionally, the research team proactively sent reminders via phone calls, text messages, and emails to encourage participants to complete questionnaires and attend workshops. Finally, in the intervention group, 93 (65%),10 (7%), 7 (5%), and 10 (7%) participants attended 4, 3, 2, and 1 workshops, respectively. In the control group, 45 participants (34%) attended 4 workshops, 29 participants (22%) attended 3 workshops, 10 participants (8%) attended 2 workshops, and 21 participants (17%) attended 1 workshop. Additionally, a portion of participants from both the intervention group (n = 23; 16%) and the control group (n = 25; 19%) completed only the baseline questionnaire without attending any workshops.

17580854, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Intervention materials

The intervention materials developed in the present study comprised three components: 1) four online workshops, 2) a smartphone app called "EASP", and 3) an online activity. The online workshops served as the central element of the intervention (Datu et al., 2023; Lee et al., 2023). The smartphone app was implemented as a supplementary consolidation learning activity with online workshops (Datu et al., 2023). The online activity was used to reinforce participants' positive psychological knowledge and skills during the intervention duration (Datu et al., 2022). The development of intervention materials in the app and workshops was guided by the PROSPER framework (Noble & McGrath, 2015) and previous positive psychological interventions (Datu et al., 2023; Lee et al., 2023). These materials were designed to enhance participants' well-being dimensions within the PROSPER framework.

The online workshops were delivered by an educational psychologist with extensive experience delivering PROSPER-based intervention and positive psychology modules for teachers (Datu et al., 2023; Lee et al., 2023; Lee et al., 2023; Lee et al., 2024). The four online workshops covered the PROSPER well-being dimensions. For example, lesson 1 focused on promoting participants' positivity (e.g., the introduction of self-compassion; Neff, 2003). Lesson 2, purpose (e.g., identification of personal core value; Noble & McGrath, 2015) and engagement (e.g., introduction of flow theory; Csikszentmihalyi, 2020) were the targeted well-being dimensions. Lesson 3 aimed to promote participants' strength (e.g., the introduction of hope theory; Snyder, 2002) and outcome (e.g., the introduction of strategic mindset; Chen et al., 2020), and lesson 4 aimed to cultivate relationships (e.g., reflective listening; Ryan & Deci, 2020) and resilience (e.g., positive reappraisal; Riepenhausen et al., 2022).

The smartphone app also encompassed four lessons corresponding to the four online workshops. The app had four major features: a gratitude diary, tests of positive psychological knowledge, positive psychological resources, and hypothetical scenarios. For the gratitude diary, participants were asked to record one or two grateful events they had experienced daily. The study by Witvliet et al. (2019) suggested that a gratitude diary was an effective method to support hope through increasing mindful attentiveness. Secondly, participants had the opportunity to assess their understanding of positive psychology through a combination of multiple-choice questions (e.g., "Which of the following is the correct description of strategic mindset?") and short-answer questions ("How do you incorporate self-compassion into your daily life? Please provide one to two examples for illustration purposes"). Upon completing the questions, answers with examples were provided to the participants. Participants can assess the workshops' PowerPoint slides via the app features of positive psychological resources. To assist participants in applying the positive psychological skills they learned to real-life situations, we developed four hypothetical scenarios that portray situations commonly faced by preschool teachers, such as instances where children get injured during class. At the end of each video, a voice-over prompted the participants with questions such as "What would you do if you were the teacher?" and "Please take a few minutes to reflect on these situations." Answers were then provided based on positive psychological theories (e.g., hope theory, positive reappraisal, and self-compassion), the PROSPER framework, and practical preschool guidelines were then provided.

Concerning the online activity, participants from the intervention group were encouraged to participate in a 15-minute online activity following the completion of the first two workshops. This activity consolidated the information discussed during the workshops and prepared for the subsequent two workshops. It incorporated different components, such as

17508854, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

multiple-choice questions, short-answer questions, and a gratitude diary. The detailed intervention materials are presented in Appendix B. Intervention fidelity was measured with five measures (see Appendix C).

Measures

PROSPER well-being

Positivity was measured using the 10-item positive affect subscale from the Positive and Negative Affect Schedule (Watson et al., 1988). Participants were asked to indicate the extent to which they had a certain positive feeling (e.g., "Proud" or "Inspired") over the past week on a five-point scale (1 = *Not at all*; 5 = *Extremely*). Relationships were assessed using the mutual support and trust subscale from the Teacher Collegiality Scale (Shah, 2011). Items (e.g., "Teachers provide strong social support for colleagues") were rated on a seven-point scale (1 = *Strongly disagree*; 7 = *Strongly agree*). For outcome, the 8-item personal accomplishment subscale from the Maslach Burnout Inventory (Poghosyan et al., 2009) was used. Participants rated the items (e.g., "Can easily understand students' feelings") on a seven-point scale (1 = *Never*; 7 = *Always*). Participants' strength was measured using the 3-item hope subscale from the Global Assessment of Character Strengths (McGrath, 2019). Items were rated (e.g., "It is natural and effortless for me to express my Hope strength") on a seven-point scale ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree)*. For this purpose, we adopted the 5-item presence subscale from the Meaning in Life Questionnaire (Steger et al., 2006) to measure participants' sense of presence. Participants rated each item (e.g., "My life has a clear sense of purpose") on a seven-point scale (1 = *Strongly disagree*; 7 = *Strongly agree*). Engagement was assessed using the five-item dedication subscale from the Utrecht Work Engagement Scale (Schaufeli et al., 2006). Items (e.g., "I am proud of the work that I do") were rated on a seven-point scale ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree)*. Participants' resilience was measured using the four-item managing stress subscale from the Resilience at Work Scale (Malik & Garg, 2018). Participants responded to the items (e.g., "I have developed some reliable ways to relax when I am under pressure at work") on a seven-point Likert scale (1 = *Strongly disagree*; 7 = *Strongly agree*). These scales were validated in Asian populations and have demonstrated satisfactory reliability in previous research conducted in the Hong Kong sample (Datu et al., 2022; Datu et al., 2023; Lee et al., 2023). In the present study, the Cronbach's alpha coefficients of these scales at baseline and post-test were > .85 and > .82, respectively. The *ICC* of the scales between the two-time points was > .53.

Teachers' self-efficacy

We measured teachers' self-efficacy using the 12-item Chinese version of the Teachers' Sense of Efficacy Scale (C-TSE; Tschannen-Moran & Hoy, 2001). The C-TSE consists of three subscales, specifically efficacy in student engagement (e.g., "How much can you do to motivate students who show low interest in schoolwork"), instructional strategies (e.g., "To what extent can you craft good questions for your students"), and classroom management (e.g., "How much can you do to get children to follow classroom rules"). Participants rated the items on a five-point

17508054, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Likert scale (1 = *Never*; 5 = *Always*). The Chinese version of the scale displayed good reliability (i.e., α = .83 to .95) in local research (Lee et al., 2022; Lee et al., 2023). In the present study, the internal consistencies of the subscales at baseline (α > .85) and post-test (α > .88) were satisfactory. The scale showed fair test–retest reliability (*ICC* > .54).

Autonomous motivation for teaching

We assessed participants' autonomous motivation for teaching using intrinsic (4 items; e.g., "I engage in teaching duties because I am very interested in teaching") and identified (4 items; e.g., "I engage in teaching duties because this is an important personal choice for me") subscales adapted from the motivation for teaching scales (Abós et al., 2018; Roth et al., 2007). Participants responded to the items on a five-point scale, ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree)*. The Chinese adaption of the scale displayed good reliability (i.e., α = .88 to .91) in local research (Lam et al., 2010). In this study, the subscales showed acceptable reliability at baseline ($\alpha > .74$) and post-test ($\alpha > .85$). The *ICC* of the scale between the two points was > .58.

Data analysis

For the preliminary analyses, we examined mean, standard deviations, reliability coefficients (i.e., Cronbach's alphas), skewness, kurtosis, and correlations of the study variables. A series of independent sample *t*-tests were conducted to determine if there were any significant differences in demographic information (i.e., gender, age, and teaching experience) and study variables (i.e., PROSPER well-being dimensions, autonomous motivation for teaching, and teachers' self-efficacy) between the participants who completed ($n = 204$) and those without completing ($n = 69$) the post-test survey. These preliminary analyses were conducted using SPSS v26 (IBM Corp, 2019). Secondly, we have also conducted two confirmatory factor analyses (CFA) to establish the discriminant validity of the measures using Mplus version 7.2 (Muthén & Muthén, 2017). We estimated the shared variance between the variables and the average variance extracted (AVE) for each variable within each time point. When the AVE exceeds the shared variance, discriminant validity is supported.

To test the direct and indirect intervention effects, we adopted SEM to examine the proposed model. Intervention conditions were entered as a dummy-coded variable (i.e., 0 = control and 1 = intervention) predicting the change scores of the PROSPER well-being dimensions directly and the change scores of autonomous motivation for teaching and teachers' self-efficacy indirectly, with participants' teaching experience adjusted. Standardized residual change scores were computed by regressing the post-test scores on the baseline scores for each variable (Castro-Schilo & Grimm, 2018; Lee et al., 2021). The standardized residual change scores showed more power over simple difference scores in randomized studies (Castro-Schilo & Grimm, 2018). We assessed the model fit using conventional fit indices and adopted their cut-off criteria (Hu & Bentler, 1999). Specifically, the Comparative fit index (CFI), the Tucker-Lewis Index (TLI), RMSEA, and the standardized root mean square residual (SRMR) were adopted in the present study. Models were considered to show acceptable goodness-of-fit with the data if CFI and TLI values approached or exceeded 0.90 and the RMSEA and SRMR values were below 0.08 (Hu & Bentler, 1999).

17508054, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

For missing data management, 34 and 35 participants from the intervention and control groups, respectively, were lost to follow-up and did not fill out the post-test survey, yielding a retention rate of 75%. According to the results of Little's missing completely at random (MCAR; Little & Rubin, 2019) test (i.e., $\chi 2 = 69.53$, $df = 64$, $p = .30$), there was no clear pattern in the missing data. We adopted the intention-to-treat principle, which included all participants who were originally assigned to the intervention and control groups, regardless of their completion or non-completion of the post-test survey. Hence, the full information maximum likelihood method (FIML), which computes a case-wise likelihood function using only those variables that are observed (Muthén & Muthén, 2017), was employed to handle the missing data. FIML has been considered one of the most reliable and unbiased methods for handling datasets with missing responses (Enders & Bandalos, 2001).

RESULTS

Preliminary analyses

The baseline characteristics of the intervention and wait-list control group are shown in Appendix D. Regarding the dropout analysis, the results of the independent sample *t*-tests suggested that there were no significant differences between those who dropped out and those who retained in terms of study variables, demographic information, and group assignment at baseline, $t(1, 271) = -1.65$ to 0.32, $ps = .10$ to .88, except for student engagement and instructional strategies from teachers' self-efficacy scale. Participants who dropped out from the study had significantly lower student engagement and instructional strategies at baseline than those who remained in the intervention, $t(1, 271) = -2.80$ to -2.14, $ps = .03$ to .01. The CFA models that tested the discriminant validity, showed acceptable goodness-of-fit, $\chi^2 = 2612.47$ to 2633.70, $df = 1{,}659$ to 1720, CFI > .91, TLI > .90, RMSEA < .05 [90% CI = .04, .05], SRMR < .06. The AVES of the study variables (range = .39 to .79) were higher than the share variance with others (range = .26 to .61), except for the autonomous motivation for teaching (range = .61 to .77). Descriptive statistics, including mean, standard deviations, reliability coefficients (i.e., Cronbach's alphas), skewness, kurtosis, AVE, shared variance and correlations of the study variables at baseline and post-test are presented in Appendix E. In the post-test measurement, the intervention group had significantly higher scores for positivity, outcome, engagement, resilience, instructional strategies, and intrinsic and identified motivation as compared to the control group (see Appendix F). The group changes over time for the study variables during the intervention period are presented in Appendix G.

Direct intervention effects

The proposed model displayed excellent fit to the data, $\chi 2 = 37.62$, $df = 33$, CFI = .99, TLI = .98, RMSEA = .02 [90% CI = 0.00, 0.05], SRMR = .02. The intervention had positive and significant direct effects on the increases of participants' positivity ($\beta = .18$, $p = .01$; $d = .16$), outcome ($\beta = .26$, $p < .001$; $d = .25$), strength ($\beta = .14$, $p = .04$; $d = .13$), engagement ($\beta = .14$, $p = .04$; $d = .12$), and resilience ($\beta = .18$, $p = .01$; $d = .15$). No significant intervention effects were found in relationships ($\beta = .02$, $p = .76$; $d = .02$) and purpose ($\beta = .05$, $p = .46$; $d = .04$). Regarding the relationships between PROSPER well-being and teachers'

17508854, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

self-efficacy, the changes in outcome ($\beta = .30$, $p < .001$; $d = .24$), strength ($\beta = .36$, $p < .001$; $d = .26$), and engagement ($\beta = .19$, $p = .01$; $d = .16$) significantly predicted the change in teachers' self-efficacy. Furthermore, the change scores of outcome ($\beta = .23$, $p = .01$; $d = .16$), engagement ($\beta = .18$, $p = .01$; $d = .16$), and resilience ($\beta = .32$, $p < .001$; $d = .25$) significantly predicted the change score of autonomous motivation for teaching. The proposed model and standardized parameter estimates (β) and Cohen's d for model effects are presented in Appendix H. The intervention had positive and significant indirect effects on the increase in participants' teachers' self-efficacy ($\beta = .15$, $p = .01$; $d = .17$) via outcome ($\beta = .08$, $p = .01$; $d = .16$) and strength ($\beta = .05$, $p = .04$; $d = .12$); and autonomous motivation for teaching ($\beta = .15$, $p < .001$; $d = .23$) via outcome ($\beta = .06$, $p = .04$; $d = .13$) and resilience ($\beta = .06$, $p = .02$; $d = .15$).

DISCUSSION

This study contributed to the extant literature (e.g., Datu et al., 2022; Lee et al., 2023; Lee et al., 2023) by investigating the effectiveness of a PROSPER-based (Noble & McGrath, 2015) positive psychological intervention in promoting the well-being and motivational aspect of teacher professional competence (i.e., teaching self-efficacy and autonomous motivation for teaching; Kunter et al., 2013) in a sample of Hong Kong in-service preschool teachers. The results revealed that the intervention effects on teaching self-efficacy and autonomous motivation were mediated through teachers' well-being, mainly via the dimensions of outcome, strength, and resilience. Importantly, the findings underscored teachers' well-being as the potential mechanism underlying the effects of the intervention on promoting their beliefs in a personal capacity and intrinsic motivation in relation to their daily teaching practices.

Significant intervention effects on PROSPER well-being

As expected, teachers in the intervention group exhibited improved well-being in the dimensions of positivity, outcome, strength, engagement, and resilience. Concurring with previous research (Datu et al., 2022; Datu et al., 2023), the knowledge of self-compassion (Neff, 2003) effectively promoted teachers in the intervention group to experience higher levels of positive emotions (i.e., positivity) than did those in the control group. Similarly, the increased knowledge of and practices on gratitude (Witvliet et al., 2019) and positive reappraisal (Riepenhausen et al., 2022) fostered their application of hope (i.e., strength), immersion of life (i.e., engagement) and capacity to bounce back (i.e., resilience), respectively. Contrary to the previous findings (Datu et al., 2022; Lee et al., 2023), the current intervention also yielded significant improvement in the outcome dimensions. Notably, the participating teachers were a group of experienced teachers (mean age = 34 years; mean teaching experience exceeded 12 years). Apart from daily teaching activities, these experienced teachers tended to have various administrative or management roles. Their sense of achievement (i.e., outcome) may depend more on instrumental factors such as recognition for their competencies or career promotion (Guglielmi et al., 2016). Therefore, identifying SMART goals and practices on strategic mindset (Chen et al., 2020) might help them cope with the increased workload and demand and boost their well-being dimension of outcome.

17508854, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Nonsignificant intervention effects on PROSPER well-being

Unexpectedly, the current intervention did not significantly impact participants' well-being dimensions of relationships and purpose. The nonsignificant effect of intervention on relationships was aligned with the findings of previous studies (Datu et al., 2022; Datu et al., 2023). Although Lee et al. (2023) reported a significant improvement in the relationships dimension, the study investigated changes in well-being in a sample of pre-service teachers. Given that the current sample included experienced in-service teachers from a collectivistic culture (i.e., Hong Kong) that values interpersonal relatedness, these participants, in general, were more likely to possess mature social skills and develop harmonious working relationships with their colleagues and teaching team. Thus, the intervention might be less effective in further promoting their relationships. Alternatively, the difference between the baseline scores across the groups was approaching statistical significance, with the wait-list control group demonstrating better relationships than the intervention group numerically, which might also explain the nonsignificant intervention effect on the relationships dimension. On the other hand, participants' richer experiences may have changed their drive for teaching (e.g., initially, nurturing children's learning and development; currently, seeking career advancement), which lowered their likelihood of benefiting from the intervention, highlighting the personal core value, potentially explaining the nonsignificant effect on the purpose dimensions. Nevertheless, further studies may be warranted to examine the dimensions of teachers' well-being in terms of relationships and purpose.

Indirect intervention effects on self-efficacy and autonomous motivation

Aligning with the hypotheses, the indirect intervention effects on teaching self-efficacy and autonomous motivation mediating through teachers' well-being were positive and significant. These results were consistent with recent evidence revealing the interrelationships between teachers' well-being and self-efficacy (Lee et al., 2022; Lee et al., 2023). Specifically, Lee et al. (2022) concluded that Hong Kong preschool teachers with better subjective (e.g., positive affect) and psychological well-being (e.g., accomplishment, relationships) showed higher levels of teaching self-efficacy. Lee et al. (2023) further demonstrated that teacher's accomplishment predicts their future teaching self-efficacy. The present findings concurred with the prior results (Lee et al., 2022; Lee et al., 2023) and extended to show the mediating roles of the outcome and strength dimensions by considering the PROSPER well-being framework. The present results further supported the vital role of a sense of achievement (i.e., outcome or accomplishment) in boosting teaching self-efficacy via mastery experience (Bandura, 1986). In addition to the sense of achievement, the findings also underscore the mediating role of strength, which was viewed as hope in the present study. Previous research has established a connection between hope and self-efficacy beliefs, as both are expectancy constructs closely related to each other (Snyder, 2002). Hopeful people are suggested to be resourceful (i.e., pathways) and motivated (i.e., agency) to pursue their goals, leading to enhanced self-evaluations of their own abilities (Snyder, 2002). Taken together, the outcome and strength dimensions collectively contribute to explaining the intervention's effect on teaching self-efficacy.

With the indirect intervention effects on autonomous motivation for teaching, the outcome dimension emerged as a significant mediator, aligning with the postulation of the causal

17508054, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

relationship between psychological needs and autonomous motivation in SDT (Ryan & Deci, 2000). Conceptually, the outcome dimension closely relates to the basic psychological need for competence. Therefore, it is possible that the intervention successfully improved participants' personal accomplishment, which fulfilled their competence needs and, in turn, promoted their autonomous motivation for teaching. The present results also supported the resilience dimension as the mediator underlying the indirect intervention effect on autonomous motivation. Resnick et al. (2019) argued that the concepts of resilience and motivation are intertwined and that the characteristics of resilient and intrinsically motivated people are similar. Empirical evidence has also suggested their interconnectedness (León-Guereño et al., 2020). Perhaps teachers with higher abilities to bounce back from setbacks or adversities are more likely to overcome obstacles effectively and experience more mastery episodes, contributing to their autonomous motivation (Resnick et al., 2019). Nevertheless, given that resilience and autonomous motivation were both assessed before and after the intervention, future research is needed to validate and inform their directional relationship.

LIMITATIONS

There are at least six limitations in this study. First, the intervention duration was two months, which might be relatively short for an intervention study and possibly insufficient time to improve teachers' longer-term well-being. Future work is worth considering a longer training timeframe and extra follow-up assessments to examine the effectiveness of the intervention. Second, all measurements were based on participants' self-reported ratings. Thus, the results may be biased due to common method variance and social desirability (Chen et al., 2020), and a social desirability measure is worth to be included in future research. Relatedly, the non-significant effects (e.g., relationships) may also be explained by cultural biases in participants' perceptions of interpersonal relatedness (i.e., high expectations of potentially developing positive working relationships). Alternative assessment should be used in future studies to validate the present results (e.g., biophysiological approach; Kreibig & Gross, 2017). Third, although the current well-being measures were employed in prior research, the conceptualization and measurement of individual PROSPER dimensions differ across studies. Therefore, caution should be taken in the present interpretation. Fourth, the present study did not collect additional demographic information from the participants, except their age, gender, and teaching experience. Future studies may consider incorporating additional demographic variables, such as participants' educational level, household income, and socio-economic status. Fifth, in addition to the inadequate demographic information collected, the measures of motivation variables could also be improved. We recommend that future studies consider incorporating essential SDT variables, such as the three psychological needs (autonomy, competence, and relatedness), to comprehensively investigate the relationships between PROSPER well-being and autonomous motivation for teaching. Additional three variables may further uncover the underlying mechanisms and dynamics of the dimensions in the PROSPER to enhance teacher motivation. Finally, the usage of the smartphone app and participation in online activities were low in this study. Using the app and participating in online activities were also made voluntary to avoid overburdening participants with demanding schedules. Future studies should provide concrete guidelines or requirements for using the app and completing the online activity while adopting factorial research designs to test the effects of individual intervention components.

17508054, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

CONCLUSION AND IMPLICATIONS

The present study demonstrated the potential value of a PROSPER-based positive psychological intervention on the well-being (i.e., positivity, outcome, strength, engagement, and resilience) of Hong Kong in-service preschool teachers. Theoretically, the findings revealed the efficacy of the EASP intervention in promoting pre-school teachers' PROSPER well-being. They demonstrated how enhanced well-being may contribute to their teaching competence. Specifically, teachers' well-being might be the mediating mechanism explaining the positive effects of the current intervention on teachers' motivational aspects of professional competence such as teaching self-efficacy and autonomous motivation. Practically, as the benefits of PROSPER-based intervention in promoting teacher well-being, teaching self-efficacy, and motivation, the EASP program is encouraged to integrate into tertiary teacher training programs to foster pre-service teachers' positive well-being and teaching competencies (Lee et al., 2023). These findings may also inform school leaders and policymakers to support ongoing teachers' well-being and develop and maintain teaching and professional competencies (Datu et al., 2022).

ACKNOWLEDGEMENTS

We would like to express our gratitude to Mr. Cheung Yat Ming, Ryan, Educational Psychologist, as well as Ms. Alexandra Li and Ms. Zoe Cheuk, our valued research assistants, for their invaluable support in conducting this study. We would also like to extend our appreciation to the participating teachers for generously dedicating their time to this research.

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no conflict of interest.

DATA AVAILABILITY STATEMENT

All data are available upon reasonable request.

ETHICS APPROVAL

All procedures performed in this study involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. The ethics approval for this study was provided by The Education University of Hong Kong [approval number = 2019–2020-0407].

CONSENT TO PARTICIPATE

Informed consent was obtained from all participants involved in this study.

ORCID

Alfred S. Y. Lee https://orcid.org/0000-0002-8837-7085

REFERENCES

Abós, Á., Sevil, J., Martín-Albo, J., Aibar, A., & García-González, L. (2018). Validation evidence of the motivation for teaching scale in secondary education. *The Spanish Journal of Psychology*, *21*, E9. https://doi.org/10.1017/sjp.2018.11

Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology*, *22*(3), 309–328. https://doi.org/10.1108/02683940710733115

17508854, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice Hall.

Blömeke, S., Felbrich, A., Müller, C., Kaiser, G., & Lehmann, R. (2008). Effectiveness of teacher education: State of research, measurement issues and consequences for future studies. *ZDM*, *40*(5), 719–734. https://doi.org/10.1007/s11858-008-0096-x

Burić, I., & Moe, A. (2020). What makes teachers enthusiastic: The interplay of positive affect, self-efficacy and job satisfaction. *Teaching and Teacher Education*, *89*, 103008. https://doi.org/10.1016/j.tate.2019.103008

Castro-Schilo, L., & Grimm, K. J. (2018). Using residualized change versus difference scores for longitudinal research. *Journal of Social and Personal Relationships*, *35*(1), 32–58. https://doi.org/10.1177/0265407517718387

Chan, D. K. C., & Hagger, M. S. (2012). Transcontextual development of motivation in sport injury prevention among elite athletes. *Journal of Sport and Exercise Psychology*, *34*(5), 661–682. https://doi.org/10.1123/jsep.34.5.661

Chen, P., Powers, J. T., Katragadda, K. R., Cohen, G. L., & Dweck, C. S. (2020). A strategic mindset: An orientation toward strategic behavior during goal pursuit. *Proceedings of the National Academy of Sciences*, *117*(25), 14066–14072. https://doi.org/10.1073/pnas.2002529117

Corp, I. B. M. (2019). IBM SPSS Statistics for Windows, Version 26.0. In *Armonk*. IBM Corp.

Csikszentmihalyi, M. (2020). *Finding flow: The psychology of engagement with everyday life*. Hachette UK.

Datu, J. A. D., Lee, A. S. Y., & Chung, K. K. H. (2023). Leveraging technology for pre-service teachers' well-being: The effectiveness of a multicomponent positive psychology intervention in pre-service preschool teachers in Hong Kong. *Applied Psychology. Health and Well-Being*, *15*(4), 1446–1471. https://doi.org/10.1111/aphw.12446

Datu, J. A. D., Lee, A. S. Y., Fung, W. K., Cheung, R. Y. M., & Chung, K. K. H. (2022). Prospering in the midst of the COVID-19 pandemic: The effects of PROSPER-based intervention on psychological outcomes among preschool teachers. *Journal of School Psychology*, *94*, 66–82. https://doi.org/10.1016/j.jsp.2022.08.003

Enders, C. K., & Bandalos, D. L. (2001). The relative performance of full information maximum likelihood estimation for missing data in structural equation models. *Structural Equation Modeling*, *8*(3), 430–457. https://doi.org/10.1207/S15328007sem0803_5

Grant, A. A., Jeon, L., & Buettner, C. K. (2019). Relating early childhood teachers' working conditions and well-being to their turnover intentions. *Educational Psychology*, *39*(3), 294–312. https://doi.org/10.1080/01443410.2018.1543856

Guglielmi, D., Bruni, I., Simbula, S., Fraccaroli, F., & Depolo, M. (2016). What drives teacher engagement: A study of different age cohorts. *European Journal of Psychology of Education*, *31*(3), 323–340. https://doi.org/10.1007/s10212-015-0263-8

Hu, L. t., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: a Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Kreibig, S. D., & Gross, J. J. (2017). Understanding mixed emotions: Paradigms and measures. *Current Opinion in Behavioral Sciences*, *15*, 62–71. https://doi.org/10.1016/j.cobeha.2017.05.016

Kunter, M., Klusmann, U., Baumert, J., Richter, D., Voss, T., & Hachfeld, A. (2013). Professional competence of teachers: Effects on instructional quality and student development. *Journal of Educational Psychology*, *105*(3), 805–820. https://doi.org/10.1037/a0032583

Lam, S.-f., Cheng, R. W.-y., & Choy, H. C. (2010). School support and teacher motivation to implement project-based learning. *Learning and Instruction*, *20*(6), 487–497. https://doi.org/10.1016/j.learninstruc.2009.07.003

Lee, A. S. Y., Datu, J. A. D., Chan, D. K. C., Lau, E. Y. H., Fung, W. K., Cheng, R. W.-y., Cheung, R. Y. M., & Chung, K. K. H. (2023). The effects of a PROSPER-based intervention on well-being among pre-service preschool teachers during the COVID-19 pandemic: A randomized control trial. *Educational Psychology*, *43*(2–3), 228–245. https://doi.org/10.1080/01443410.2023.2189649

Lee, A. S. Y., Datu, J. A. D., Chung, K. K. H., Fung, W. K., & Cheung, R. Y. M. (2024). Can a multicomponent positive psychological intervention promote well-being in parents of young children? A randomized controlled trial study in Hong Kong. *Family Process*, Advance online publication. https://doi.org/10.1111/famp.12979

17508854, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Lee, A. S. Y., Fung, W. K., & Chung, K. K. H. (2023). Reciprocal relationships between early childhood education Teachers' well-being and self-efficacy: A cross-lagged panel design. *The Asia-Pacific Education Researcher*, Advance online publication. https://doi.org/10.1007/s40299-023-00756-8

Lee, A. S. Y., Fung, W. K., Chung, K. K. H., Datu, J. A. D., & Cheung, R. Y. M. (2023). The benefits of PROSPER-based intervention for international preschool teachers in Hong Kong: Evidence from the EASP Programme. *Manuscript submitted for publication*.

Lee, A. S. Y., Fung, W. K., Datu, J. A. D., & Chung, K. K. H. (2022). Well-being profiles of pre-service teachers in Hong Kong: Associations with teachers' self-efficacy during the COVID-19 pandemic. *Psychological Reports*, Advance online publication, 332941221127631. https://doi.org/10.1177/00332941221127631

Lee, A. S. Y., Standage, M., Hagger, M. S., & Chan, D. K. C. (2021). Applying the trans-contextual model to promote sport injury prevention behaviors among secondary school students. *Scandinavian Journal of Medicine & Science in Sports*, *31*(9), 1840–1852. https://doi.org/10.1111/sms.14002

León-Guereño, P., Tapia-Serrano, M. A., & Sánchez-Miguel, P. A. (2020). The relationship of recreational runners' motivation and resilience levels to the incidence of injury: A mediation model. *PLoS ONE*, *15*(5), e0231628. https://doi.org/10.1371/journal.pone.0231628

Little, R. J., & Rubin, D. B. (2019). *Statistical analysis with missing data* (3rd ed.). John Wiley & Sons. https://doi.org/10.1002/9781119482260

Malik, P., & Garg, P. (2018). Psychometric testing of the resilience at work scale using Indian sample. *Vikalpa*, *43*(2), 77–91. https://doi.org/10.1177/0256090918773922

McGrath, R. E. (2019). *Technical report: The VIA assessment suite for adults: Development and initial evaluation* (revised ed.). VIA Institute on Character. https://www.viacharacter.org/pdf/Technical%20Report%20Revised%20Edition%202019_1.pdf

Muthén, L. K., & Muthén, B. (2017). *Mplus user's guide: Statistical analysis with latent variables, user's guide*. Muthén & Muthén.

Neff, K. (2003). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity*, *2*(2), 85–101. https://doi.org/10.1080/15298860309032

Noble, T., & McGrath, H. (2015). PROSPER: A new framework for positive education. *Psychology of Well-Being*, *5*(1), Article 2. https://doi.org/10.1186/s13612-015-0030-2

Poghosyan, L., Aiken, L. H., & Sloane, D. M. (2009). Factor structure of the Maslach burnout inventory: An analysis of data from large scale cross-sectional surveys of nurses from eight countries. *International Journal of Nursing Studies*, *46*(7), 894–902. https://doi.org/10.1016/j.ijnurstu.2009.03.004

Resnick, B., Klinedinst, N. J., Yerges-Armstrong, L., Magaziner, J., Orwig, D., Hochberg, M. C., Gruber-Baldini, A. L., & Dorsey, S. G. (2019). Genotype, resilience and function and physical activity post hip fracture. *International Journal of Orthopaedic and Trauma Nursing*, *34*, 36–42. https://doi.org/10.1016/j.ijotn.2019.03.005

Riepenhausen, A., Wackerhagen, C., Reppmann, Z. C., Deter, H.-C., Kalisch, R., Veer, I. M., & Walter, H. (2022). Positive cognitive reappraisal in stress resilience, mental health, and well-being: A comprehensive systematic review. *Emotion Review*, *14*(4), 310–331. https://doi.org/10.1177/17540739221114642

Roth, G., Assor, A., Kanat-Maymon, Y., & Kaplan, H. (2007). Autonomous motivation for teaching: How self-determined teaching may lead to self-determined learning. *Journal of Educational Psychology*, *99*(4), 761–774. https://doi.org/10.1037/0022-0663.99.4.761

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68–78. https://doi.org/10.1037/0003-066X.55.1.68

Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology*, *61*, Article 101860. https://doi.org/10.1016/j.cedpsych.2020.101860

Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement*, *66*(4), 701–716. https://doi.org/10.1177/0013164405282471

Shah, M. (2011). The dimensionality of teacher collegiality and the development of teacher collegiality scale. *International Journal of Education*, *3*(2), Article E10. https://doi.org/10.5296/ije.v3i2.958

Snyder, C. R. (2002). Hope theory: Rainbows in the mind. *Psychological Inquiry*, *13*(4), 249–275. https://doi.org/10.1207/S15327965PLI1304_01

17508854, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The meaning in life questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology*, *53*(1), 80–93. https://doi.org/10.1037/0022-0167.53.1.80

Su, T., Tian, L., & Huebner, E. S. (2021). The reciprocal relations among prosocial behavior, satisfaction of relatedness needs at school, and subjective well-being in school: A three-wave cross-lagged study among Chinese elementary school students. *Current Psychology*, *40*(8), 3734–3746. https://doi.org/10.1007/s12144-019-00323-9

Taylor, S. G., Roberts, A. M., & Zarrett, N. (2021). A brief mindfulness-based intervention (bMBI) to reduce teacher stress and burnout. *Teaching and Teacher Education*, *100*, 103284. https://doi.org/10.1016/j.tate.2021.103284

Totenhagen, C. J., Hawkins, S. A., Casper, D. M., Bosch, L. A., Hawkey, K. R., & Borden, L. M. (2016). Retaining early childhood education workers: A review of the empirical literature. *Journal of Research in Childhood Education*, *30*(4), 585–599. https://doi.org/10.1080/02568543.2016.1214652

Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, *17*(7), 783–805. https://doi.org/10.1016/S0742-051x(01)00036-1

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*(6), 1063–1070. https://doi.org/10.1037//0022-3514.54.6.1063

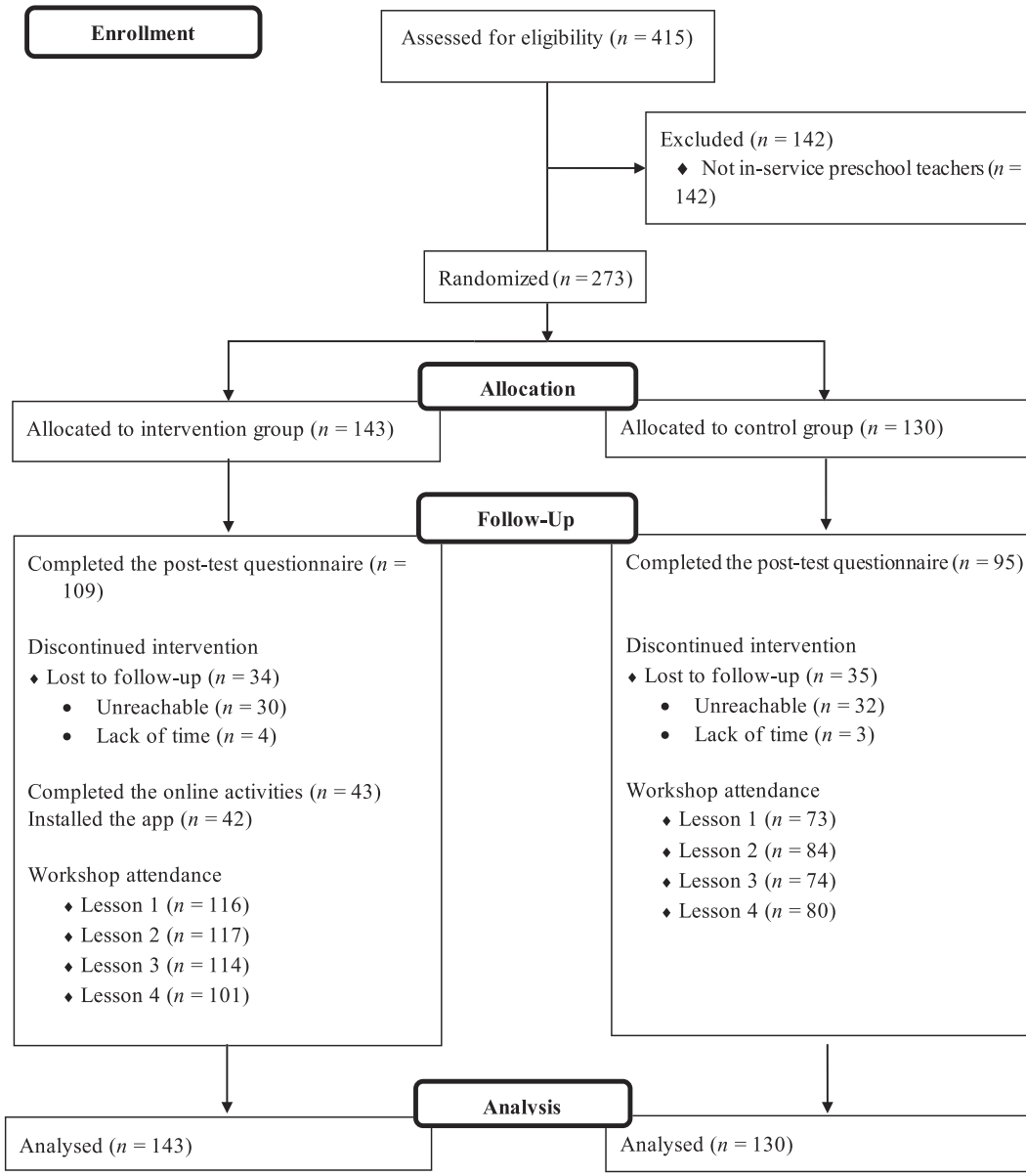
Witvliet, C. v., Richie, F. J., Root Luna, L. M., & Van Tongeren, D. R. (2019). Gratitude predicts hope and happiness: A two-study assessment of traits and states. *The Journal of Positive Psychology*, *14*(3), 271–282. https://doi.org/10.1080/17439760.2018.1424924

Zee, M., & Koomen, H. M. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Review of Educational Research*, *86*(4), 981–1015. https://doi.org/10.3102/0034654315626801

How to cite this article: Lee, A. S. Y., Fung, W. K., Chan, D. K. C., & Chung, K. K. H. (2024). The effectiveness of a positive psychological intervention for promoting preschool teachers' well-being and professional competence: EASP intervention program. *Applied Psychology: Health and Well-Being*, 1–33. https://doi.org/10.1111/aphw.12544

17508054, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

APPENDIX A: CONSORT FLOW DIAGRAM



17508854, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

APPENDIX B: EASP PROGRAM INTERVENTION MATERIALS

Dimensions	Intervention workshops	Smartphone app	Online activity
Positivity	1. Introduction of self-compassion 2. Activities (1. Understanding the short form of the self-compassion scale, 2. Practicing self-compassion) 3. Discussion of sustainable happiness model 4. Discussion of types of happiness	1. MCQ - self-compassion 2. MCQ - types of happiness 3. SQ - self-compassion 4. SQ - types of happiness 5. Scenarios - self-compassion	1. MCQ - self-compassion 2. SQ - self-compassion
Relationship	1. Introduction of theories (conceptualization of social influence) 2. Introduction of the psychological needs of relatedness (reflective listening and conflict resolution) 3. Activities (1. Collaborative drawing, 2. Creating actively listening opportunities)	1. MCQ - social influence 2. MCQ - responses to conflicts 3. MCQ - shared humanity 4. SQ - responses to conflicts 5. Scenarios - sharing positive experiences with colleagues	1. MCQ - responses to conflicts
Outcome	1. Introduction of SMART goals 2. Introduction of mental subtraction 3. Introduction of strategic mindset 4. Activities (1. Understanding the strategic mindset scale, 2. Setting up SMART goals)	1. MCQ - components of goals 2. MCQ - mental subtraction 3. MCQ - SMART goals 4. MCQ - strategic mindset 5. SQ - goal setting 6. SQ - mental subtraction 7. Scenarios - goal setting	1. MCQ - SMART goals
Strength	1. Introduction of character strengths (hope and gratitude) 2. Introduction and discussion of Snyder (1994)'s hope theory 3. Activities (understanding the gratitude scale) 4. Introduction of gratitude diary	1. MCQ - components of hope 2. MCQ - character strengths 3. SQ - components of hope 4. Gratitude diary 5. Scenarios - gratitude and hope	1. MCQ - character strengths 2. Gratitude diary
Purpose	1. Introduction of personal core value 2. Activities (identification of personal core value)	1. SQ - positive psychology theory 2. Scenarios - personal core value	1. SQ - identification of personal core value
Engagement	1. Introduction of flow state 2. Introduction to growth mindset	1. MCQ - growth mindset 2. MCQ - flow state 3. SQ - growth mindset	1. MCQ - flow state

(Continues)

17580854, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Dimensions	Intervention workshops	Smartphone app	Online activity
	3. Activities (1. Understanding the growth mindset scale, 2. Identifying one's fixed or growth mindset)	4. Scenarios - growth mindset	
Resilience	1. Introduction of coping strategies (positive reappraisal) 2. Discussion of stress 3. Introduction of relaxation breathing techniques 4. Introduction of broadening and building theory 5. Activities (four scenarios on stress management)	1. MCQ - broaden and build theory 2. MCQ - positive reappraisal 3. SQ - positive reappraisal 4. Scenarios - positive reappraisal	1. MCQ - positive reappraisal

Note: MCQ = multiple choice question; SQ = short question.

17508054, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

APPENDIX C: INTERVENTION FIDELITY MEASURES

Intervention fidelity was measured with five measures. Firstly, the intervention materials were reviewed by the research team and workshop coordinator, who consisted of experts with early childhood education, school psychology, and positive psychology backgrounds. Secondly, a research team member attended all four online workshops to provide technical support and ensure that the workshop coordinator delivered the materials as intended. Thirdly, two independent researchers were invited to review the recordings of the four online workshops and completed a 58-item fidelity checklist. The two raters rated each item (e.g., "The coordinator explains three types of happiness clearly", "The purpose of the strategic mindset activity is clear") on a five-point Likert scale ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). The mean score of the fidelity checklist was 4.42 ($SD = 0.63$) out of 5. The two raters shared the same scores on 49 items, yielding a percentage agreement rate of 84.48%. Fourth, after the intervention, participants were requested to complete a 13-item satisfaction survey. Eleven items, such as "The workshop coordinator was well-prepared" and "I achieved the expected outcomes from this intervention," were rated on a four-point scale ranging from 1 (*Strongly disagree*) to 4 (*Strongly agree*). Overall, the participants rated 3.31 ($SD = 0.57$) out of 4 in the survey, suggesting that the participants were satisfied with the intervention. Fifth, participants from the intervention were invited to respond to an additional six items (e.g., "How often did you adopt the positive psychological skills learned from the intervention during the study period?", and "How much time have you spent on the EASP app") tapping their engagement in the intervention. The mean score of participants who adopted positive psychological skills was 3.55 ($SD = 0.66$) out of 5. The results suggested that 43 of 109 (38.53%) participants installed the smartphone app. On average, they spent 43.56 ($SD = 30.75$) minutes on the app.

17580854, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

APPENDIX D: BASELINE CHARACTERISTICS

	Intervention group ($n = 143$)	Control group ($n = 130$)
Gender		
Male	2 (1.40%)	1 (0.78%)
Female	141 (98.60%)	128 (98.46%)
Prefer not to say	0 (0.00%)	1 (0.78%)
Age	34.27 (9.42)	34.88 (9.66)
Teaching experience	12.08 (9.85)	12.73 (9.55)
Positivity	3.29 (0.56)	3.27 (0.58)
Relationship	3.45 (0.71)	3.61 (0.64)
Outcome	5.19 (0.88)	5.10 (0.90)
Strength	5.04 (1.12)	5.07 (1.12)
Purpose	4.74 (1.08)	4.71 (1.10)
Engagement	4.78 (1.04)	4.70 (1.07)
Resilience	4.76 (1.35)	4.65 (1.22)
TSE- student engagement	3.90 (0.56)	3.80 (0.60)
TSE-instructional strategies	3.79 (0.53)	3.75 (0.57)
TSE- classroom management	3.88 (0.64)	3.81 (0.58)
AMT-intrinsic motivation	4.13 (0.59)	4.16 (0.65)
AMT-identified motivation	3.95 (0.57)	3.95 (0.64)

Note: TSE = Teachers' self-efficacy; AMT = Autonomous motivation for teaching.

17580854, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

APPLIED PSYCHOLOGY: Health and Well-Being IAAP

APPENDIX E: ZERO-ORDER CORRELATIONS, DESCRIPTIVE STATISTICS, AND RELIABILITY COEFFICIENTS OF THE STUDY VARIABLES AT BASELINE AND POST-TEST ($N = 204$)

Components	1	2	3	4	5	6	7	8	9	10	11	12
Baseline												
1. Positivity	1											
2. Relationship	.22**	1										
3. Outcome	.46**	.27**	1									
4. Strength	.44**	.22**	.59**	1								
5. Purpose	.48**	.32**	.53**	.58**	1							
6. Engagement	.51**	.26**	.51**	.49**	.53**	1						
7. Resilience	.35**	.22**	.36**	.47**	.47**	.32**	1					
8. TSE-SE	.35**	.31**	.65**	.50**	.45**	.50**	.27**	1				
9. TSE-IS	.39**	.30**	.66**	.51**	.45**	.44**	.27**	.75**	1			
10. TSE- CM	.25**	.23**	.60**	.45**	.30**	.37**	.22**	.57**	.65**	1		
11. AMT-Intrin	.41**	.20**	.51**	.40**	.45**	.47**	.32**	.54**	.51**	.40**	1	
12. AMT-Iden	.41**	.11	.39**	.44**	.45**	.46**	.33**	.44**	.42**	.31**	.78**	1
Post-test												
13. Positivity	.61**	.12	.44**	.42**	.49**	.42**	.37**	.34**	.34**	.27**	.37**	.37**
14. Relationship	.31**	.71**	.32**	.32**	.37**	.28**	.30**	.32**	.32**	.23**	.20**	.23**
15. Outcome	.33**	.14	.60**	.51**	.36**	.51**	.41**	.55**	.53**	.44**	.46**	.40**
16. Strength	.33**	.16*	.41**	.52**	.45**	.44**	.39**	.43**	.36**	.31**	.40**	.42**
17. Purpose	.40**	.31**	.45**	.54**	.68**	.48**	.38**	.43**	.36**	.24**	.43**	.41**
18. Engagement	.39**	.15*	.47**	.46**	.44**	.65**	.31**	.44**	.38**	.24**	.42**	.42**
19. Resilience	.39**	.17*	.42**	.52**	.46**	.42**	.63**	.38**	.31**	.28**	.25**	.25**
20. TSE-SE	.25**	.12	.44**	.30**	.21**	.37**	.19**	.56**	.42**	.45**	.40**	.32**
21. TSE-IS	.27**	.17*	.48**	.28**	.26**	.35**	.26**	.56**	.57**	.43**	.42**	.32**
22. TSE- CM	.18**	.12	.46**	.37**	.20**	.29**	.18*	.49**	.42**	.54**	.40**	.32**

17580854, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Components	1	2	3	4	5	6	7	8	9	10	11	12
23. AMT-Intrin	.34**	.08	.44**	.41**	.36**	.54**	.24**	.46**	.40**	.33**	.61**	.54**
24. AMT-Iden	.36**	.01	.42**	.41**	.37**	.53**	.18*	.44**	.39**	.29**	.56**	.58**
Mean	3.28	3.52	5.15	5.05	4.73	4.75	4.71	3.86	3.77	3.85	4.15	3.95
SD	0.57	0.68	0.88	1.12	1.09	1.05	1.29	0.58	0.55	0.61	0.62	0.61
Cronbach's α	.87	.88	.92	.88	.85	.91	.90	.86	.85	.89	.87	.74
Skewness	−0.36	−0.36	0.14	−0.28	−0.33	−.008	−0.22	0.02	0.06	0.26	−0.16	−0.08
Kurtosis	0.76	0.51	−0.44	−0.06	0.07	−0.44	−0.48	−0.45	−0.28	−0.21	−0.10	−0.45
AVE	.39	.58	.61	.73	.66	.68	.79	.65	.55	.66	.61	.45
SV[1]	.26	.10	.44	.35	.34	.28	.22	.56	.56	.42	.61	.61

Note: TSE = Teachers' self-efficacy; SE = Student engagement; IS = Instructional strategies; CM = Classroom management; AMT = Autonomous motivation for teaching; Intrin = Intrinsic motivation; Iden = Identified motivation; AVE = average variance extracted; SV = shared variance.
[1]Only the highest shared variances are presented to improve readability.
* $p < .05$, ** $p < .01$.

Components	13	14	15	16	17	18	19	20	21	22	23	24
Baseline												
1. Positivity												
2. Relationship												
3. Outcome												
4. Strength												
5. Purpose												
6. Engagement												
7. Resilience												
8. TSE-SE												
9. TSE-IS												
10. TSE- CM												
11. AMT-Intrin												
12. AMT-Iden												

17580854, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Components	13	14	15	16	17	18	19	20	21	22	23	24
Post-test												
13. Positivity	1											
14. Relationship	.29**	1										
15. Outcome	.43**	.30**	1									
16. Strength	.43**	.37**	.58**	1								
17. Purpose	.55**	.53**	.51**	.65**	1							
18. Engagement	.51**	.26**	.59**	.54**	.58**	1						
19. Resilience	.46**	.32**	.51**	.51**	.49**	.42**	1					
20. TSE-SE	.26**	.29**	.63**	.55**	.37**	.43**	.35**	1				
21. TSE-IS	.29**	.34**	.66**	.53**	.39**	.48**	.36**	.77**	1			
22. TSE- CM	.26**	.28**	.55**	.53**	.40**	.42**	.33**	.72**	.70**	1		
23. AMT-Intrin	.36**	.22**	.54**	.45**	.42**	.54**	.39**	.46**	.48**	.42**	1	
24. AMT-Iden	.39**	.16*	.56**	.49**	.43**	.59**	.39**	.47**	.47**	.43**	.88**	1
Mean	3.31	3.61	5.21	5.16	4.83	.491	4.91	3.86	3.82	3.82	4.01	3.91
SD	0.62	0.63	0.87	1.02	0.97	1.05	1.11	0.59	0.56	0.57	0.66	0.66
Cronbach's α	.90	.88	.93	.90	.82	.92	.91	.91	.89	.88	.90	.85
Skewness	−0.54	−0.63	−0.07	−0.30	−0.25	−0.24	−0.18	−0.14	−0.11	−0.01	−0.27	−0.38
Kurtosis	0.87	1.25	−0.44	−0.15	0.55	−0.22	−0.03	0.04	0.24	−0.01	−0.37	0.06
AVE	.45	.59	.62	.75	.69	.73	.68	.72	.64	.59	.67	.60
SV[1]	.30	.28	.44	.42	.42	.35	.26	.59	.59	.52	.77	.77

Note: TSE = Teachers' self-efficacy; SE = Student engagement; IS = Instructional strategies; CM = Classroom management; AMT = Autonomous motivation for teaching; Intrin = Intrinsic motivation; Iden = Identified motivation; AVE = average variance extracted; SV = shared variance.

[1]Only the highest shared variances are presented to improve readability.

* $p < .05$, ** $p < .01$.

17580854, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

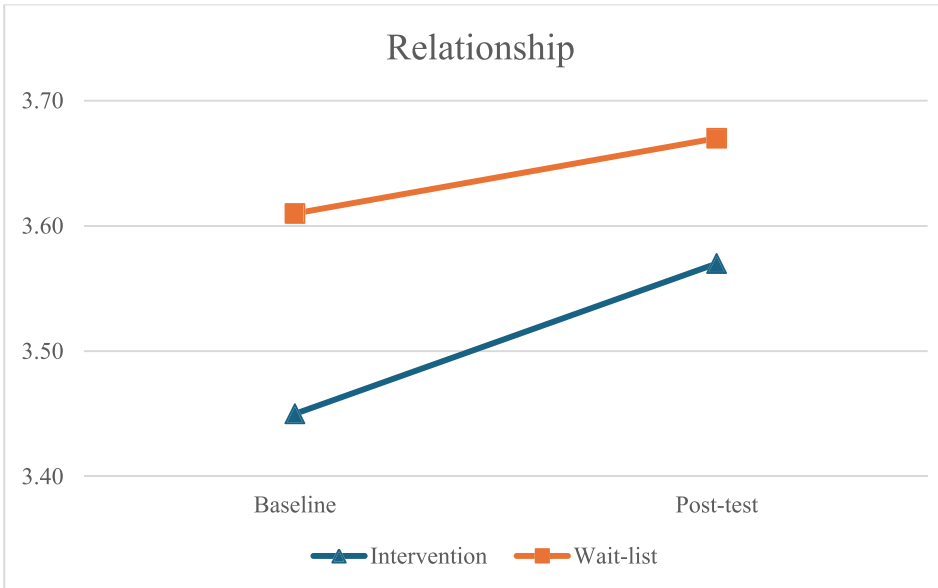
APPENDIX F: COMPARISON OF OUTCOMES BETWEEN INTERVENTION AND CONTROL GROUP PARTICIPANTS

	Intervention group ($n = 143$)		Control group ($n = 130$)		Independent t-test
Dimensions	**Baseline**	**Post-test**	**Baseline**	**Post-test**	p_2
Positivity	3.29 (0.56)	3.39 (0.61)	3.27 (0.58)	3.21 (0.63)	.04
	$p_1 = .03$		$p_1 = .18$		
Relationship	3.45 (0.71)	3.57 (0.59)	3.61 (0.64)	3.67 (0.66)	.31
	$p_1 = .07$		$p_1 = .98$		
Outcome	5.19 (0.88)	5.40 (0.77)	5.10 (0.90)	5.00 (0.94)	.01
	$p_1 = .03$		$p_1 = .03$		
Strength	5.04 (1.12)	5.25 (0.95)	5.07 (1.12)	5.07 (1.09)	.20
	$p_1 = .02$		$p_1 = .33$		
Purpose	4.74 (1.08)	4.87 (0.91)	4.71 (1.10)	4.78 (1.04)	.51
	$p_1 = .14$		$p_1 = .50$		
Engagement	4.78 (1.04)	5.05 (1.03)	4.70 (1.07)	4.76 (1.06)	.04
	$p_1 = .04$		$p_1 = .93$		
Resilience	4.76 (1.35)	5.08 (1.12)	4.65 (1.22)	4.72 (1.08)	.02
	$p_1 = .01$		$p_1 = .71$		
TSE-student engagement	3.90 (0.56)	3.93 (0.51)	3.80 (0.60)	3.80 (0.65)	.07
	$p_1 = .58$		$p_1 = .34$		
TSE-instructional strategies	3.79 (0.53)	3.90 (0.49)	3.75 (0.57)	3.74 (0.61)	.02
	$p_1 = .06$		$p_1 = .21$		
TSE- classroom management	3.88 (0.64)	3.86 (0.51)	3.81 (0.58)	3.80 (0.63)	.34
	$p_1 = .49$		$p_1 = .24$		
AMT-intrinsic motivation	4.13 (0.59)	4.10 (0.59)	4.16 (0.65)	3.91 (0.73)	.04
	$p_1 = .20$		$p_1 = .00$		
AMT-identified motivation	3.95 (0.57)	4.03 (0.57)	3.95 (0.64)	3.76 (0.74)	.01
	$p_1 = .38$		$p_1 = .02$		

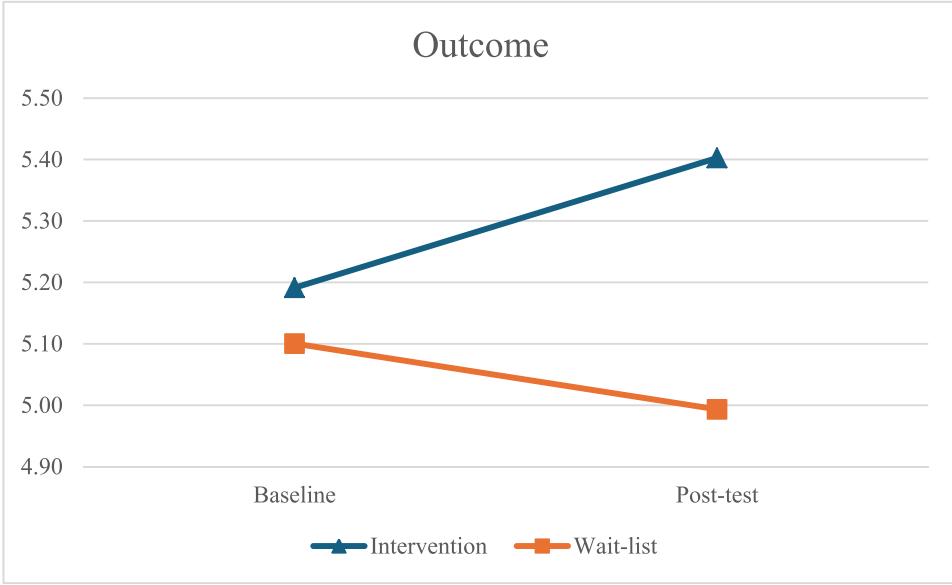
Note: TSE = Teachers' self-efficacy; AMT = Autonomous motivation for teaching.
p_1 = Baseline versus post-test p value; p_2 = Post-test intervention versus post-test control p value.

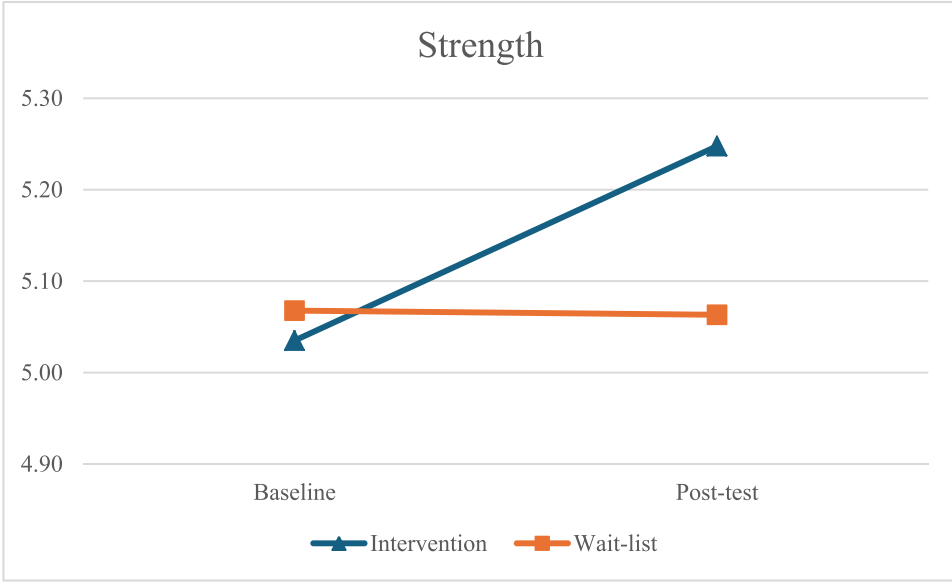
17508054, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

APPENDIX G: GROUP CHANGES FOR THE STUDY VARIABLES DURING INTERVENTION PERIOD

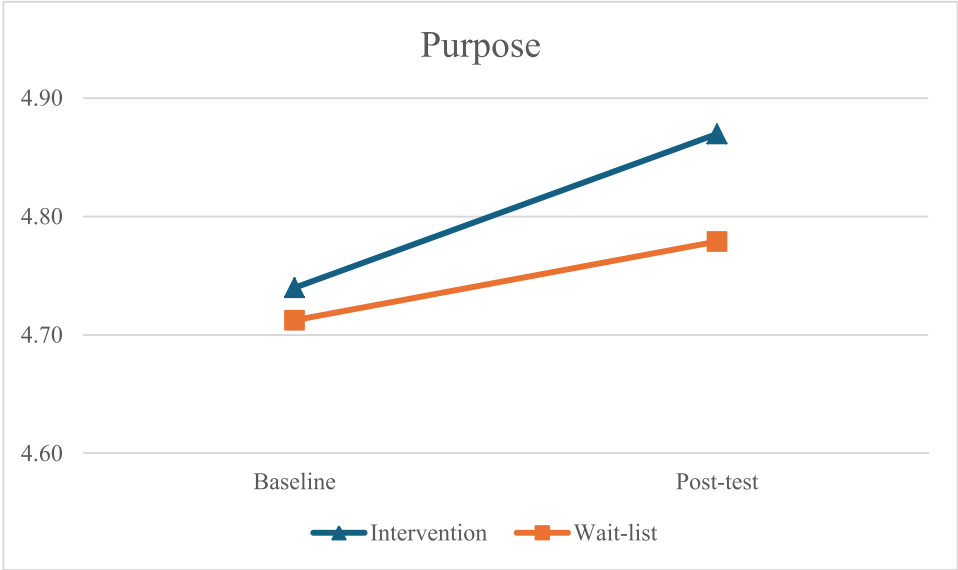


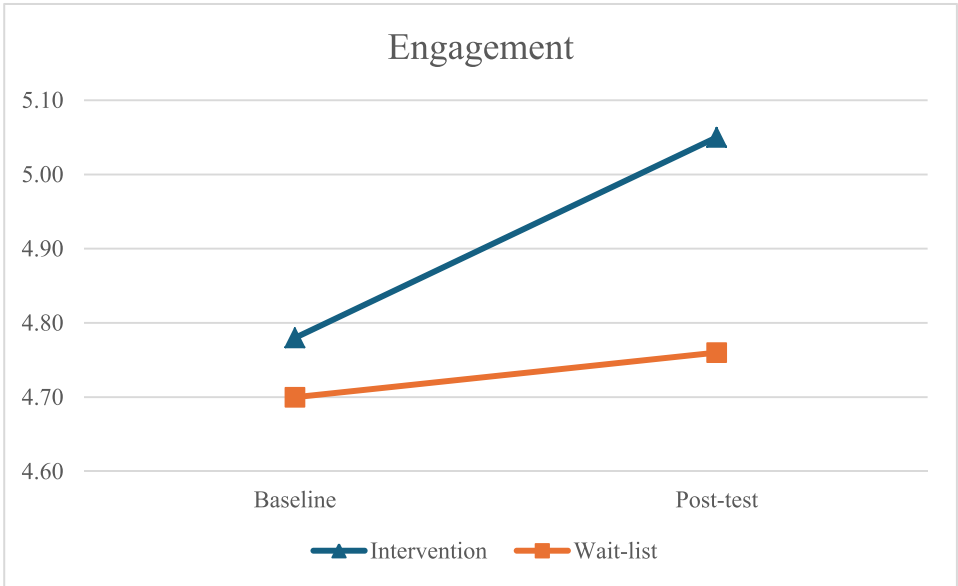
17508854, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License



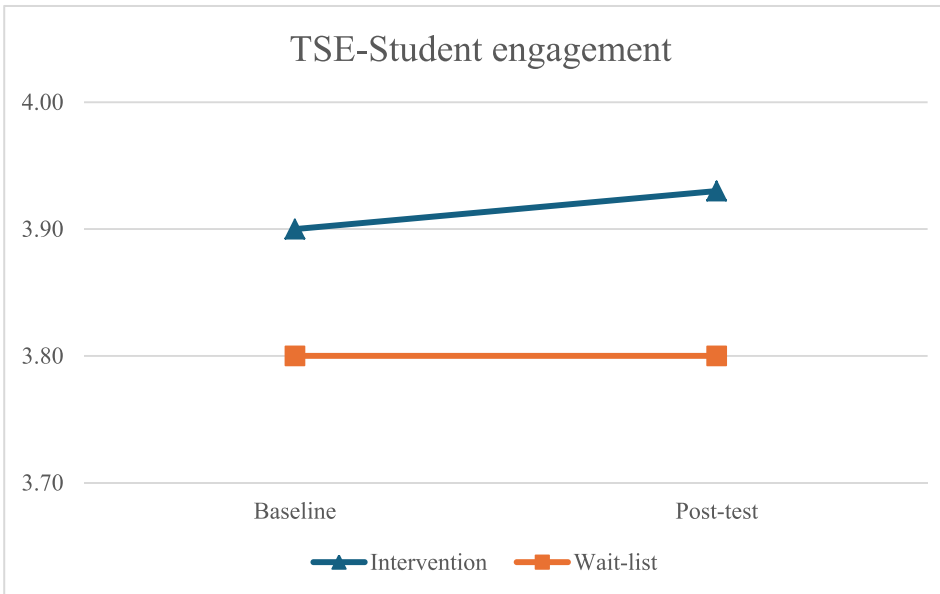


17508854, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

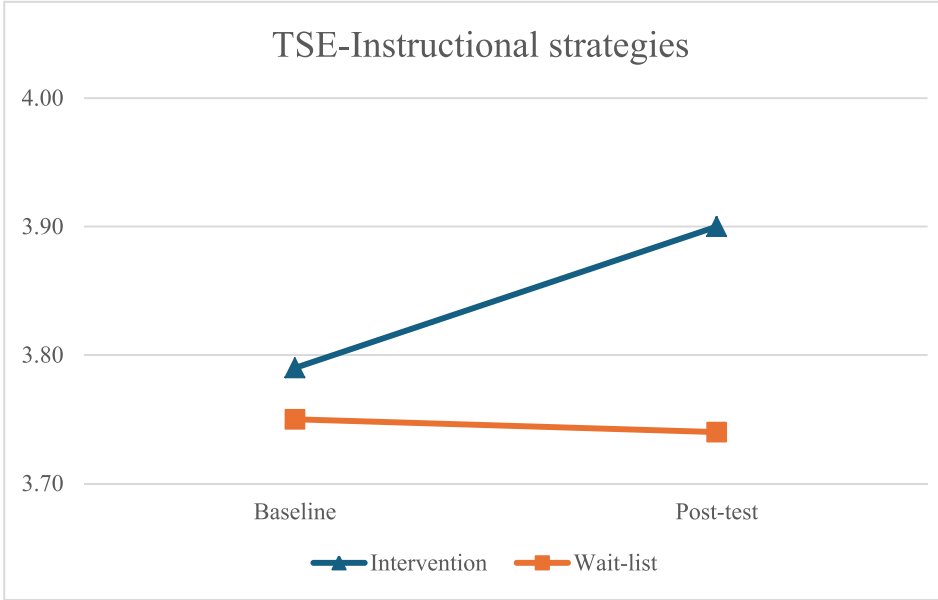


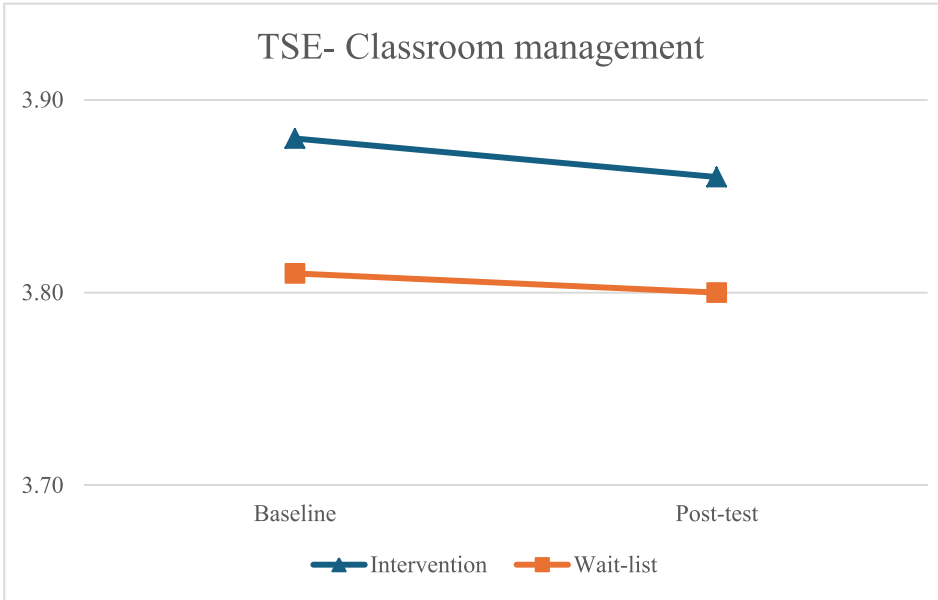


17508854, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

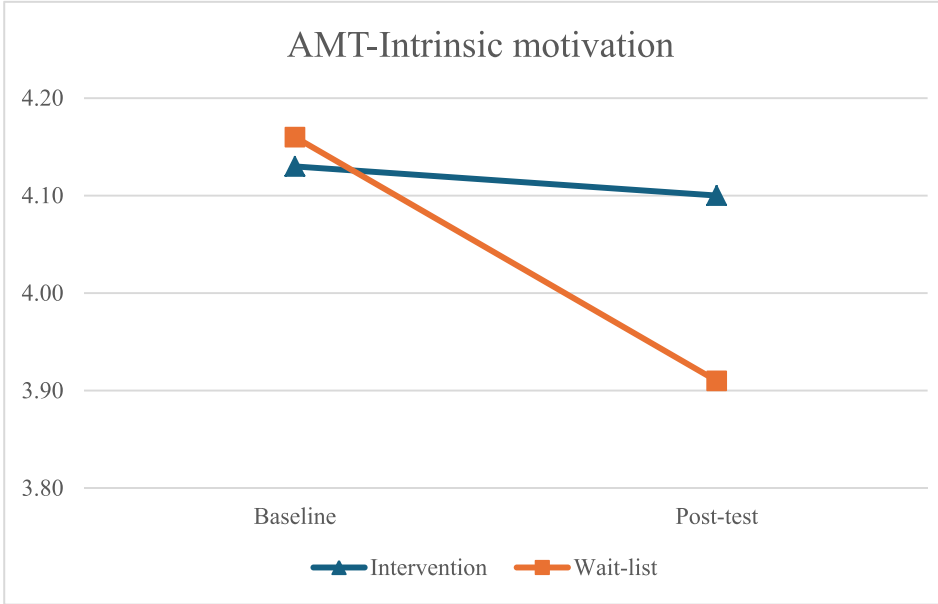


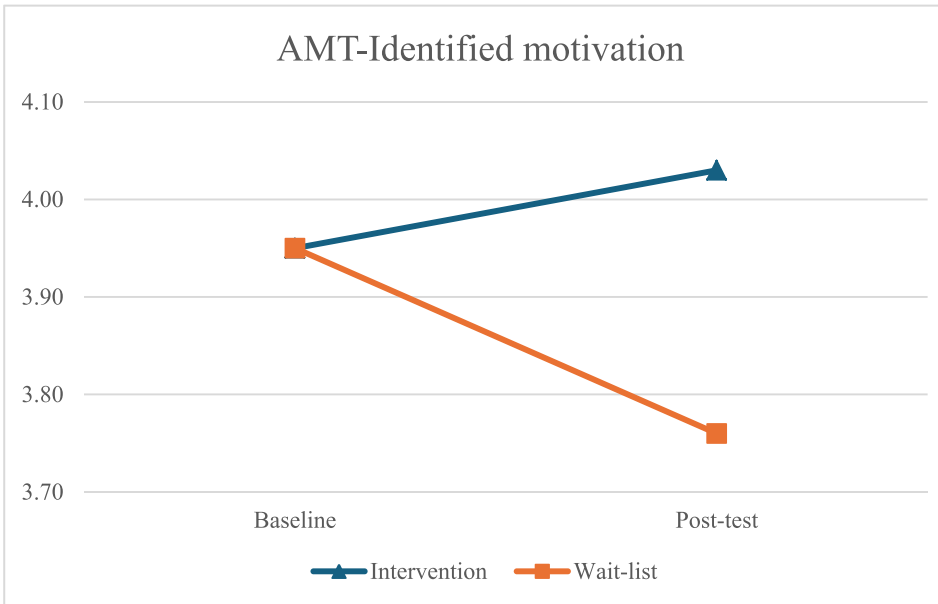
17508854, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License





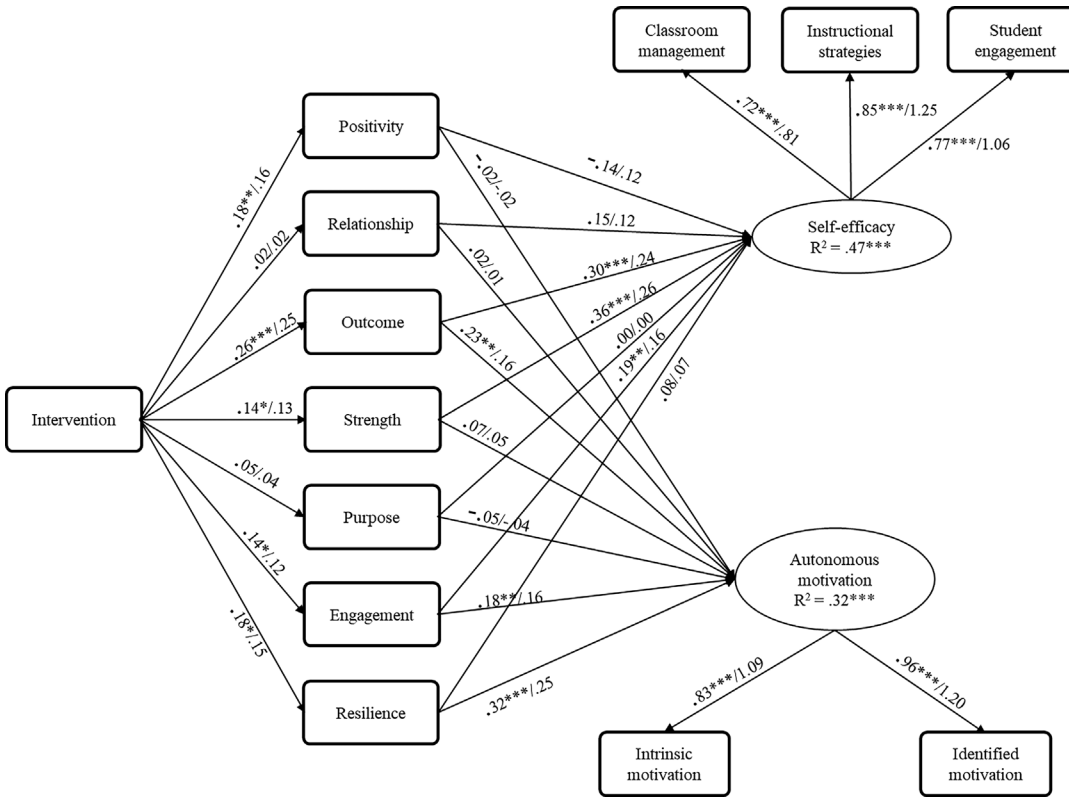
17508854, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License





17508054, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

APPENDIX H: THE PROPOSED PROSPER WELL-BEING MODEL ON TEACHERS' PROFESSIONAL COMPETENCE



Note: All the paths were standardized parameter estimates (β) and Cohen's *d*.
* $p < .05$, ** $p < .01$, and *** $p < .001$.

17508854, 0, Downloaded from https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/aphw.12544 by Liverpool Hope University The Sheppard - Worlock Library, Wiley Online Library on [03/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License